

Interventions to Improve Quality of Care: The Kaiser Permanente–Alzheimer’s Association Dementia Care Project

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Objective: To improve quality of dementia care in a Kaiser Permanente service area through rigorous dissemination of practice guidelines and social worker support for physicians and patients.

Study Design: Pre-post design with practice behavior change assessed by medical record review, and provider and caregiver satisfaction with care assessed by surveys.

Methods: A diagnostic guideline and later a management guideline were adopted for use by Kaiser Permanente physicians in metropolitan Los Angeles. Physicians received training based on the guidelines, and social workers provided ancillary support. Eighty-three community-dwelling dementia patients and their caregivers were referred to the project by primary care physicians and then were assessed and followed by social workers. Data were abstracted from medical records to determine whether these interventions led to improved quality of care as indicated by adherence to key care processes derived from the adopted dementia guidelines. Chi-square and *t* tests were applied to compare guideline adherence and satisfaction rates before and after the interventions.

Results: Compared with baseline, higher rates of provider and caregiver satisfaction with Kaiser’s system of dementia care were found at the postintervention follow-up. There also were significantly higher rates of adherence to several practice guideline-based quality measures: assessment of cognitive status; referrals to the Alzheimer’s Association; and assessments of activities of daily living, decision-making capacity, depression, and wandering risk.

Conclusion: Quality of primary care for people with dementia can be improved through guideline implementation with care management support by social workers.

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Healthcare organizations are being challenged to care for the growing number of older adults with chronic health conditions. Dementing diseases, such as Alzheimer’s disease, vascular dementia, and other associated disorders, present particular challenges because there are strong social and behavioral components to disease management. Physicians play a central role in assessment, diagnosis, and treatment; but much of the management for noninstitutionalized individuals is done by families with the support of social

work care managers and community resource organizations. Furthermore, primary care physicians are daily faced with a broad range of disorders and are challenged by dementia patients, who may compensate for cognitive losses with retained social skills during the brief office visit.

Research suggests that Alzheimer’s disease is neither well recognized nor systematically diagnosed.¹⁻³ According to Boise and colleagues,¹ physicians diagnose as few as 50% of dementia cases. Focus groups of primary care physicians from 3 geographic areas found significant barriers to the recognition and formal diagnosis of dementia. Physicians reported difficulty in recognizing possible dementia. Many reported that they relied on families to bring the disease to their attention. There also was a prevalent viewpoint that a formal diagnostic evaluation (including a comprehensive clinical history and mental status examination, laboratory referrals to rule out treatable conditions, and other procedures) is not always necessary.

Yet delay in diagnosis also means delay in treatment. The last 10 years have seen approval of several medications effective in slowing progression of Alzheimer’s disease, the most common type of dementia in people with mild or moderate cognitive impairment.⁴ Furthermore, people with undiagnosed dementia and their families are less likely to gain access to supportive services that can ameliorate caregiver burden and perhaps delay institutionalization.^{5,6}

Clinical practice guidelines have been developed and promoted as tools for improving dementia care.⁷⁻¹¹ However, practitioners often are not familiar with these

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guidelines; and even when disseminated broadly, the guidelines are not implemented uniformly.^{3,12}

Managed care organizations offer some unique possibilities for quality improvement in dementia care. They provide the communication lines for dissemination of guidelines. Their accreditation is dependent on adoption and implementation of guidelines-based quality improvement projects.¹³ Capitated payments can be used creatively to bring in the services of less expensive professionals that may reduce costs or hold them steady while improving quality. A number of pilot projects have been initiated to improve care for people with dementia in managed care settings¹⁴; one such project, involving a large managed care plan in Los Angeles, is described here.

METHODOLOGY

Overview of Project and Description of Intervention

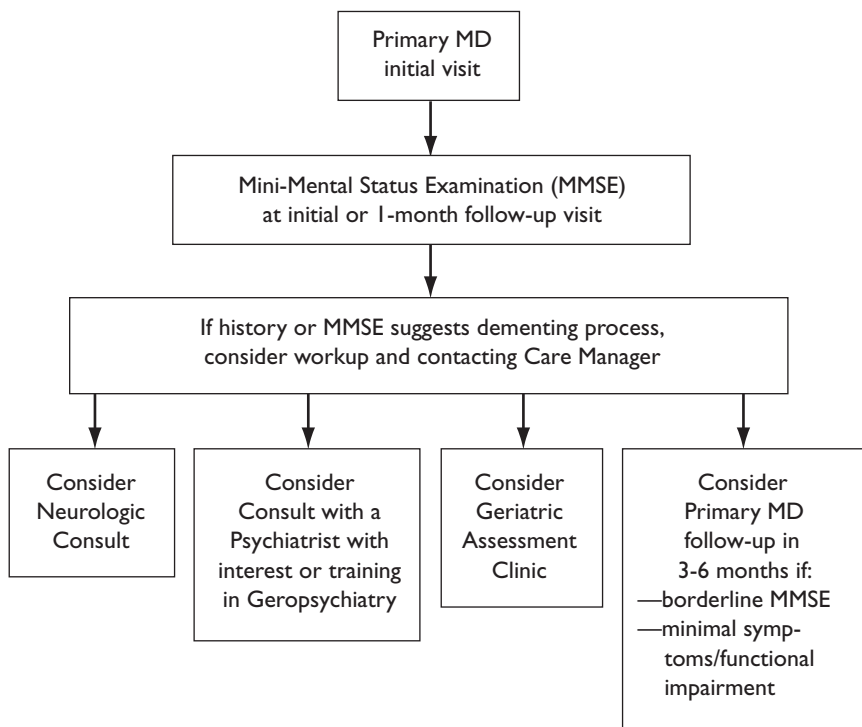
In 1995, Kaiser Permanente's Metropolitan Los Angeles Service Area entered into a partnership with the Alzheimer's Association of Los Angeles to assess and improve the quality of care provided to people with dementia. The Metropolitan Los Angeles Service Area of

Kaiser Permanente serves a densely urban and ethnically diverse region. It includes 2 major medical centers and several satellite clinics. Based on extrapolated demographic estimates,¹⁵ up to 5000 people with dementia may be served by Kaiser Permanente in this region.

The goal of the Dementia Care Project was to improve the quality of care for people with dementia while increasing provider and consumer satisfaction. The study used a longitudinal preintervention/postintervention design, with evaluation data collected by medical record review, caregiver interview, and provider survey. A consensus-based diagnostic practice guideline was developed by a multidisciplinary panel of Kaiser Permanente practitioners and representatives of the Alzheimer's Association's Medical and Scientific Advisory Board. The disciplines of neurology, psychiatry, geriatrics, family practice, psychology, and social work all were represented in the development group. This guideline sought to improve consistency in the diagnostic assessments done at Kaiser Permanente in this region. The project later adopted a management guideline published by Cummings et al.¹⁰ To implement these guidelines as part of the Dementia Care Project, the following steps were taken:

- Promotion by Kaiser Permanente's clinical leadership through letters to providers and presentations at meetings.
- Broad dissemination of a laminated pocket version of the diagnostic guideline to all primary care physicians in this service area.
- Annual in-service training for primary care providers that was notable for its inclusion of physician leaders and caregivers as speakers, as well as the participation of a theater troupe that enacted a physician visit and the administration of a mental status examination. The theater troupe was used to increase physician empathy for presenting families. It also was assumed that the novelty of this form of teaching would enhance learning.
- Broad dissemination of a provider "tool kit" that contained the 2 guidelines and a variety of forms and tests of

Figure. Diagnostic Guidelines for Alzheimer's Association-Kaiser Permanente Metropolitan Los Angeles Dementia Care Project



mental status and depression to support physicians as they followed guideline recommendations.

The **Figure** and **Table 1** present outlines of the diagnostic and management guidelines used by the Dementia Care Project.

The Dementia Care Project relied heavily on social work care managers to support this guideline-based quality initiative. Two full-time professionals were trained by the Alzheimer's Association with a 24-hour intensive course followed by 7 months of mentoring via case conferences. Patients were referred to the social workers by their primary care physicians. The social work care managers provided a range of services in support of physicians, including administration of mental status exams, follow-up with families on the psychosocial aspects of care, home visits, intervention with families regarding behavior management issues, and facilitation of connection to physicians for treatment of comorbid conditions. The care managers also provided guideline-recommended services for family caregivers, including assessments of patients, linkage to services within Kaiser Permanente and in the community, caregiver support groups, family education, and ongoing care management.

Sample

In order to participate in the Dementia Care Project, the person with dementia needed to have a primary care physician in the designated Kaiser Permanente service area, have a guideline-based dementia diagnosis, dwell in the community (not in an institution), and have an involved, nonpaid caregiver. Participants also needed to be referred for participation by their primary care physicians. Data were collected on 83 persons with dementia and their caregivers. The dementia patients

ranged in age from 63 to 93 years (mean age = 80 years). They were 52% male and ethnically diverse (55% African American, 21% Caucasian, 3% Latino, 1% Asian, and 19% other or not specified). This ethnic diversity reflects the

Table 1. California Alzheimer's Disease Management Guideline

<p>Assessment</p> <ul style="list-style-type: none"> • Conduct and document an assessment of: <ul style="list-style-type: none"> — Daily function, including feeding, bathing, dressing, mobility, toileting, continence, and ability to manage finances and medications. — Cognitive status using a reliable and valid instrument (eg, the Mini-Mental Status Examination). — Other medical conditions. — Behavioral problems, psychotic symptoms, or depression. • Reassessment should occur every 6 months or more frequently if there is any sudden decline or behavioral change. • Identify the primary caregiver and assess the adequacy of family and other support systems. • Assess the patient's decision-making capacity and whether a surrogate has been identified. • Caregiver's needs and risks should be assessed and reassessed on a regular basis. • Assess the patient's and family's culture, values, primary language, literacy level, and decision-making process. <p>Treatment</p> <ul style="list-style-type: none"> • Develop and implement an ongoing treatment plan with defined goals. Include: <ul style="list-style-type: none"> — Use of cholinesterase inhibitors, if clinically indicated, to treat cognitive decline. — Appropriate treatment of medical conditions. — Referral to adult day services for appropriate structured activities such as exercise and recreation. • Treat behavioral problems and mood disorders using: <ul style="list-style-type: none"> — Nonpharmacologic approaches such as environmental modification, task simplification, appropriate activities, etc. — Referral to social service agencies or support organizations, including the Alzheimer's Association's Safe Return Program for people who may wander. — Medications, if clinically indicated and if nonpharmacologic approaches prove unsuccessful. <p>Patient and Caregiver Education and Support</p> <ul style="list-style-type: none"> • Discuss the diagnosis, progression, treatment choices, and goals of Alzheimer's disease care with the patient and family in a manner consistent with their values, preferences, and the patient's abilities. • Refer to support organizations for educational materials on community resources, support groups, legal and financial issues, respite care, and future care needs and options. In addition to your own social services department, organizations include: <table border="0" style="margin-left: 20px;"> <tr> <td>Alzheimer's Association</td> <td>1-800-272-3900</td> <td>www.alz.org</td> </tr> <tr> <td>Family Caregiver Alliance</td> <td>1-800-445-8106</td> <td>www.caregiver.org</td> </tr> </table> • Discuss the patient's need to make care choices at all stages of the disease through the use of advance directives and identification of surrogates for medical and legal decision making. • Discuss the intensity of care and end-of-life care decisions with the person who has Alzheimer's disease and with the family. <p>Reporting Requirements</p> <ul style="list-style-type: none"> • Abuse: Monitor for evidence of and report all suspicions of abuse (physical, sexual, or financial abuse; neglect; isolation; abandonment) to Adult Protective Services, your local police department, or the appropriate state agency, as required by law. • Driving: Report the diagnosis of Alzheimer's disease in accordance with applicable state law. 	Alzheimer's Association	1-800-272-3900	www.alz.org	Family Caregiver Alliance	1-800-445-8106	www.caregiver.org
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membership of Kaiser Permanente in this geographic region. Initial Folstein Mini-Mental Status Examination scores¹⁶ recorded after the program intervention began were available for more than 90% of the patients and ranged from 2 to 29 with a mean score of 17. Of the 83 participating caregivers, 63% were spouses; 16%, daughters; 11%, sons; and 10%, other. Their mean age was 66 years. The ethnic breakdown of caregivers was 52% African American, 23% Caucasian, 4% Latino, 4% Asian, 1% Native American, and 16% other or not specified.

Study Outcome Variables

The study was primarily focused on improving the quality of care for people with dementia in this targeted region. The following indicators of improved quality were drawn from the practice guidelines:

- Conducting a cognitive assessment with the Folstein Mini-Mental Status Examination.¹⁶
- Obtaining laboratory tests (B₁₂, Venereal Disease Research Laboratory/rapid plasma reagin [test for syphilis], thyroid-stimulating hormone, complete blood count, and selected blood chemistries).
- Referral to the Alzheimer's Association and to the Safe Return Program (for wandering risk) of the Alzheimer's Association.
- Conducting assessments that included activities of daily living, decision-making capacity, depression, and wandering risk.

These care processes were selected as study outcomes in part because they were guidelines targeted by the intervention. In addition, they have been identified and used with some frequency in studies of the quality of care for dementia.¹⁷ It was predicted that each of these practices would increase as a result of project participation.

Kaiser Permanente physicians were surveyed about their diagnostic practices, referral behaviors, perceptions of services provided to patients with dementia, use of educational materials, and overall satisfaction with the care of patients with dementia and their families. Satisfaction was assessed with a single question: "How satisfied are you with the treatment and support that Kaiser Permanente provides to patients with dementia and their caregivers?" Similarly, participating caregivers were surveyed regarding their satisfaction with dementia-related services at Kaiser Permanente through a series of questions including:

- "Overall, how satisfied have you been with the dementia-related service you and the patient have received at Kaiser Permanente?"
- "How satisfied have you been with the sensitivity and respect shown to you and the patient at Kaiser Permanente?"

- "Have Kaiser Permanente physicians and staff given you educational materials about dementia?"

Caregivers also were questioned regarding referrals they were given both within the organization and to community services.

Evaluation

The study design and consent forms were reviewed and approved by the Kaiser Permanente institutional review board. All study participants gave informed consent for the study. Three different sources of data were used to assess the impact of the project on provider practices and satisfaction with care:

- Medical records, including primary care provider and social work files, were abstracted to assess whether the quality indicators derived from the guidelines were being practiced. Preintervention adherence and postintervention adherence to these guidelines were measured and compared.
- Surveys of primary care physicians, administered before the program was implemented and again 3 years later, were used to assess self-reported practice behaviors and provider satisfaction with Kaiser Permanente's system of care for people with dementia.
- Interviews were conducted with caregivers at baseline and between 3 and 6 months after the program was implemented to assess change in satisfaction with dementia care.

Medical Record Abstractions. Medical records including social work files were audited to examine the system of care before and after implementation of the Dementia Care Project. Project coinvestigators designed and applied a structured chart abstraction form to review the records of the 83 program participants. First, abstractors identified the first mention of dementia or memory problems by medical staff after January 1998, the date on which the Dementia Care Project intervention was initiated. After this index visit, abstractors recorded dates of documentation of the mental status exam, assessments, and results of laboratory tests. The abstractors also documented referrals to staff social workers and to outside resources such as the Alzheimer's Association.

Next, 42 of the 83 participants were randomly selected for a study of preintervention versus postintervention care. Resource limitations dictated the need for this more restricted sample. Records for this subset of subjects were abstracted over 3 years prior to the onset of the intervention in January 1998 to evaluate differences in rates of adherence to the guide-

lines before the intervention compared with after the intervention.

Preintervention and Postintervention Physician Surveys. With cover letters from the chiefs of internal medicine and family practice, a total of 307 surveys were mailed to primary care providers in the Metropolitan Los Angeles Service Area prior to project implementation; 112 surveys were returned, for a 36% response rate. Three years after the project was initiated, 345 surveys were sent to primary care providers in the same service area; 126 were returned, for a 37% response rate. (Because identifiers were not linked to the surveys, it was not possible to determine the percentage of follow-up surveys received from the original preintervention sample.) As an incentive for participation, physicians who completed the follow-up survey were entered into a lottery for a complementary dinner for 2 people.

Caregiver Interviews. Caregivers of patients with a diagnosis of dementia who were enrolled in the project participated in 2 structured telephone interviews. The first interview was conducted by a trained interviewer or the social work care manager at the time of enrollment of the caregiver and patient in the Dementia Care Project. A trained interviewer also conducted the postintervention interview 3 to 6 months after the caregiver and patient began receiving services from the social worker. All 83 participating caregivers completed the baseline and postintervention interviews.

Analysis

Chi-square and *t* tests were applied to compare guideline adherence rates prior to the intervention with those after the intervention, based on the medical record reviews and on the physician surveys. Chi-square and *t* tests were used to compare caregiver satisfaction with care before and after the project intervention.

RESULTS

Medical Record Abstractions

There was an increase in the reporting of Mini Mental Status Examination scores from 16% prior to the project to 93% after the project (chi-square, $P < .001$) among the subset of 42 pre- and postintervention charts reviewed. The first postintervention mental status exam documented in records was most frequently administered by a neurologist (27%), followed by a primary care physician (23%) and then by a social worker (20%). The percentages of patients who obtained each of the fol-

lowing guideline-supported laboratory tests during the postintervention period were: thyroid-stimulating hormone, 84.3%; Venereal Disease Research Laboratory/rapid plasma reagin, 67.5%; B₁₂, 69.9%; complete blood count, 94.0%; electrolytes, 84.3%; blood urea nitrogen, 81.9%; calcium, 75.9%; creatinine, 81.9%; and glucose, 89.2%.

Documentation of referrals to the Alzheimer's Association increased from 3% prior to the project to 76% afterwards (chi-square, $P < .001$), and referrals to the Alzheimer's Association's Safe Return program increased from 0 to 29% (chi-square, $P < .001$). Project social workers made most of the referrals to the Alzheimer's Association (34%), followed in frequency by other staff social workers (19%).

The medical record abstraction identified increased documentation of assessments of activities of daily living (13% preintervention, 93% postintervention; $P < .001$), decision-making capacity (3% preintervention, 19% postintervention; $P < .001$), depression (11% preintervention, 57% postintervention; $P < .001$), and wandering potential (8% preintervention, 74% postintervention; $P < .001$). After the intervention, dementia project social workers were most likely to document an assessment of daily living (32%), followed by neurologists (26%). Project social workers also documented 68% of all assessments for wandering risk. However, depression was noted most frequently by primary care physicians (39%), followed by project social workers (20%) and neurologists (17%). Physicians more frequently documented an assessment of decision-making capacity, (31% by neurologists, 19% by primary care physicians).

Table 2 presents a summary of documented changes in the selected quality indicators from the preintervention to the postintervention period.

Physician Surveys

A comparison of physician responses before and after the intervention showed a trend toward increased satisfaction with the treatment and support Kaiser Permanente provides to people with dementia (*t* test, $P = .067$). Among the physicians in the postintervention sample, 49% reported using a mental status test more frequently than they had before the intervention. Prior to project implementation, 46% of physicians reported that they never obtained laboratory tests as part of a diagnostic assessment of dementia; the percentage of physicians never obtaining these tests fell to 14% after the intervention (chi-square, $P < .001$). No significant change in referrals to the Alzheimer's Association were reported: prior to the intervention, 58% of physicians sometimes or always

Table 2. System Changes Reflected in Chart Audit Quality Indicators

Quality Indicator	% Documented Before Project (n = 42)	% Documented After Project (n = 42)	Chi-Square P Value
Diagnostic guideline			
Mini-Mental Status Exam	16	93	<.001
Management guideline			
Referral to Alzheimer's Association	3	76	<.001
Referral to Safe Return Program	0	29	<.001
Functional Assessments			
Activities of daily living	13	93	<.001
Decision-making capacity	3	19	<.001
Depression	11	57	<.001
Wandering	8	74	<.001

referred their patients to the Alzheimer's Association, whereas after the intervention, 63% reported making this referral at least some of the time (chi-square, $P = .440$).

In an effort to assess the specific impact of provider workshops on guideline adherence, responses of physicians who reported attending the initial Dementia Care Workshop used to launch this project in 1997 were compared with those physicians who did not attend the workshop. One hundred fifty-two physicians, primarily in the family practice and internal medicine fields, attended the workshop; of these, 47 completed and returned the postintervention physician survey. Workshop attendees who completed the survey were more likely to report that they recalled the diagnostic guideline for dementia ($P < .015$), administered the mental status exam ($P < .005$), provided educational material to families ($P < .001$), and referred to the Alzheimer's Association ($P < .016$) compared with the 77 physicians who responded to the survey and who did not attend the workshop.

Caregiver Interviews

A comparison of structured interviews administered to caregivers before and after participation in the Dementia Care Project indicated improvements in satisfaction and in several quality measures. At baseline, 17% and 51% of caregivers reported being very satisfied and satisfied with dementia care, respectively. In contrast, at follow-up, 40% and 39% of caregivers reported being very satisfied and satisfied with dementia care, respectively ($P < .05$). Sensitivity and respect shown by Kaiser Permanente staff were rated more satisfactory after participation in the intervention, with 38%

very satisfied at baseline compared with 70% very satisfied 3 to 6 months after enrollment ($P < .001$). Caregivers also indicated that they were more likely to have been given educational material about dementia after the Dementia Care Project was initiated: 36% at baseline compared with 94% postintervention ($P < .001$). Postintervention, a higher proportion of caregivers reported receiving referrals to community services such as home health (2% preintervention vs 13% postintervention; $P < .01$); support groups (4% preintervention vs 17% postintervention; $P < .01$); and Meals on

Wheels (1% preintervention vs 12% postintervention; $P < .01$).

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DISCUSSION

The Dementia Care Project was a collaborative effort of the Alzheimer's Association and Kaiser Permanente in Los Angeles to improve the quality of care given to people with dementia and their caregivers. Practice guidelines were the framework used to establish quality goals for the system of care. They were reinforced by educational programs and materials for primary care providers, and by social workers, who provided care management, support, and other services to patients and their families.

Over the course of this project's implementation from 1997 through 2000, the medical record review and survey data both revealed greater use of mental status exams to screen patients for dementia. The finding that physicians who attended the initial educational workshop reported that they were more likely to administer this exam further supported this outcome. How much the reported increase in use of this test was due to the workshops versus differences in characteristics of physicians who do and do not attend such workshops (in terms of their receptivity to change and their interest in dementia care) cannot be determined from this study. Significantly, however, despite an increase in physician administration of the mental status exam, 20% of project participants were given their initial mental status exam by the dementia project social worker rather than a physician.

Examination of quality indicators for postdiagnostic management indicated that the specially trained social

workers were clearly an asset to quality dementia care. The chart audits revealed that these professionals were important to guideline implementation. Most frequently they were the professionals who evaluated patients for ability to perform activities of daily living and risk for wandering. Less frequently, they provided assessments of patient depression and decision-making capacity. As was similarly noted by the HMO Workgroup on Care Management of the American Association of Health Plans Foundation,¹⁸ the care managers were the professionals most likely to refer families to the Alzheimer's Association and its Safe Return Program as well as to other community organizations for supplementary support services.

The number of study subjects was low (n = 83) relative to the estimated number of people with dementia in the targeted service area (n = 5000). Limited research funding and a relatively short period of data collection (less than 2 years) were contributing factors. In addition, referrals to the study were initially low and grew over time as the primary care providers became more familiar and comfortable with the intervention. Changing physician referral patterns takes time. Following the management guideline promoted through this project, physicians were not expected to make community referrals themselves, but rather they were encouraged to refer to a social work care manager. The physicians needed to have confidence in the social workers. Over time, this confidence developed. Using preliminary outcome data from this project as evidence of value, Kaiser Permanente has since established a broad care management system for memory-impaired and frail elders in this service area. Since 2001, there have been more than 3000 inquiries or requests for the care management program to provide services; to meet this demand, the number of care managers was expanded to the current 6. The Senior Care Management Program currently averages 140 inquiries a month, and the care managers carry an active caseload of 210 patients, of whom 75% to 80% have dementia.

Kaiser Permanente is a staff model-type managed care organization. Some components of this intervention might be more feasible to implement in this type of healthcare system than in solo or small practices, or in loosely organized practice models. Another limitation to be taken into consideration when interpreting evaluation findings is that our pre-post study design did not include a comparison group (ie, a group that did not receive the intervention). Thus, although this study's findings suggest that the quality of dementia care improved for intervention participants, other concurrent events also may have been factors in study outcomes. For example, cholinesterase inhibitors became

more common during the intervention period. Both pharmaceutical company interventions and the availability of a treatment may have increased provider attention to these disorders. In addition, dementia is a progressive condition, and changes in the severity of dementia over time certainly occurred in the study sample. Without a control group, it is impossible to assign improvements in care solely to the intervention, as the worsening course of the disease itself could have prompted clinicians to conduct additional assessments and management changes over time. Future studies of refinements to this dementia care intervention applied in other healthcare settings should include a control group.

Based on the experience of developing and implementing the Dementia Care Project, we make the following recommendations to other providers of dementia services:

1. Chronic diseases such as Alzheimer's disease and the other dementias demand a multidisciplinary, biopsychosocial approach to care. The addition of social workers specially trained in dementia care and partnership with community-based organizations like the Alzheimer's Association can help ensure that the multifaceted needs of these patients and their family supporters are met. Primary care providers alone cannot provide the range of care needed by people with dementia.
2. Evidence- and consensus-based practice guidelines are useful tools for targeting and improving quality of care in a managed care setting, especially when they are reinforced through opinion leader endorsement, provider-training programs, and provider practice support tools (eg, tool kits, computer-generated prompts), and by bringing in allied medical staff as part of a disease management program.

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