An Abbreviated Model of Geriatric Assessment and Care Management: Does It Work?

In this issue of the *JABFP*, Fordyce et al[1] describe the impact of a unique program designed to improve health and increase cost-effective use of health resources for older adults enrolled in a California health maintenance organization (HMO). They evaluated the results of this intervention on a group of HMO members, comparing outcome measures with those from a control group. A systematic approach to evaluation can shed light on this type of intervention.

Before specifically reviewing the outcomes of this study, it is useful to review what exactly the intervention was. First, it appears that unselected patients were given a baseline self-administered questionnaire. This screening questionnaire was not validated, but few, if any, were in 1990. The technique was used, not to target high-risk HMO members, but to gather baseline data and to generate matching outcome measures for comparison with a control group.

Second, members who consented to participate in the intervention were given an annual comprehensive health assessment. This assessment comprised measures of functional status, such as activities and instrumental activities of daily living, measures of cognitive status and depressive symptomatology, and a hearing questionnaire. A complete physical examination included assessments of mobility, hearing, and vision, as well as several screening laboratory tests. The patients were engaged in a discussion of advance directives, and any questions they had were answered at the end of this 90-minute session.

The patients' clinical status was discussed during a team meeting that included a geriatrician, geropsychiatrist, and health educator. Problems or health issues were represented quantitatively on a grid—the Medical-Functional Profile. This grid also served as a flow sheet showing how these problems changed with time. Patients who had a high score were labeled frail. After the care-planning meeting, a series of recommendations were made by letter to the primary care provider. The nurse practitioner then served as both health care advocate and case manager for those who scored frail until their next annual health assessment.

The following seven goals of the intervention were described at the beginning of the study and are useful to refer to when determining the outcome of this intervention: (1) to establish a health and function baseline for each participant at the first visit; (2) to use this baseline to detect changes at subsequent visits; (3) to pick out those who are frail or at risk of being frail and to institute a program to prevent or ameliorate this outcome; (4) to improve health and function by appropriate referral, case management, and education; (5) to help the robust remain that way by improving self-efficacy, health, and safety behaviors; (6) to provide a useful health appraisal for the patient's primary care physician; and (7) to result in long-term cost-effective use of health care resources.

From the seven goals, three measurable outcomes emerge (improve health status and function, prevent the onset of frailty, and result in long-term cost-effective use of health resources) and hence are of most interest. These outcomes were evaluated during the 3-year study period.

Several significant differences in baseline status of the population were reported. Baseline differences can happen purely by chance or can be due to certain selection biases. In this case the control group included all those who completed the baseline questionnaire, whereas the intervention group comprised those who filled out the baseline questionnaire and subsequently consented to participate in the assessment and care management process. It is important to note that only 49.6 percent agreed to the assessment after filling out the questionnaire. Those who consented to the assessment process appeared to use hospital services

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less, were more likely to feel able to take care of themselves, and had a higher income. These differences are important, and it is useful to note that the authors did not adjust for these baseline characteristics in the statistical analyses.

Regarding the first outcome, it cannot be determined from the data presented whether health and function improved in this study. During the 3-year study the number of intervention patients moving from the frail group to the robust group improved steadily. Without comparable data from the control group, however, it is difficult to know whether this improvement is regression to the mean, an artifact of the medical-functional profile (eg, if a consultation is believed to be necessary and it occurs, presumably the frailty score would diminish), or a true improvement directly related to the intervention. No other comparative data on health status or function were presented. The higher rate of hospitalizations suggests the possibility of decreased health unless these hospitalizations were for curative treatments that would have a later impact on survival (eg, oncologic treatments for previously undiagnosed cancers—which was mentioned in the text).

For the second outcome, preventing frailty in the robust by increasing self-efficacy and health and safety behaviors, the findings are inconclusive. Clearly, as noted in Table 4, the respondents reported many changes in these health behaviors, such as completion of a durable power of attorney for health care, increased exercise, and a better understanding of medications. These changes were unlikely to have occurred without the intervention (although data to prove so by questioning the control group are again lacking). Unfortunately, the degree to which these changes contributed to maintenance of health or functional status cannot be determined without control group information for comparison. Use of validated instruments in both the intervention and control groups would have increased the confidence that these interventions were actually preventing the onset of frailty. This goal might have been partially met through changes in healthy behaviors, but many questions remain.

The final outcome of increasing long-term cost-effectiveness is not completely defined by the authors. In this case, we will assume cost-effective means that the cost of the intervention was justified by long-term savings in health care. Data on costs are limited in this study. Both outpatient and hospital use increased in relation to the comparison group during the 3 years of the study. The authors suggested that considerable cost savings would occur if the study period were lengthened to 10 years, though it is uncertain whether this long-term outcome would truly be the case. Charting the use of services for each of the 248 participants who completed all three assessments might show a trend for decreasing service use (although advancing age and increased severity of chronic illnesses might obscure such a trend). The data show that short-term use increased during the 3 years, whereas long-term use was not measured.

An outcome of the study that was not an original goal of the intervention was high participant satisfaction. Satisfaction with care is extremely important to HMOs and care provider groups, as satisfied customers tend to remain with the plan or practice. Further research into which aspects of the care model had the greatest impact on satisfaction would be an interesting and valuable contribution to the literature.

The authors of this study should be commended for taking on the important task of evaluating this new and innovative program. Several components of the study are novel, including the nurse-practitioner model of care in an assessment-consultation mode; the multidisciplinary team meeting that included a geriatrician, geropsychiatrist, and health educator who reviewed the assessment of each patient by the nurse practitioner without directly seeing the patient; the innovative quantitative flow sheet to characterize health status and medical frailty; and ongoing care management by a nurse practitioner for patients found to be frail during the assessment process. Although many questions about the impact of this program on outcomes remain because of the limitations of the evaluation study design, that this intervention occurred at all is remarkable. In most busy clinical settings, getting the resources to develop such a model is in itself a major success. Having resources to do any evaluation is increasingly difficult. The changes the authors noted in the health care behaviors are encouraging, and although this elderly population aged 3 years during the study, the participants grew less frail with time. Differences in baseline characteristics caused by selection bias and appropriate health care use generated by finding previously undetected problems could account for the greater consumption of health care resources during the 3 years of the study.

Although this study has several limitations, the findings warrant a more comprehensive, randomized, controlled, clinical trial using validated measures of health and function in both groups at regular intervals. In addition, more explicit data on costs of performing the intervention, types of recommendations made and whether they were adhered to by the primary care provider, and costs generated by the evaluation should be measured so we can compare the impact of this model with that of other geriatric interventions on outcomes of care (using both fewer and more resources and a different mix of medical personnel). Such studies will help us learn more about optimal care of this increasingly important segment of the population.

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Reference

1. Fordyce M, Bardole D, Romer L, Soghikian K, Fireman B. Senior team assessment and referral program–STAR. J Am Board Fam Pract 1997;10: 398-406.