Adhering to Inpatient Geriatric Consultation Recommendations

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Background. The purpose of this study was to evaluate the rate of and factors associated with attending physicians' adherence to geriatric consultation recommendations in an urban community hospital.

Methods. A retrospective review was performed of the charts of 47 patients referred for inpatient geriatric consultation over the previous 1½-year period. Study variables included patient and attending physician demographics, length of stay in hospital before geriatric consultation, status of patient on discharge, level of expertise of consultant, number of diagnoses per patient, and types and number of recommendations per patient made by consultant and acted upon by attending physicians.

Results. The recommendations made included medical (23.4%), medication (28.6 %), laboratory (15.8 %), radiological (2.6 %), nutritional (11.7 %), psychosocial (7.7%), skin care (1.6%), rehabilitative (6.4%), and other (2.2%). The percentage of total recommendations acted upon was 55.5%. By multivariate analysis, decreasing length of time prior to consultation was statistically associated with referring physician adherence to consultation recommendations (P=.03). Slightly more than 40% of the variability in adherence was explained by this single variable.

Conclusions. Inpatient geriatric consultations are aimed at providing a comprehensive assessment for attending physicians. Recommendations are acted upon more than 50% of the time. Physician adherence to recommendations does not appear to be dependent on patient or physician demographic variables, but to some extent, adherence is associated with less time in the hospital prior to consultation. This is a relatively new concept in hospital medicine.

Key words. Community hospital; geriatrics; assessment; consultants. (*J Fam Pract 1996; 42:259-263*)

Although geriatrics remains a relatively new discipline, several descriptive and experimental studies have shown that geriatric evaluation and management programs have the potential to significantly improve patient outcomes.[1-3] Inpatient geriatric consultation has been shown to play a critical role in the acute care of the elderly, but it is often limited by reimbursement issues[4] and scarce resources.[5]

Geriatric assessment is usually accomplished by inpatient geriatric teams consisting of a geriatrician, a registered nurse, and a social worker, and often a physical therapist, an occupational therapist, and a nutritionist.[6] This interdisciplinary team has the capacity for multidimensional diagnosis and planning with respect to medical, psychosocial, and rehabilitative care. Geriatric consultation can be provided in one of four ways: by instituting a hospital-wide policy to evaluate all patients over the age of 75; by consultation on request; by routine follow-up of all patients cared for by other geriatric services, such as home care or a geriatric clinic[7]; and by targeting geriatric consultation to the attending physicians caring for special groups of the elderly patients who are neither too sick nor too well to benefit.[8-10] Most geriatric services are integrated with internal medicine or surgery departments.[7]

Factors reported to affect adherence to general medicine consultations include identifying critical and definite recommendations, making early, direct oral recommen-

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dations, and limiting their number.[11] In one study evaluating factors affecting adherence with respect to the recommendations made in 202 of these consultations, adherence decreased as the number of recommendations increased. Adherence was shown to increase with more severely ill patients when the number of recommendations was limited to five or fewer. The overall adherence rate was 77%.[12] In a prospective randomized controlled study by Allen et al[13] evaluating the effectiveness of a geriatric consultation team, adherence to recommendations was 71.7%. In a study performed at a veterans medical center[5] that explored the extent to which a physician-administered multifaceted assessment could meet the needs of a geriatric consultation service, adherence with recommendations was poor, averaging less than 33%. Finally, several studies suggest that the nature of the relationship between the attending physician and consultant may be a more important determinant of adherence than is the soundness of the recommendations.[14]

The concept of geriatric consultation performed solely by a university-based primary care physician in a community hospital setting is a relatively new concept in health care delivery. Such an approach offers a unique combination of the added expertise in geriatric medicine while encompassing the holistic approach of primary care. As the United States population ages and as health care reform shifts priorities to primary care and teaching from the university to community hospital setting, this concept will receive a growing share of attention. This study seeks to evaluate the rate of and factors associated with attending physicians' adherence to geriatric consultation recommendations made by an academic primary care geriatrician in a community hospital.

Methods

Providence Hospital is a 383-bed, acute-care, nonprofit, private community facility located in Northeast Washington, DC, that is affiliated with the Department of Family Medicine at Georgetown University School of Medicine for the training of medical students, nurse practitioner students, and resident and fellow physicians. Minorities and those over 62 years of age constitute 92% and 42% of admissions, respectively. The percentage of Medicare-Medicaid reimbursement for the hospital is 76%. The hospital geriatrician is a salaried full-time physician who serves the dual role of Director of Geriatrics for both the Department of Family Medicine of Georgetown University and the teaching hospital. The geriatrician is not eligible for reimbursement generated by consultative services performed. The time involved in the performance of this service averages 1 to 2 hours per consultation two to three times per month, amounting to 5% of the geriatrician's professional time. All consultations are initiated by an attending physician. Approximately 200 physicians actively provide care to geriatric patients throughout the hospital.

A chart review was performed of 47 formally dictated geriatric consultations performed by the hospital geriatrician between July 1, 1992, and December 31, 1993. Demographic variables recorded included patient age, sex, and race, and physician age range (20 to 30, 30 to 40, 40 to 50, and 50 to 60 years) and sex. Other variables included specialty of referring physician (family medicine, internal medicine, general surgery, or subspecialty); length of time in the hospital before requesting the consultation; status of the patient on discharge (home, nursing home, or death in the hospital); level of expertise of consultant (as represented by the length of staff appointment until the consultation was performed); total number of diagnoses; type and total number of recommendations made (as listed in the written consultation); and the total number acted upon. Number of diagnoses listed in the problem list of the written consultation was also recorded. Types, examples, and percentages of recommendations made are listed in Table 1. All geriatric consultations were performed and their recommendations dictated within 48 hours of written request by the attending physician.

Descriptive statistics were generated for all variables. The relation between each independent variable was tested individually against the dependent variable, ie, the percentage of recommendations acted upon per patient, using linear regression analysis. Independent variables with P values of less than .20 in the univariate analysis were included in the multivariate model. Using an α=.05 and a β=.9, it was determined that 42 patients were necessary to achieve a 5% difference in percentage of recommendations acted upon.

Results

Patient characteristics were as follows: average age, 81.3 years (standard deviation [SD], 7.3 years); 29.8% were men, 70.2% women; and 17.0% white, 80.9% African-American, 2.1% Hispanic. Twenty-seven physicians, 12.5% of the active medical staff that cares for the elderly inpatient population, requested geriatric consultation. The percentage of physicians by age included 25.5%, 30 to 40 years; 51.1%, 40 to 50 years; and 23.4%, 50 to 60 years. A majority (89.4%) of the attending physicians were male. Most (40.4%) were family physicians, followed by internists (27.7%) and subspecialists (31.9%). None of the attending physicians individually referred more than 6 (12.8%) of the total number of referrals.

Table 1. Category and Types of Recommendations Made

Category	Examples	Percentage
Medical	Discontinuing a foley catheter Obtaining a bedside commode Lower extremity stockings Limiting use of physical restraints Additional specialty consultation	23.4
Medication	Over-the-counter medication (aspirin, acetaminophen, or specific vitamin supplement) Prescription medication addition, deletion, or substitution	28.6
Laboratory	Blood (B_{12}, folic acid, or iron levels, thyroid stimulating hormone, free thyroxine levels) Cerebrospinal fluid Sputum Urine	15.8
Radiological	Plain films Computerized tomographic scans Magnetic resonance imaging scans Nuclear medicine studies	2.6
Nutritional	Multivitamin Total parenteral peripheral hyperalimentation, and oral alimentation supplements	11.7
Psychosocial	Social service consultation Family interventions Psychological testing Nursing home placement	7.7
Skin care	Skin and wound care products Other interventions to promote healing of pressure, stasis, and ischemic ulcers	1.6
Rehabilitative	Physical, occupational, and speech therapy	6.4
Other	Hospice care Code status determination (determination of "resuscitate" or "do not resuscitate" order)	2.2

The average length of stay for patients before consultation was 9.9 days (SD, 10.3). On follow-up, 55.3% of the patients were discharged home, 10.6% died in the hospital, and 34% were discharged to a nursing home. The length of the consultant's staff appointment to the hospital ranged from 23 days to 549 days. The total number of diagnoses per patient was 8.3 (SD, 2.7; minimum=4, maximum=13). The total number, average number, and type of recommendations made and acted upon and the percentage acted upon per patient are listed in Table 2.

Independent variables associated with adherence to consultant recommendations ($P<.20$) included fewer total number of diagnoses ($P=.078$); more recommendations made ($P=.125$); younger age of the attending physician ($P=.038$); less hospitalization time before the consultation was made ($P<.001$); attending physician specialty of family medicine ($P=.042$) or primary care (family medicine and internal medicine) ($P=.075$); and status of the patient (deceased as opposed to discharged home or to nursing home) ($P=.089$). In the final multivariate model, the only independent variable independently associated with percentage of total recommendations acted upon was a shorter time in the hospital before the geriatric consultation ($P=.03$). The amount of variation explained by the model was 40.5%.

Discussion

The adherence rate for physician-mediated recommendations in our study was much lower than that of the previously cited study of 202 internal medicine consultations for surgical patients[12] (55.5% vs 77%, respectively) and greater than that of the veterans medical center study[5] (55.5% vs 33%, respectively). This may be due to one factor or a combination of patient or physician factors.

The average age of our patients was 81.3 years, compared with the earlier internal medicine study of 202 consultations,[12] in which 59% of the patients were less than 69 years of age. The average age of patients evaluated in the veterans study[5] was 78 years. The advanced age and high minority proportion (92%) of our patients may point to a greater severity of illness, but our study did not measure severity of illness, as did the internal medicine study.[12] The greater number of diagnoses per patient in our study as compared with the study by Allen et al[13] (8.3 vs 6.2) also may reflect a sicker population of patients since the lower adherence rate may represent a need for the attending physician to address only high priority recommendations on sicker patients. The difference in number of diagnoses per patient between the two studies may also reflect the specificity and the way the diagnoses were listed by the consulting geriatrician.

The major finding was the association between shorter length of time in the hospital before requesting a consultation and higher rate of adherence by attending physicians to recommendations. Physicians who consult early may feel that recommendations are beneficial, compared with those who consult late, who may consider nonintervention and quality of life to be more important. Alternatively, attending physicians may have more time to implement recommendations that are made early in the course of hospitalization.

The greatest frequency of recommendations acted upon was for skin care. This could be due to the presence of a hospital-wide skin care nurse stressing skin care for

Table 2. Geriatric Consultation Recommendations Made and Acted Upon, by Category

	Recommendations Made		Recommendations Acted Upon		
Category	Number	Mear Per Patient (SD)	Number	Mean Per Patient (SD)	% of Recommended
Medical	113	2.6 (1.6)	58	1.8 (1.2)	51.3
Medication	135	3.1 (1.8)	72	2 (1.1)	53.3
Laboratory	74	2.1 (1.4)	43	1.9 (1.2)	58.1
Radiology	12	1.2 (0.6)	7	1 (0)	58.3
Nutrition	55	1.5 (0.6)	32	1.3 (0.6)	58.1
Psychosocial	36	1.1 (0.5)	21	1.1 (0.2)	58.3
Skin care	7	1.8 (1)	5	2.5 (0.7)	71.4
Rehabilitation	30	1.1 (0.4)	19	1.1 (0.5)	63.3
Other	10	0.5 (0)	2	0.5 (0)	33.3
Total	472	10.2 (3.5)	262	5.8 (2.7)	55.5

the elderly. The recommendation least adhered to was for palliative care, even though the number of recommendations of this type was small. This lack of adherence may reflect time constraints by the attending physician, lack of knowledge, or anxiety about how to address this issue. Adherence to recommendations may also be a manifestation of the attending physician's perception that the recommendation is easy to perform, or of acceptance by the patient or family. Other factors may include the attending physician's, patient's, or family's perception of the cost and availability of recommended tests or services.

Compared with older physicians, younger physicians acted on recommendations significantly more often (P=.038). Younger physicians may have a generally more positive perception of the value of recommendations and geriatric consultation than older physicians. Younger physicians' adherence may also reflect a greater appreciation of the field of geriatrics, as represented by formal residency training in geriatric medicine. These findings may also reflect "ageism" among older physicians in general.[15]

Compared with subspecialists, a significantly greater number of family physicians and general interists adhered to recommendations. This difference may reflect the primary care physician's holistic approach to patient care.

Geriatric consultation provided to this cohort of patients was limited in that it was not provided in the context of targeted criteria. This study was limited because we did not evaluate objective outcomes achievable through traditional geriatric assessment and evaluation. In addition, only 12% of staff physicians utilized the consultation service, and among those, the adherence rate for recommendations was only about 50%. Further education of physicians as it relates to geriatric issues and the specialty of geriatric medicine may be warranted.

The establishment of a geriatric consultation service can improve patient care for the elderly by focusing attention on issues such as the following:

- *Rehabilitation.* Prompt attention to physical therapy and occupational therapy in a new stroke patient or other patient to prevent functional decline; evaluation of swallowing by speech personnel at bedside to rule out aspiration in patients with a new-onset stroke and patients with dementia or Parkinson's disease exhibiting swallowing difficulty or coughing episodes.
- *Nutrition.* Recommendation for protein and calorie supplementation for malnourished patients; alteration in diet consistency for dentureless and toothless, stroke, or dementia patients, and multivitamin and specific vitamin therapy as indicated (thiamine, B_{12}, folic acid, vitamin C, and zinc).
- *Drug appropriateness.* Discouraging use of high-risk drugs, such as diuretics, nonsteroidal anti-inflammatory drugs, drugs with high anti-cholinergic, sedative, or hypotensive activity; maximizing dosing regimen to once or twice daily; using maximal doses of one drug to treat a condition before adding another; starting with a lower dose in the elderly; avoiding drugs noted to cause anorexia; adjusting dosage for renally excreted drugs.
- *Cognitive dysfunction.* Recognition and treatment of depression masquerading as dementia, and differentiation of delirium from dementia.

- *Psychosocial issues.* Early and appropriate discharge planning for nursing home placement to prevent unnecessary prolonged hospitalization and rehospitalizations; early recognition of and relief of caregiver burden and social isolation.
- *Ethical issues.* Assessment of the need for and appropriate documentation for gastrostomy feeding; prompt evaluation of resuscitation status on chronically ill or terminally ill elderly.
- *Skin care.* Proper skin lubrication, and appropriate topical and antibiotic therapy for pressure ulcers.

Inpatient geriatric consultation performed by an academic primary care physician with expertise in geriatric medicine in a community hospital setting provides comprehensive assessment for private physicians. The number of recommendations acted upon does not appear to depend on demographic and other variables related to the patient or attending physician or consultant, but rather it is a function of the length of stay prior to the consultation. This unique concept will receive more attention as the population ages and increased emphasis is placed on training in geriatrics for primary care physicians. Factors likely to influence the process include adequate reimbursement for comprehensive geriatric assessment, availability of geriatric physician resources, and the shift of health care priorities by health care reform from subspecialty to primary care.

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