Organ system function, general health, social support, and age predicted discharge from a postacute geriatric unit to the community

QUESTION

For patients in a geriatric evaluation and management (GEM) unit, can an index using admission characteristics predict discharge to the community?

DESIGN

A cohort study provided data for development and validation of the index.

SETTING

A 20-bed GEM unit in a skilled nursing facility in the United States.

PATIENTS

All 452 patients admitted to the GEM unit. 298 patients (mean age 75 y, 65% women, 76% white) formed the derivation cohort, and 154 (mean age 73 y, 64% women, 62% white) formed the validation cohort. The GEM unit was designed for individuals with medical or functional problems that temporarily prevented discharge from the hospital to home. Patients with social barriers to discharge who could walk 30 meters independently and who required minimal assistance with activities of daily living and those who were judged unlikely to return to the community after treatment on the unit were excluded.

DESCRIPTION OF PREDICTION GUIDE

Data were collected on age, sex, race, Mini-Mental State Examination scores, living circumstances before admission, functional status, perceived social support, and length of hospital stay. Scores for the Cumulative Illness Rating Scale (CIRS) (13 items related to organ system function) and the Nursing Severity Index (presence of 34 nursing diagnoses) were also compiled.

MAIN OUTCOME MEASURES

Community discharge (to home, adult care facility, or group home) or noncommunity discharge (to skilled nursing facility, acute care hospital, or death).

MAIN RESULTS

Multivariate analysis showed that 7 factors predicted noncommunity discharge: lower gastrointestinal impairment (relative risk [RR] 40.4, 95% CI 6.3 to 258), cardiac impairment (RR 11, CI 2.8 to 44), vascular impairment (RR 6.5, CI 1.7 to 25), musculoskeletal-integument impairment (RR 4.5, CI 1.4 to 14), poor general health (RR 3.7, CI 1.1 to 12), lack of social support (RR 2.6, CI 1.3 to 5.2), and age (RR 1.07 per year, CI 1.0 to 1.1). The index predicted discharge for 81% of the derivation cohort (81% of those who went to the community and 81% who did not) and 88% of the validation cohort (84% of those who went to the community and 91% who did not).

CONCLUSION

Admission characteristics related to organ system dysfunction (lower gastrointestinal, cardiac, and musculoskeletal-integument), general health, perceived social support, and age predicted discharge destination from a geriatric evaluation and management unit in a postacute hospital care skilled nursing facility.

COMMENTARY

GEM units are expensive clinical interventions. Although some patients receive important benefit from this care, some may not benefit at all, being either too well to need it or having irreversible deficits. Thus, evaluating the patient selection process (targeting) is crucial for effective management.

This study determined whether patient characteristics on admission were predictive of the outcome of being discharged to the community. The objective was to identify risk factors that could help to refine the selection process. Another outcome, hospital readmission within 3 months after discharge, may be even more important for evaluating cost-effectiveness of GEM units but was not assessed in this study. Several studies using this outcome have been reported (1), but they did not specifically address the selection process. This area is still under investigation.

Naughton and colleagues were not sure of the degree to which the predictive model could be applied clinically. This uncertainty may be because variables in CIRS are impairments of organ system categories rather than functional measures. For example, the variable "lower gastrointestinal" had to be translated to a functional variable, fecal incontinence, and only then could the process problem be debated, namely, whether to limit admissions of incontinent patients or to improve the effectiveness of care for this condition. Assessment of change in functional measures from admission to discharge might further facilitate clinical application by identifying reversible conditions. The authors plan further studies to compare functional measures with the CIRS.

This is a study of a crucial process for GEM units—how best to identify those patients who would most likely benefit from a very expensive intervention. Further studies are needed to refine admission criteria and to identify changes needed in the care process.

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Reference
1. **Stuck AE, Siu Al, Wieland GD, Adams J, Rubenstein LZ.** Comprehensive geriatric assessment: a meta-analysis of controlled trials. Lancet. 1993; 342:1032-6.