

The Hospital Admission Risk Profile (HARP)

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WHY: Functional decline in older adults is often linked to acute hospital admissions and can have devastating consequences such as increased morbidity and mortality and may result in institutionalization.^{1, 2, 3} Multiple risk factors such as older age, normal age related changes, acute illness, and the effects of being hospitalized contribute to this decline.⁴ The identification of patients at risk to develop new functional disabilities in Activities of Daily Living (ADL) at admission to the hospital may facilitate referral for targeted interventions to prevent decline and institutionalization.⁵

BEST TOOL: In the acute care setting, the Hospital Admission Risk Profile (HARP)⁵ is a practical, easy to use instrument that can identify patients at risk for functional decline during and after an acute hospital admission. The HARP instrument stratifies patients' risk for new ADL disability into low, medium, or high-risk categories based on scores obtained including age, preadmission Instrumental Activities of Daily Living (IADL) score, and an abbreviated Folstein Mini-Mental Status Exam⁶ (MMSE) score. The seven IADLs included in the HARP instrument include: managing finances, taking medications, use of the telephone, shopping, transportation, housekeeping, and food preparation. The abbreviated MMSE (range 0-21) omits the language items from the standard 30-item MMSE.

TARGET POPULATION: The HARP screening tool was designed to stratify older medical inpatients for their risk of developing new disabilities in ADLs during acute medical illnesses and hospitalization, who might benefit from geriatric interventions to reduce or prevent functional decline. The instrument was not tested on patients hospitalized for surgical procedures, those living in nursing homes before admission and those who were in critical care units.

VALIDITY AND RELIABILITY: The HARP was developed and validated in a multi-center prospective cohort study conducted in four university and two private non-federal acute care hospitals (development cohort n = 448 and validation cohort n = 379). Logistic regression analysis revealed three patient characteristics that were independently predictive of functional decline: older age, cognitive impairment and lower preadmission IADL scores. A scoring system was then developed for each of the predictor variables, and patients were assigned to low, medium and high-risk categories. The rates of ADL decline at discharge for the low, medium and high-risk groups were 17%, 28% and 56% in the development cohort, and 19%, 31%, and 55% in the validation cohort. In both cohorts, patients who scored as high risk were three times more likely to have a loss in ADL function at discharge than those in the low risk group, and patients in the low risk group were significantly more likely to recover ADL function and avoid transfer to a nursing home.⁵

STRENGTHS AND LIMITATIONS: A major strength of the HARP instrument is its ability to stratify patients into risk categories, identifying those most at risk for new disabilities. Interventions such as comprehensive discharge planning, special inpatient care, and inpatient and post-hospital rehabilitation can then be individualized by degree of risk. The HARP is also a simple and brief screening tool that incorporates variables that are easily measured and readily available. The HARP may not be generalizable to those patients who are admitted from nursing homes, have been in a critical care unit or who have a surgical condition.

FOLLOW-UP: The presence of risk of developing new disabilities in ADLs during hospitalization warrants ongoing assessment and interventions to prevent functional decline. Interdisciplinary approaches for early intervention must be implemented.

MORE ON THE TOPIC:

Best practice information on care of older adults: www.ConsultGeriRN.org.

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1. Scoring range 0-5		
A. Age		
AGE CATEGORY	RISK SCORE	
<75	0	SCORE =
75-84	1	
>85	2	
B. Cognitive function (abbreviated MMSE)*		
MMSE SCORE	RISK SCORE	
15-21	0	SCORE =
0-14	1	
C. IADL function prior to admission**		
INDEPENDENT IADLs	RISK SCORE	
6-7	0	SCORE =
0-5	2	
2. Risk categories		
TOTAL SCORE	RISK OF DECLINE IN ADL FUNCTION	
4 or 5	High risk	TOTAL =
2 or 3	Intermediate risk	
0 or 1	Low risk	

*Abbreviated MMSE includes only the following 21 components of the original 30 item test: orientation (10 items: year, season, month, date, day, city, county, state, hospital, floor); registration (3 unrelated items, such as hat, ball, tree); attention (5 items, such as spelling WORLD backwards); and recall (same 3 items as in registration). Each correct answer is scored one point.

**A person is judged independent in an activity if he/she is able to perform the activity without assistance. A person is scored dependent if he/she either does not perform an activity, requires the assistance of another person or is unable to perform an activity. IADL activities include telephoning, shopping, cooking, doing housework, taking medications, using transportation and managing finances.

Sager, M.A., Rudberg, M.A., Jalaluddin, M., Franke, T., Inouye, S.K., Landefeld, C.S., Siebens, H., & Winograd, C.H. (1996). Hospital admission risk profile (HARP): Identifying older patients at risk for functional decline following acute medical illness and hospitalization. *JAGS*, 44(3), 251-257. Appendix pp. 1-2.