

## Stroke rehabilitation and systematic care in Paul Coverdell National Acute Stroke Registry

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**Background:** Early assessment for and receipt of rehabilitation can improve stroke patients' functional and social well-being. Yet, rehabilitation among stroke patients is underutilized. This study examines whether hospital characteristics related to systematic stroke care are associated with assessment and receipt of rehabilitation.

**Methods:** We used data collected from the Paul Coverdell National Acute Stroke Registry from four states (GA, IL, MA, NC) in 2004-2005. We defined outcomes as whether rehabilitation is assessed in hospital and whether rehabilitation is received or referred among the eligible patients. Hospital characteristics included presence of a written emergency department (ED) protocol for stroke care, a written plan for transferring stroke patients from emergency medical services (EMS), a stroke team, a stroke unit, full-time services for physical therapy and speech therapy, and JCAHO certification. Using logistic regression, associations between hospital characteristics and outcome measure were assessed, controlling for patient demographics, NIH stroke scale score, stroke type and history of stroke and coronary artery disease. Subgroup analysis among ischemic stroke patients was also conducted.

**Results:** Among 4,387 stroke patients, 77.6 % had rehabilitation assessments. Among 4,021 eligible patients, 63.5% received or were referred to rehabilitation services. Having an ED protocol, a written plan for EMS transfer and a stroke unit were all associated with higher probability of receiving assessment of rehabilitation (OR=2.0, 1.3, and 1.6, respectively; all  $p<0.05$ ). Full-time services for physical therapy and speech therapy were also associated with rehabilitation assessment (OR=6.3 and 2.9, respectively; both  $p<0.001$ ). Only speech therapy and JCAHO certification were associated with receipt or referral to rehabilitation (OR=1.4 and 2.3,  $p<0.05$ ). Similar findings were observed among ischemic stroke patients.

**Conclusions:** The findings suggest that stroke patients treated in hospitals providing systematic acute stroke care are more likely to receive rehabilitation assessment and services. Having specific services such as physical therapy and speech therapy may improve receipt of rehabilitation.