



## Physical and Occupational Therapy in the Acute and Community Settings Following Stroke: Are Patients Getting the Care They Need?

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### Introduction/Background:

- Each year, approximately 795,000 Americans have a stroke.
- 80-90 percent of stroke survivors have problems with movement after stroke and are vulnerable to inactivity, falls, & readmissions.
- Early contact with a physical and/or occupational therapist following stroke and more intense therapy (e.g., greater number of visits/time) improves outcomes following stroke.
- The majority of stroke survivors are discharged home following an acute care admission for stroke.
- Understanding the care pathway from the acute to community setting and continuity of therapy across settings is important for:
  - determining whether patients are getting appropriate and timely care;
  - care delivery models that promote care coordination, team-based care, and bundled/episode-based payments.

**Objectives:** 1) to describe use of physical and occupational therapists in the acute and community settings for patients discharged home following stroke; 2) to identify contextual (hospital & county) and sociodemographic factors associated with therapist use, controlling for clinical characteristics.

**Methods:** Analysis of Medicare claims data (20% sample) linked to American Hospital Association and Area Health Resource File data (2010-2013).

- **Outcome variables:** 1) *inpatient therapist use* (yes/no); 2) *post-acute therapist use* (in home; outpatient; no care); 3) *continuity of care* (therapist care in hospital and home; therapist care in hospital and outpatient setting; no continuity of care); and 4) *early therapist use* if the visit occurred below the median days to first visit (early home care, early outpatient care, later care).
- **Explanatory variables:** clinical, demographic, hospital-level (structural and organizational) & county-level (e.g., provider supply) variables.
- Multivariate logistic regression and multinomial logistic regression analyses to identify predictors of therapist use.

### Conclusions and Policy Implications

- 1) Physical and occupational therapists play a key role in the recovery of stroke survivors.
- 2) We found evidence of underuse of therapists following stroke, particularly after discharge home.
- 3) Patients seen at hospitals with higher RN staffing levels or who lived in counties with higher primary care provider supply were more likely to receive therapy in the inpatient and outpatient setting, to have continuity of care across settings, and to receive timely care.
- 4) We found evidence of socioeconomic and racial disparities in therapist use, particularly in regard to outpatient care and the receipt of timely care.
- 5) Strengthening continuity and consistency of therapist care across the acute and community settings may be useful in preventing downstream healthcare costs.
- 6) Payment policy that minimizes out-of-pocket costs for therapy may improve access.

## Findings:

- 69 percent of the sample (N=42,955) received inpatient therapy, but only 32.5 percent received care in the 30 days after discharge home.
- Less than 30 percent of patients had continuity of care across the inpatient and community setting.
- Patients seen at hospitals with higher RN staffing levels and living in counties with greater primary care provider (PCP) supply were more likely to receive therapist care in the inpatient and outpatient settings, to have continuity of care across the inpatient and outpatient setting, and to receive early therapist care in the home and outpatient setting.
- Physician specialist (i.e., neurologist, physical medicine and rehabilitation physician) and therapist supply were associated with therapist use in some models, but PCP supply was a more consistent predictor of therapist use across models.
- There was strong evidence of racial and socioeconomic disparities in the use of outpatient therapy and in the use of early care in the community (early care in home and early care in the outpatient setting).
- Hospital accreditation and not-for-profit status were positively associated with therapist use in some of the models.

## Conclusions:

- Therapist use following stroke is underutilized in the community and for specific racial and socioeconomic subgroups.
- Inpatient nurse staffing levels and primary care provider supply were the most consistent predictors of therapist use, continuity of care, and early therapist use.
- Further research is needed to better understand the underlying reasons behind these associations.

## Policy Implications:

- Better efforts and policies are needed to promote access to and continuity of therapist care across the acute and post-acute settings following stroke, particularly for patients discharged home.
- One area to target is educating nurses, physicians, and other providers in the acute and post-acute settings about the roles of therapists and the importance of early and continued care after discharge home.
- Seamless communication and information exchange among providers in the acute and post-acute settings is also important for effective care coordination and continuity of rehabilitation care.
- Our results underscore the importance of team-based models of care including PCPs, physician specialists, nurses, and therapists. As hospitals move toward Accountable Care Organizations and bundled payments that include both acute and post-acute care, strengthening continuity of therapist care across settings may be particularly useful in preventing hospital readmission and other downstream health care costs (e.g., costs secondary to a fall).
- Payment policy that minimizes out-of-pocket costs for outpatient therapy may be one approach to improve access.

## End notes:

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