

Association of 30-day Continuity of Care with Outcomes in Multiple Sclerosis

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BACKGROUND

Fragmentation of care is known to impact outcomes.¹ Given that most hospitals do not share clinical data electronically, emergency department (ED) evaluation in different hospitals rarely involves clinical information exchange or shared patient management.

Patients with multiple sclerosis (MS) require multi-disciplinary care, therefore lack of familiarity can pose hurdles to efficient care.

OBJECTIVES

To investigate the association of continuity of care with outcomes following 30-day readmission in MS.

METHODS

Data Source & Cohort Definition: Using the National Readmission Database 2013-2014, adult patients discharged following an index admission for MS (ICD-9-CM code 340) were tracked to identify those incurring a 30-day readmission utilizing ED services. **Continuity of care** was defined as patients presenting to the ED of original (index) hospital from which they were first discharged 30 days prior. Likewise, patients admitted to other hospitals were labelled to have received “**fragmented**” care.

Outcome/Endpoints: Discharge disposition, length of hospital stay (LOS) and charges [inflation adjusted to represent October 2017 dollar value].

Statistical Analysis: Multivariable regression techniques (generalized estimating equations) investigated the association of continuity of care with primary outcome measures.

RESULTS

- Overall, 1581 eligible patients with MS were readmitted within 30-day following index discharge.
- Of these, 1399 (88.5%) patients were readmitted utilizing the ED services.
- 1057 (75.6%) were readmitted to the same (index) hospital while 342 (24.4%) were readmitted to other centers, thereby incurring fragmented care
- Patients readmitted to same hospitals had relatively:
 - **Lower proportion of discharge to rehabilitation facility** (24.5% vs 25.7%; p=0.648)
 - **Shorter mean LOS** (5.2 vs 6.1 days; p=0.001)
 - **Lower mean hospital charges** (\$40,798 vs \$51,380; p=0.008)
- In a multivariable analysis controlled for confounders (patient demographics, hospital characteristics, medical comorbidities as stratified by Charlson et al index, and MS-specific symptoms), patients receiving continuity of care (readmitted to same/index hospital) compared to those with fragmented care (readmitted to non-indexed admissions) were significantly associated with:
 - **Shorter marginal LOS** (-1.0 day; p=0.028)
 - **Marginal hospital charges** (18.1% lower; p=0.001).

DISCUSSION

Using an all-payer, national readmission cohort, the study investigates the association of continuity of care with outcomes following readmission in patients with MS.

Approximately, one-fourth of all MS patients readmitted within 30-days will experience post-discharge fragmentation and are at increased risk of incurring an unfavorable discharge disposition (to rehabilitation), longer LOS and increased charges.

The study underscores the potential significance of continuity of care in reducing hospital stay and economic burden (charges) in MS patients that will witness readmission within 30-days following index discharge.

Interventions targeted at understanding causal mechanisms and factors associated with poorer outcomes in fragmented care (non-index admissions) are recommended to improve outcomes in these patients.

Study limitations include those relating to the use of administrative database. This includes possibility of coding inaccuracies, lack of pertinent MS-related disease parameters such as severity scoring, radiological parameters and functional outcomes.

REFERENCES

1. Stange KC. The Problem of Fragmentation and the Need for Integrative Solutions. Ann Fam Med. 2009;7(2):100–103.