Hospitalizations Among Patients with Multiple Sclerosis

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Background
- Multiple sclerosis (MS) is a chronic, inflammatory, heterogeneous autoimmune disease of the central nervous system (CNS) that affects nearly 400,000 individuals in the United States, with an estimated 200 new cases being diagnosed each week.
- Patients with MS often experience relapses, which can range from mild symptoms (mildness) to severe symptoms (stereotypic attacks).
- The cost of relapses resulting in hospitalization can result in significant insurer and patient burden, however, the costs of hospital events are not well-documented.

Objective
The purpose of this analysis was to describe the frequency and cost of MS-related hospitalizations in the United States.

Methods
Data Source
- US patients with commercial coverage were selected from the NES LifeLink health plans database, an anonymous patient-centric national managed care database that represents more than 60 million enrollees from more than 85 health plans.

Analysis Design
- Descriptive, retrospective pharmacy and medical claims analysis

Inclusion Criteria
- The analysis used a cross-sectional cohort — patients with an MS diagnosis during 2010 (expected to contain a mixture of new and existing patients)
- No eligibility requirement was applied
- At least 18 years of age or older and 6 months of age at index date
- The cohort was selected to assess the relapse events and associated costs of a population containing a mixture of new and existing MS patients

Hospitalization Identification
- The focus of the analysis was on the average cost per hospitalization per person.
- The diagnosis on the last facsimile record was assumed to be the discharge diagnosis for inpatient hospitalizations.
- Only hospitalizations that began and ended in the observation window were analyzed.
- Hospitalizations meeting the following criteria were identified:
  - An MS-related diagnosis (multiple sclerosis [C90.0-C90.43], or "other demyelinating CNS disease" [C90.9-C90.94])
  - A diagnosis based on literature combined with a positive review of the frequency of diagnoses that was:
    - for a person with MS symptom-related condition (Table 1): or
    - had a code for "care involving other specified rehabilitation procedure, multiple training or therapy" (ICD-9-CM V57.99) that appeared frequently.

Hospitalization Costs
- The "ALLOWED" amount was used for all cost calculations. The allowed amount is typically the paid amount, plus any provider liability (eg, co-pay, deductibles, and co-insurance).
- Costs included all recorded types (eg, facility, health professionals, surgical and anesthetic) associated with each unique hospitalization.
- Costs were adjusted to December 2010 using the medical component of the Consumer Price Index. US Bureau of Labor Statistics.
- Inpatient costs were categorized by type of service:
  - Management Services (MS) are provider charges related to the direct evaluation or management of a patient
  - Surgical Services (SS) are surgical charges
  - Facility Services (FS) are the room and board charges of an institutional provider
  - Professional Services (PS) are charges incident to the direct care of a patient (eg, x-ray, lab)