Multiple sclerosis (MS) is an acquired, inflammatory and immune mediated disorder of the central nervous system characterized by inflammation, demyelination and degeneration of axonal neurons that affects more than 2 million people worldwide, and estimates range from 350,000 to 440,000 in the United States. 1,2 MS usually affects young adults between the ages of 20 to 40 years, with a female to male risk ratio between 1.5 and 3.6. 2,3 Several studies have reported that persons with MS have difficulty maintaining employment due to the condition. 3,4 Avonex, interferon-β1a (IFN-β1a) is a Disease Modifying Treatment (DMT) administered intramuscularly (IM) for MS. IFN-β1a IM aims to reduce the frequency and severity of relapses, delay disability, and postpone the onset of the progressive phase of the disease. While efficacy data of the IFN-β1a IM exists, limited objective data are available on the impact on medical costs and health service utilization among employed individuals with MS in the periods before and after the initiation of therapy.

INTRODUCTION:
To assess changes, if any, in medical costs and health service utilization among employees when treated with IFN-β1a (Avonex) for multiple sclerosis in a real-world setting.

METHODS:
A retrospective analysis was performed using patient claims data (1/1/2001 to 6/30/2008) from the Human Capital Management Services (HCMS) Research Reference Database consisting of approximately 670,000 employees representative of the US Employed Civilian Labor Force (2004). Employer insurance claims records were analyzed for medical costs and health service utilization.

Anonymity of person-level data was maintained according to the Health Insurance Portability and Accountability Act guidelines.

Healthcare was provided through managed care plans contracted by the employer for respective employees.

International Classification of Diseases-9 (ICD-9) codes were used to identify subjects with MS (ICD-9 code of 340.XX). Patients with available prescription claims for IFN-β1a IM (Avonex) were examined in the six months before and after their initial prescription (index date). A histogram of 5-year age groupings was developed according to the Health Insurance Portability and Accountability Act guidelines.

CONCLUSIONS:
Overall the study results suggest that after initiating treatment with Avonex for Multiple Sclerosis, employees had:
- Significant decreases in mean and median total direct medical costs in the post-treatment period.
- Either a decrease or no change in health service utilization and costs by location.

REFERENCES:
Kurtzke JF. Friedenreich asked questions about MS and the National MS Society. Available at: http://www.nationalms.org/aboutmultiple-sclerosis/PDFs/about-MSSociety.aspx#back.
ABSTRACT

OBJECTIVES: Because limited data are available on changes in direct costs (medical and prescription) and likelihood of health service utilization among employees treated with IFN β1a-IM for MS, we aimed to assess the changes in direct costs and likelihood of health service utilization for persons with multiple sclerosis (MS) treated with Interferon (IFN) β1a-IM.

METHODS: A healthcare claims database of US employees from 2001-2008 was used to identify patients with MS ≥ IFN β1a-IM prescriptions [Rx] or an IFN β1a-IM Rx + MS diagnosis [ICD-9=340.X]). Employees with eligibility 6 months before and after their initial IFN β1a-IM Rx and no other disease-modifying therapies were included in the analysis. Non-parametric tests and t-tests were used to compare the mean and median direct medical costs and the likelihood of health service utilization before and after initiation of IFN β1a-IM.

RESULTS: Data from 68 employees with MS that took IFN β1a-IM (42 employees with health service utilization data) were eligible for analysis. All direct medical cost changes were significant (P<0.01). Mean medical costs decreased by $2872 (54%) from $5339 to $2467 and median costs decreased by $3691 (80%) from $4596 to $905. Significant (P<0.05) decreases in the likelihood of health service utilization were noted for the following: 11.9% for emergency department from 11.9% to 0%, 23.8% for outpatient hospital from 64.3% to 40.5%, and 16.7% for “other” (including home-care, ambulance, mobile unit, and unknown) from 31.0% to 14.3%. Inpatient hospital care decreased non-significantly (P=0.096) by 11.9% from 16.7% to 4.8%, while lab and office claims stayed the same (7.1% and 92.9%, respectively).

CONCLUSIONS: Direct medical costs decreased for IFN β1a-IM patients after therapy initiation, with reduced use of emergency department, inpatient and outpatient hospital care, and other services. These differences suggest the costs of Interferon β1a-IM are partially offset by medical care saving.