Multiple Sclerosis Disease Modifying Drugs: Expenditure, Utilization and New Start Trends among 15 Million Commercially Insured Members

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No external funding provided for this research

BACKGROUND

- Within Prime Therapeutics' commercially insured 15 million membership, multiple sclerosis (MS) disease modifying drugs (DMDs) allowed amount, including plan and member amount paid through medical and pharmacy benefits, per member per month (PMPM) from 3Q2019 to 2Q2020 was $6.80. MS spend is the fourth highest category behind autoimmune, cancer and HIV.[1]
- Since October 2018, four novel MS DMDs received FDA approval for the treatment of relapsing MS — siponimod, cladribine, diroximel fumarate and monomethyl fumarate. Generics for glatiramer and dimethyl fumarate products were also approved during this time.
- The MS treatment guidelines from the American Academy of Neurology (AAN), released in April 2018, recommend first-line treatment with alemtuzumab, fingolimod or natalizumab for individuals with highly active disease.[2]
- Although the Institute for Clinical and Economic Review released a report on MS DMD cost-effectiveness in 2017, it is likely of diminished relevance to payers today given the major shifts that have occurred in MS therapeutics and treatment guidelines since the report's release.[3] There is a paucity of data to describe the changes in MS DMD spending and utilization, and initial MS DMD treatment selection, occurring after professional guideline recommendations and new therapy approvals. Payers need to understand real-world MS DMD utilization pattern changes in order to design optimal formularies and develop care management programs.

OBJECTIVE

- To report MS DMD trends in spend, utilization and new start rates of agents used for highly active MS, and to describe trends in spend for branded and generic glatiramer products.

METHODS

- All analyses were conducted using integrated medical and pharmacy claims data from 15 million commercially insured members.

Assessment 1: Utilization, Spend and Trend Analysis

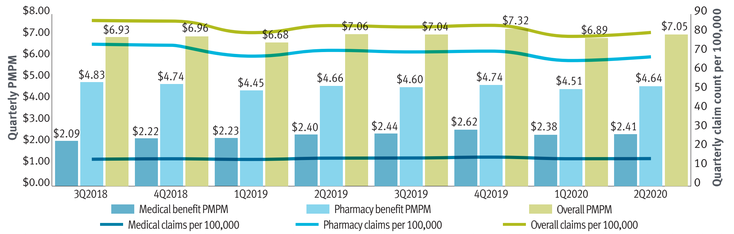
- Queried pharmacy and medical claims from July 2018 through June 2020 using Generic Product Identifier (GPI) and Healthcare Common Procedure Coding Systems (HCPCS) codes to identify MS DMD claims for commercially insured members for: alemtuzumab, cladribine tablets, dimethyl fumarate, diroximel fumarate, fingolimod, glatiramer acetate, interferon beta-1a, interferon beta-1b, mitoxantrone, natalizumab, ocrelizumab, peginterferon, siponimod and teriflunomide.
- Selected MS DMDs were grouped together into DMD groups as follows: fumarates (dimethyl fumarate, diroximel fumarate), sphingosine 1-phosphate receptor (S1PR) modulators (fingolimod, siponimod), interferons (interferon beta-1a, interferon beta-1b, peginterferon).
- Alemtuzumab, mitoxantrone and natalizumab have additional indications beyond MS. We examined the medical drug claims for presence of an MS International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) code (G35) in any one of five fields on the medical claim to assign MS DMD utilization to MS treatment.
- Total paid amount was defined as the sum of insurer (allowed) and member payments without adjustment for rebates or coupons.
- Medical claims with a total paid amount of ‹ $300 and medical claims with a combination of inappropriately low number of billed services (5th percentile for data set) and a total paid amount of ‹ $1,000 were excluded.
- Pharmacy claims with a total paid amount of $0 were excluded from the analysis.
- Utilization per 100,000 members was calculated for each MS DMD or DMD group and reported quarterly. Pharmacy claim count was adjusted for days supply (e.g., days supply of up to 34 days counts as one claim, a days supply of 35 to 60 days as two claims). Utilization per 100,000 members was calculated as the sum of medical claim count and adjusted pharmacy claim count for each quarter.
- Quarterly per member per month (PMPM) cost was defined as total paid amount in a quarter divided by average monthly membership count in that quarter. PMPM was calculated for each MS DMD or DMD group and reported quarterly.
- NDC-level analysis was performed to assess trends in generic glatiramer product utilization. Glatiramer claims were divided into three groups: Copaxone claims, Glatopa claims and other generic glatiramer claims. PMPM was calculated for each glatiramer product and reported quarterly.

Assessment 2: MS DMD New Start Anaylsis

- Identified commercially insured members with MS DMD medical or pharmacy claims between July 2018 and June 2020 using GPI and HCPCS codes for: dimethyl fumarate, fingolimod, glatiramer acetate, interferon beta-1a, interferon beta-1b, natalizumab, ocrelizumab, peginterferon or teriflunomide.
- A member's earliest MS DMD claim between July 2018 and June 2020 was defined as their index date and index drug in each quarter.
- Members were classified as new starts if they were continuously enrolled for 12 months prior to their index date and did not have any paid MS DMD claims during this continuous enrollment period.
- The number of new starts per quarter was divided by a calculated count of commercially insured continuously enrolled members for one year to calculate the quarterly new start rate per 100,000 members.
- New starts to alemtuzumab, cladribine tablets, diroximel fumarate, mitoxantrone and siponimod were excluded due to low utilization during the study period.
- New starts to fingolimod or natalizumab were considered highly active new starts. The proportion of highly active new starts to all other new starts was assessed quarterly.

FIGURE 1

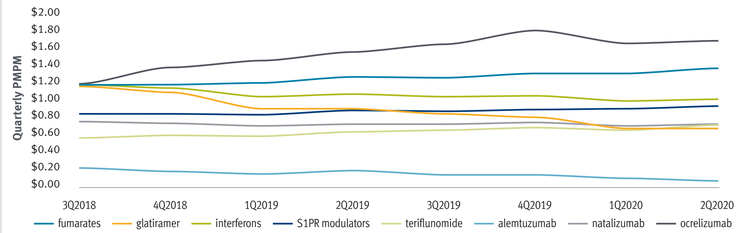
Multiple Sclerosis DMD Quarterly PMPM and Claims per 100,000 Members among 15 Million Commercially Insured Members



DMD = disease modifying drugs; PMPM = per member per month. Vertical bars represent quarterly PMPM; horizontal lines represent quarterly claim count per 100,000 members. MS medical, pharmacy and overall PMPM by quarter calculated as the sum of the total paid amount for all MS medical and/or pharmacy claims for the quarter divided by the sum of the average membership for each month of the quarter. Pharmacy claim count was adjusted for days supply (e.g., days supply of up to 34 days counts as one claim, a days supply of 35 to 60 days as two claims). Overall claim count was calculated as the sum of medical claim count and adjusted pharmacy claim count for each quarter. MS medical and/or pharmacy claim counts for the quarter were divided by the sum of the average membership for each month of the quarter and multiplied by 100,000 to determine the number of claims per 100,000 members. Total paid amount was defined as the sum of insurer (allowed) and member payments without adjustment for rebates or coupons.

FIGURE 2

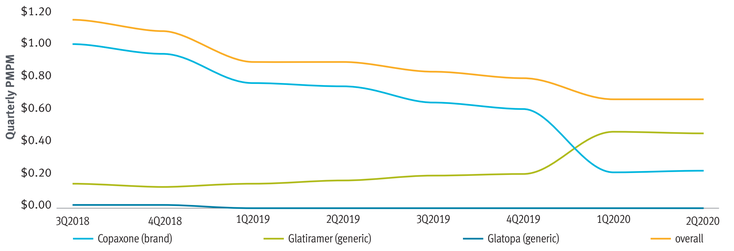
Multiple Sclerosis DMD Integrated Medical and Pharmacy Quarterly PMPM among 15 Million Commercially Insured Members 3Q2018 through 2Q2020



DMD = disease modifying drugs; PMPM = per member per month, S1PR = sphingosine 1-phosphate receptor. MS DMD PMPM by quarter by drug calculated as the sum of the total paid amount for all MS claims for a drug for the quarter divided by the sum of the average membership for each month of the quarter. Selected DMDs were grouped together into DMD groups: fumarates (dimethyl fumarate, diroximel fumarate), sphingosine 1-phosphate receptor (S1PR) modulators (fingolimod, siponimod), interferons (interferon beta-1a, interferon beta-1b, peginterferon). Mitoxantrone excluded due to minimal predominant off-label utilization. Cladribine tablets had low PMPM throughout study period, and PMPM is excluded from the figure. Total paid amount was defined as the sum of insurer (allowed) and member payments without adjustment for rebates or coupons.

FIGURE 3

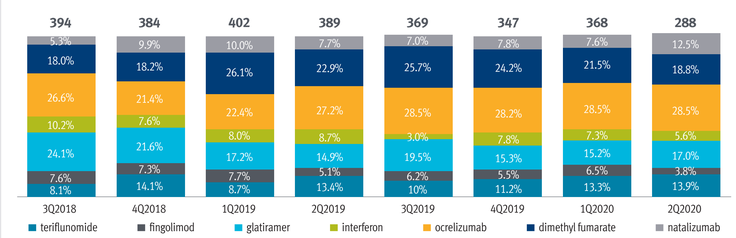
Multiple Sclerosis Glatiramer Acetate Products Quarterly PMPM among 15 Million Commercially Insured Members 3Q2018 through 2Q2020



PMPM = per member per month. Glatiramer PMPM by quarter by drug product identified using national drug code (NDC) calculated as the sum of the total paid amount for all claims for a glatiramer drug product for the quarter divided by the sum of the average membership for each month of the quarter. Total paid amount was defined as the sum of insurer (allowed) and member payments without adjustment for rebates or coupons.

FIGURE 4

Multiple Sclerosis DMD New Starts by Quarter among 15 Million Commercially Insured Members 3Q2018 through 2Q2020



MS DMD new start member identified by assessing MS DMD pharmacy or medical claims from July 1, 2018 through June 30, 2020 and no paid MS DMD pharmacy or medical claim in the 12 months preceding initial paid MS DMD claim. Members grouped according to index MS DMD by quarter; number above each column represents total members with a new MS DMD start in the quarter. New start look-back of 12 months with continuous enrollment for the index drug or any other MS DMD pharmacy or medical claim. Interferon beta-1a, interferon beta-1b, and peginterferon beta-1a new starts were combined as interferon new starts. Excluded from analysis: alemtuzumab, cladribine tablets, diroximel fumarate, mitoxantrone, and siponimod (due to low utilization).

RESULTS

Assessment 1: Utilization, Spend and Trend Analysis

- Between July 1, 2018 and June 30, 2020, there were a total of 245,353 MS DMD pharmacy claims and 47,762 MS DMD medical claims among approximately 15 million commercially insured members.
- A total of 1,384 (2.9%) medical claims were removed due to having an inappropriately low total paid amount and/or an inappropriately low billed number of services. Twenty-six (0.01%) pharmacy claims were removed due to having a total paid amount of $0.
- More than 99% of paid claims for natalizumab and 96% of paid claims for alemtuzumab contained an MS diagnosis on the claim, and fewer than 2% of paid claims for mitoxantrone contained an MS diagnosis. All alemtuzumab and natalizumab claims were included in the final spend and trend analysis; all mitoxantrone claims were excluded.
- Overall PMPM for MS DMDs increased from $6.93 in 3Q2018 to $7.05 in 2Q2020; PMPM on the medical benefit increased from $2.09 in 3Q2018 to $2.41 in 2Q2020, while PMPM on the pharmacy benefit decreased from $4.83 to $4.64 during the same time (Figure 1).
- Number of claims per quarter per 100,000 members declined from 85 claims in 3Q2018 to 79 in 2Q2020. Medical benefit drug utilization increased slightly from 12 claims per quarter per 100,000 members in 3Q2018 to 13 in 2Q2020, while pharmacy benefit drug utilization decreased from 73 to 66 during the same time (Figure 1).
- PMPM for individual drug products remained relatively consistent throughout the study period with two exceptions: ocrelizumab PMPM increased 43% from $1.17 in 3Q2018 to $1.67 in 2Q2020, while glatiramer PMPM decreased from $1.14 to $0.65 during the same time (Figure 2 and Figure 3).

Assessment 2: MS DMD New Start Anaylsis

- A total of 2,941 new starts were included in the analysis.
- The AAN therapies recommended for highly active MS, natalizumab and fingolimod increased from 12.9% of all new starts in 3Q2018 to 16.3% in 2Q2020; natalizumab was more frequently utilized as a first-line treatment option through the analysis period, while fingolimod was utilized less frequently as a first-line treatment (Figure 4).
- The new start rate for any MS DMD, included in the analysis, was 18.33 new starts per 100,000 members per year; the highest new start rates were observed for ocrelizumab (4.55 per 100,000 members per year) and dimethyl fumarate (4.26 per 100,000 members per year).

LIMITATIONS

- Administrative pharmacy and medical claims have the potential to be miscoded and include assumptions of members' actual drug use and diagnoses.
- The data used in this study was limited to a commercial population, and results are not generalizable to Medicare or Medicaid population.
- The ICD-10-CM has only one code for multiple sclerosis and does not distinguish between primary progressive and relapsing forms of MS.
- There is potential for misclassification bias among members who may have received a drug via compassionate use program, paid cash or another drug assistance program.

CONCLUSIONS

- MS DMD drugs remain a significant drug expense category, with ocrelizumab having the greatest PMPM growth for a single drug as a proportion of overall MS DMD spend at 16.9% with a 2Q2020 PMPM of $1.67. The greatest PMPM reduction occurred for glatiramer with a 2Q2020 PMPM of $0.65. Overall, MS DMD PMPM spend remained relatively steady throughout the two-year period, due in large part to decreasing glatiramer cost on the pharmacy benefit off-setting increasing ocrelizumab cost on the medical benefit.
- The proportion of the overall MS DMD PMPM spend attributable to medical benefit increased from 30.2% in 3Q2018 to 34.1% in 2Q2020. During this time, the pharmacy MS DMD PMPM spend decreased 3.9%.
- Since the 2018 AAN guidelines recommended highly active relapsing MS be treated first line with specific agents, there has been a minimal increase in the proportion of MS DMD new starts with highly active agents, at an additional 1 per 33 new starts in 2Q2020 compared to 3Q2018.
- In 2019, the highest rate of new starts to MS DMDs were ocrelizumab, dimethyl fumarate and glatiramer acetate products. Directing treatment-naive patients to generic and lower cost therapies represents a cost-saving opportunity for payers.
- For a complete understanding of MS DMD drug trends, it is essential for insurers to integrate their pharmacy and medical claims data.

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Academy of Managed Care Pharmacy (AMCP) Annual Meeting, April 13, 2021, National Virtual Conference

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