Multiple Sclerosis Specialty Drug Utilizers Cost of Care Trends 2008 to 2010: An Integrated Medical and Pharmacy Claims Analysis

PRIME THERAPEUTICS®

C. I. Starner[1,2], N. Shah[3], G. C. Alexander[4], B. Gunderson[1], S. Ritter[5], P. P. Gleason[1,2] [1]Prime Therapeutics LLC, Eagan, MN, USA; [2]University of Minnesota, College of Pharmacy, Minneapolis, MN, USA; [3]Mayo Clinic, Rochester, MN, USA; [4]Johns Hopkins University, Baltimore, MD, USA; [5]Blue Cross and Blue Shield of Minnesota, Eagan, MN, USA

No external funding provided for this research

Background

- Specialty drugs provide treatment options for various rare genetic conditions and have increasingly become the standard of care for more common chronic diseases, such as multiple sclerosis (MS).
- A 2009 study found the average per person per year cost of treating MS among individuals utilizing an MS specialty drug was $37,592, of which 56.8% was pharmacy cost.[1]
- A complete accounting of MS cost of care requires an assessment of drug cost from both the pharmacy and medical benefits, as well as all other medical and pharmacy benefit costs. For the treatment of MS, most specialty drug costs are covered by pharmacy benefit. However, natalizumab and mitoxantrone are administered as intravenous infusions in settings such as physician offices, hospital outpatient facilities, and free-standing infusion centers.
- In 2011, among a 9 million member commercially insured cohort, MS drugs accounted for 3.6% of all pharmacy benefit costs with an average per prescription cost of $3,135, an increase of 15.2% from 2010.[2,3]
- As specialty drugs costs continue to rise faster than that of traditional therapies, payers and policy makers must better understand the costs and clinical benefit of these drugs.[2]

Objective & Purpose

To describe the cost of care trends among commercially insured individuals with an MS diagnosis and to decompose these costs in order to understand MS cost drivers and the impact managed care service offerings may have on these costs.

4085-C © Prime Therapeutics LLC 10/12
1305 Corporate Center Drive, Eagan, MN 55121

Patrick Gleason, 800.858.0723, ext. 5190
pgleason@primetherapeutics.com

AMCP, October 4, 2012, Cincinnati, OH, USA

Methods

- The study sample was derived from integrated pharmacy and medical claims data from 1.2 million commercially insured members covered by a single health plan.
- Inclusion criteria required members to be less than 65 years of age and continuously enrolled for a full year during 2008, 2009, or 2010, and to have had: (a) two or more medical claims in any field with an International Classification of Disease — Ninth Revision (ICD-9) diagnosis code of 340.xx (MS), or (b) one ICD-9 diagnosis coded medical claim for MS and one MS specialty drug claim from the pharmacy or medical benefit; or (c) two or more MS specialty drug claims from the pharmacy or medical benefit.
- MS specialty drugs included the following: dalfampridine, fingolimod, glatiramer, interferon beta-1a and 1b, natalizumab, and mitoxantrone (presence of only mitoxantrone use did not qualify a member of having a diagnosis of MS due to its use for other indications, such as prostate cancer.)
- The annual average total cost of care was calculated and reported as a per person per year (PPPY) for all individuals with an MS diagnosis and for the subset utilizing an MS specialty drug.
- Total cost of care was also separated into four categories: medical MS specialty drug, all other medical benefit, pharmacy MS specialty drug, and all other pharmacy benefit.
- Pharmacy and medical costs are the total paid amounts, including both the member's and health insurer's payments.
- Manufacturer inflationary drug price trends were estimated by changes in wholesale acquisition costs (WAC) unit costs of the drugs. For example, for dalfampridine, the WAC reported is based on a 10 mg tablet. The WAC changes are reported based on the most recent WAC price compared to the first price reported in 2008 or first available price after 2008 for dalfampridine and fingolimod.
- The compound annual growth rate (CAGR) was used to describe all trends from 2008 through 2010.

$$\mathrm{CAGR}(t_o, t_n) = \left(\frac{V(t_n)}{V(t_o)}\right)^{\frac{1}{t_n - t_o}} - 1$$

$V(t_o)$: start value, $V(t_n)$: finish value, $t_o - t_n$: number of year intervals

Results

- The commercially insured analyzable population remained relatively constant from 2008 to 2010 with 1,038,638 members in 2008, 999,048 in 2009 and 979,735 in 2010. (Table 1)
- MS diagnosis prevalence was 1,742 (0.17%) members in 2008 and did not change through 2010.
- MS specialty drug utilization among members with an MS diagnosis increased 1 percentage point over the 3 years from with 1,234 (70.8%) of 1,742 members to 1,209 (71.8%) of 1,685 members.
- The most frequently used MS specialty drug was glatiramer, with between 28.3% and 30.1% of members utilizing it in 2008 and 2010, respectively.

All members with an MS diagnosis: 2008 to 2010 cost trends (Figure 1)

- The PPPY total cost of care increased from $29,751 to $36,901 for a CAGR of 11.4%. From 2008 to 2010, the total cost of care for an individual with MS increased 24.1%.
- Combined MS medical and pharmacy specialty drug costs accounted for 48.1% of the total PPPY cost of care in 2008 ($14,311 of $29,751) and increased to 54.7% ($20,200 of $36,901) in 2010; CAGR 18.0%.
  - MS pharmacy specialty drug costs were $13,745 PPPY (96.0%) of the combined MS specialty drug costs increasing to $19,130 PPPY (94.7%); CAGR 18.0%.
- All other medical benefit costs and all other pharmacy benefit costs CAGRs were 3.9% and 4.3%, respectively.

MS diagnosis members utilizing an MS specialty drug: 2008 to 2010 cost trends (Figure 2)

- For the 7 of 10 members with an MS diagnosis utilizing an MS specialty drug, PPPY total cost of care increased from $32,883 to $41,760 for a CAGR of 12.7%.
- Combined MS medical and pharmacy specialty drug costs accounted for 61.4% PPPY of the total cost of care ($20,201 of $32,883) and increased to 67.4% ($28,152 of $41,760); CAGR 18.1%.
  - MS pharmacy specialty drug costs were $19,403 PPPY (96.0%) of the combined MS specialty drug costs increasing to $26,661 PPPY (94.7%); CAGR 18.0%.

MS specialty drug price inflation (Table 3)

- WAC prices for each of the MS specialty drugs increased at a CAGR of more than 10%, and up to 22.6% since 2008.
- Since 2008, the WAC for beta-interferons has nearly doubled (81.1% to 92.8%), glatiramer has more than doubled (111.7%), and natalizumab has increased two-thirds (65.8%).

Table 1. Prevalence of MS diagnosis, member characteristics, and drug utilization in 2008, 2009 and 2010

	2008	2009	2010
Eligible members	1,038,638	999,048	979,735
Members with MS diagnosis	1,742 (0.17%)	1,712 (0.17%)	1,685 (0.17%)
Characteristics			
Females	1,319 (75.7%)	1,267 (74.0%)	1,237 (74.3%)
Age groups			
0–30 years	93 (5.3%)	95 (5.5%)	115 (6.8%)
31–50 years	899 (51.6%)	904 (52.8%)	900 (53.4%)
51–64 years	750 (43.1%)	713 (41.6%)	670 (39.8%)
MS specialty drug use (not mutually exclusive)			
glatiramer (Copaxone)	493 (28.3%)	499 (29.1%)	508 (30.1%)
interferon beta (Rebif)	324 (18.6%)	325 (19.0%)	299 (17.7%)
interferon beta (Avonex)	246 (14.1%)	223 (13.0%)	195 (11.6%)
interferon beta (Betaseron)	175 (10.0%)	174 (10.2%)	156 (9.3%)
natalizumab (Tysabri)	48 (2.8%)	53 (3.1%)	61 (3.6%)
dalfampridine (Ampyra)	0 (0.0%)	0 (0.0%)	113 (6.7%)
fingolimod (Gilenya)	0 (0.0%)	0 (0.0%)	5 (0.3%)
mitoxantrone	6 (0.3%)	4 (0.2%)	5 (0.3%)
any MS specialty drug	1,234 (70.8%)	1,219 (71.2%)	1,209 (71.8%)

Table 2. MS total cost of care CAGR: 2008 to 2010

	All members with MS (not treated and treated specialty MS drugs)	Only members treated with specialty MS drugs
Medical MS specialty drugs	37.5%	36.6%
Medical, all other	3.9%	2.8%
Pharmacy MS specialty drugs	18.0%	17.2%
Pharmacy, all other	4.3%	7.3%
Total	**11.4%**	**12.7%**

CAGR = Compound annual growth rate

Table 3. WAC changes for brand MS specialty drugs

	WAC CAGR 2008 to 2012	WAC increase 2008 to 2012
glatiramer (Copaxone)	22.6%	111.7%
interferon beta (Avonex)	17.8%	83.4%
interferon beta (Rebif)	16.3%	81.1%
interferon beta (Betaseron)	17.5%	92.8%
natalizumab (Tysabri)	13.4%	65.8%
	WAC CAGR 2010 to 2012	**WAC increase 2010 to 2012**
dalfampridine (Ampyra)	12.2%	23.6%
fingolimod (Gilenya)	10.6%	19.7%

WAC = Wholesale acquisition costs CAGR = Compound annual growth rate

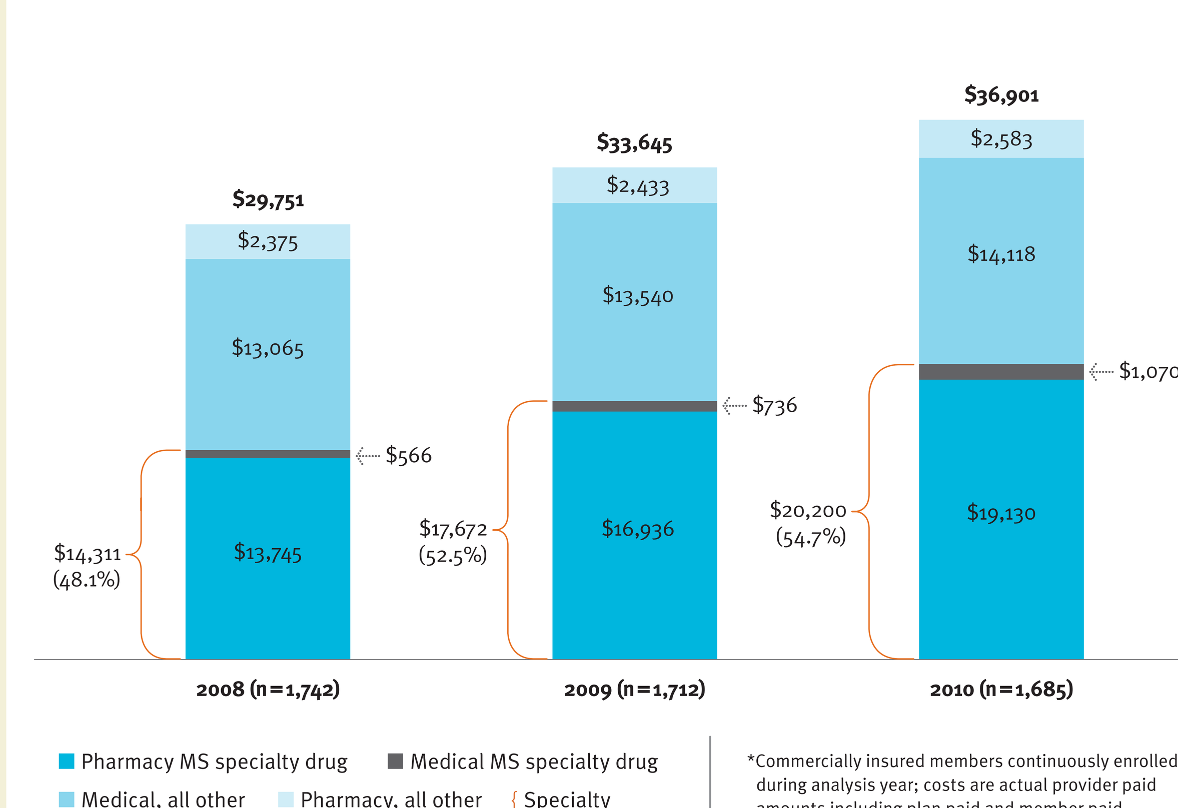

Figure 1. Annual average cost of care for MS members treated and not treated with MS specialty drugs*

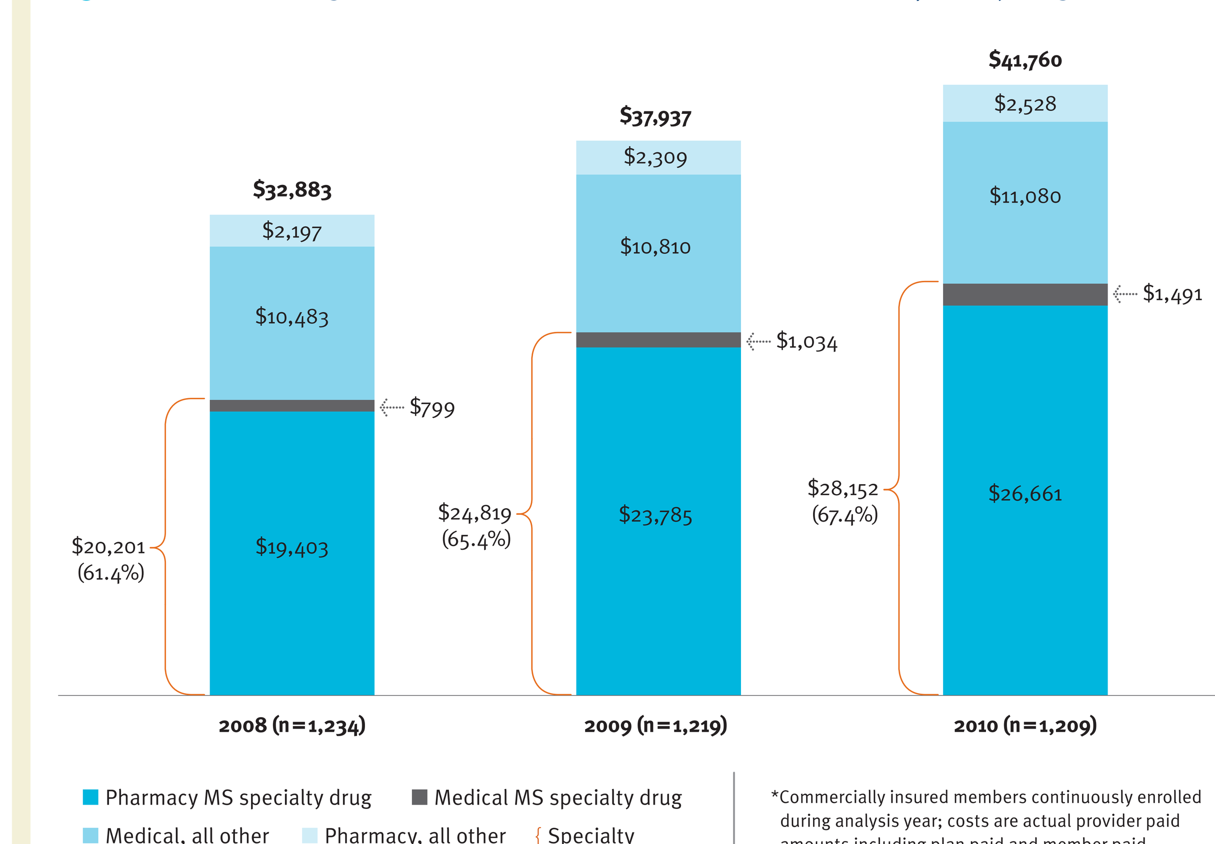

Figure 2. Annual average cost of care for MS members treated with MS specialty drugs*

Limitations

- Administrative pharmacy and medical claims have the potential for miscoding and include assumptions of member actual medication use and diagnosis.
- The data are from one commercial population in the Central U.S. and therefore is not generalizable to other regions or Medicare.
- New MS treatments were approved subsequent to the time periods in the current analyses and updated reporting may have an impact on costs and trends.

Conclusions

- In 2010, the annual total cost of care for a commercially insured individual with MS was $36,901 of which medical and pharmacy specialty drug costs comprised more than half the cost. For a 10,000 life self-insured group this would translate to 17 individuals with MS and expenditures of $627,317 ($5.22 per member per month [PMPM]), of which MS specialty drugs were $343,400 ($2.86 PMPM).
- In 2010, members utilizing an MS specialty drug annual total cost of care averaged $41,760 of which MS specialty drugs accounted for 67.4% ($28,152) with 94.7% of these costs coming from the pharmacy benefit.
- MS specialty drug costs were the fastest growing category within the total cost of care, rising at 6.4 times the rate of all other medical costs (CAGR 17.2% vs 2.8%).
- For the past five years, MS specialty pharmaceutical manufacturers have had annual double-digit price increases. As utilization was flat to slightly increased, inflationary price increases are by far the major driver of increased MS costs. Anticipating these price increases will continue for the foreseeable future, it is forecasted that MS specialty drug treatment cost will exceed $50,000 per person per year in 2016.
- The anticipated medical cost savings from MS specialty drugs cannot offset the cost of the MS specialty drugs; as pharmacy costs now exceed all medical costs for this condition.
- As pharmacy benefit managers and health plans strive to improve the quality of care for individuals with MS through improved adherence, the expected increases in cost of care can be mitigated through rebate contractual relationships that provide some measure of price inflation protection.

References

1. Schafer JA, Gunderson BW, Gleason PP. Price increases and new drugs drive increased expenditures for multiple sclerosis. *J Manag Care Pharm*. 2010;16(9):713-717.
2. 2011 Drug Trend Insights report. Prime Therapeutics LLC. Available at: http://www.primetherapeutics.com/PDF/2011PrimeDrugTrendInsights.pdf
3. 2011 Prime Therapeutics LLC. Internal Data.