

# MULTIPLE SCLEROSIS

Background, new developments, key strategies

## INTRODUCTION

- **400,000** patients in the US<sup>1</sup>
- Most people diagnosed between age **20 – 50**<sup>2</sup>
- **2-3x more women** than men get MS<sup>2</sup>
- Risk of developing MS: **1 in 1,000** (1/10<sup>th</sup> of 1%)<sup>3</sup>
- Total lifetime cost of MS per patient: **\$4.1 million**<sup>4</sup>

Multiple sclerosis (MS) is a chronic disease of the central nervous system. It is considered an **autoimmune disorder**, which means that the body's own immune system attacks otherwise healthy cells.<sup>1</sup>

MS is thought to be triggered in genetically susceptible individuals by a combination of one or more environmental

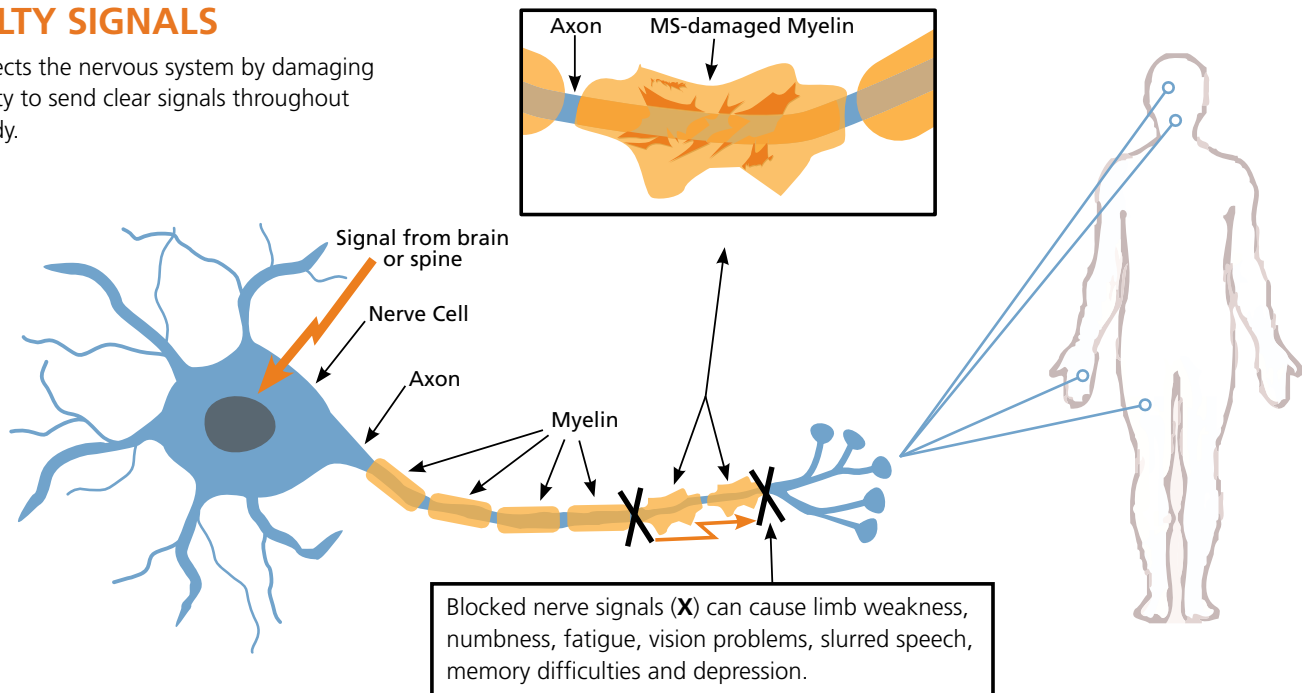
factors.<sup>5</sup> These environmental triggers interact with some 60 different genes that may have a role in MS.<sup>6</sup>

MS causes the immune system to attack **myelin**, a sheath-like membrane that insulates and protects the nerves. Damage to this insulating tissue stops or disrupts nerve cells from sending their signals, which causes the neurological symptoms typical of MS.<sup>7</sup>

The term **"multiple sclerosis"** refers to the damage to the myelin in the form of multiple lesions which result in thick scar tissue, or sclerosis.<sup>3</sup>

## FAULTY SIGNALS

MS affects the nervous system by damaging its ability to send clear signals throughout the body.



Source: National Institute of Neurological Disorders and Stroke (NINDS). Multiple Sclerosis Information Page.

## WHO GETS MS?

Diagnosing MS is difficult for several reasons. No single laboratory test can prove or rule out the presence of MS and in its early stages, symptoms may be completely invisible. Often people can have symptoms that are erratic and very difficult to interpret.<sup>6</sup> Still, there are some patterns:

- Females are 2-3 times more likely to be diagnosed<sup>1</sup>
- MS mainly affects young adults – first diagnosis typically between ages 20-50<sup>1</sup>
- MS is not contagious or inherited (although certain genetic traits may make one more susceptible)<sup>1</sup>

### Common types of MS

Name	Characteristic symptoms	
<b>Relapsing-Remitting (RRMS)</b>	<ul style="list-style-type: none"> <li>• Short duration (days to months)</li> <li>• May remain symptom-free for months or years</li> </ul>	<p><b>RRMS: 85%</b></p> <p><b>PPMS: 10%</b></p> <p><b>PRMS: 5%</b></p>
<b>Secondary-Progressive (SPMS)</b> Most of the 85% diagnosed with RRMS will eventually transition to SPMS	<ul style="list-style-type: none"> <li>• Slow, steady progression – with or without relapses</li> <li>• Relapses do not fully remit</li> </ul>	
<b>Primary-Progressive (PPMS)</b>	<ul style="list-style-type: none"> <li>• Steady worsening from the start</li> <li>• Do not have periodic relapses and remissions</li> </ul>	
<b>Progressive-Relapsing (PRMS)</b>	<ul style="list-style-type: none"> <li>• Steadily worsen from the onset</li> <li>• Flare-ups – with or without remissions – are also present</li> </ul>	

Source: Multiple Sclerosis Association of America. About MS. 2014.

## TREATMENT

There is **no cure** for multiple sclerosis at this time.<sup>1</sup>

MS treatments are called Disease Modifying Therapies, or DMTs.<sup>5</sup> While DMT medications do not cure MS, they do help reduce the severity and frequency of flare-ups and may delay disease progression, delay disability, and increase longevity.<sup>3</sup> This chart shows currently approved DMTs:

FDA-approved DMTs		<b>Each therapy has its pros and cons.</b> <ul style="list-style-type: none"> <li>• <b>All of the approved DMTs</b> demonstrate varying abilities to reduce relapse rates, slow disease progression, and slow the progression of disability.</li> <li>• <b>Each drug also carries the risk of side effects</b> ranging from relatively minor flu-like symptoms and depression to difficulties at the site of injection, but ranging upward to the risk of cardiac disease, leukemia and severe liver damage.</li> <li>• <b>Different results</b> can be caused by the type of drug, dosage and how it is administered. Stronger drugs may offer greater effectiveness but may also pose greater health risks. Additionally, the effectiveness and side effects of each drug may vary from one patient to another, so <b>treatment needs to be individualized.</b></li> <li>• <b>Since the oral medications are so new</b>, there is limited long-term safety data. Therefore, their exact place in therapy is still not known for sure.</li> </ul>
<b>Self-Injected</b> 	Avonex® Betaseron® Copaxone® Extavia® Rebif®	
<b>Intravenous (IV) infusion</b> 	Novantrone® Tysabri®	
<b>Oral</b> 	Aubagio® Gilenya® Tecfidera™	

Source: Multiple Sclerosis Association of America: About MS, 2014.

In summary, MS is a potentially debilitating disease with high treatment costs. But early treatment, paired with robust management strategies to ensure efficient medication use, can help employers successfully control the costs of MS and retain the services of valuable employees.

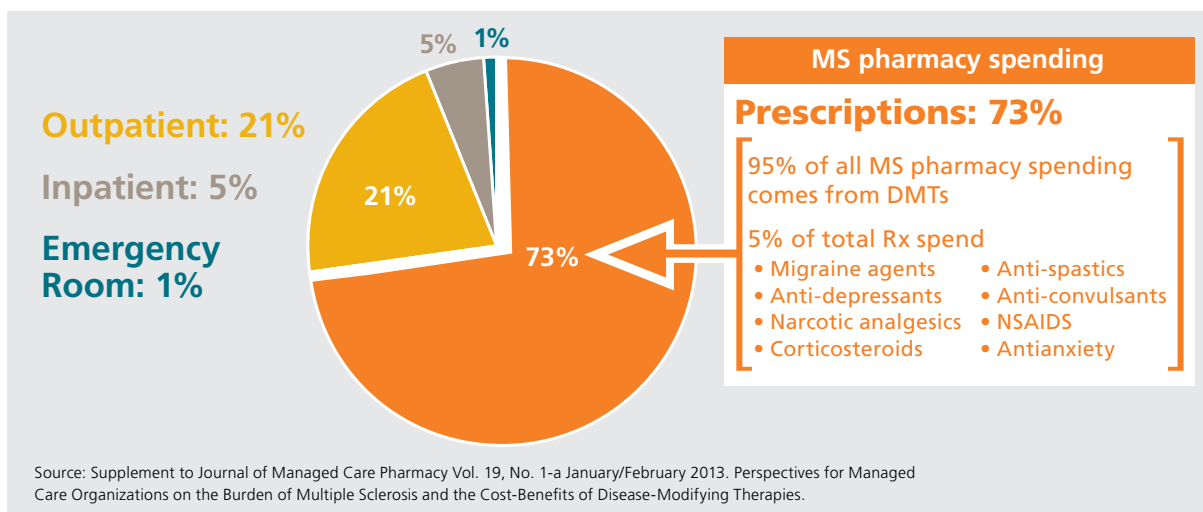
## THE HIGH COST OF MS

MS is a chronic disease that is typically first diagnosed during a patient’s most productive working years (20-50).<sup>1</sup> As a result, employers face huge potential direct and indirect costs.<sup>11</sup>

Per-member medical costs for MS patients are much higher than for those who do not have MS — up to **\$30,000 per year**, including medical care and prescription drugs.<sup>4</sup> When we isolate just at the top 1 percent of MS patients by severity, the per-patient cost surges to **over \$66,000 per year**.<sup>12</sup>

**By far the greatest proportion of spending for MS comes from the DMT patients must take to keep MS from progressing in severity.**

### Total spending for MS



## ADHERENCE CAN BE A PROBLEM

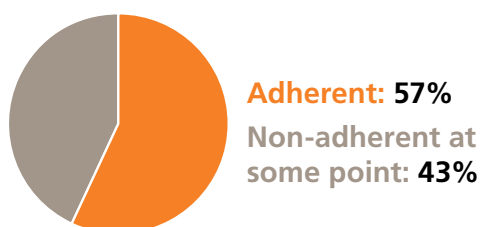
Maintaining DMT treatment consistently is important – even when the patient is not experiencing any symptoms.<sup>9</sup> However, MS treatment adherence is a concern. Looking across multiple DMT regimens, almost half of MS patients stop taking their medication at some point.<sup>10</sup>

Nonadherence is both dangerous and expensive. Even without symptoms the disease can still be progressing and causing damage to the nervous system.<sup>11</sup> Nonadherence can also lead to relapses costing up to \$13,000 per episode, which contributes to the high overall medical claims for MS patients.

When compared with medical costs of other chronic conditions such as diabetes, chronic obstructive pulmonary disease, (COPD) and coronary artery disease, MS ranked among the most costly, second only to congestive heart failure.<sup>11</sup>

**The good news is that MS patients who begin DMTs early and maintain them over time show lower absenteeism and lower overall medical costs.**<sup>10</sup>

### Average MS adherence rate



## PRIMARY COST DRIVERS

### Price inflation

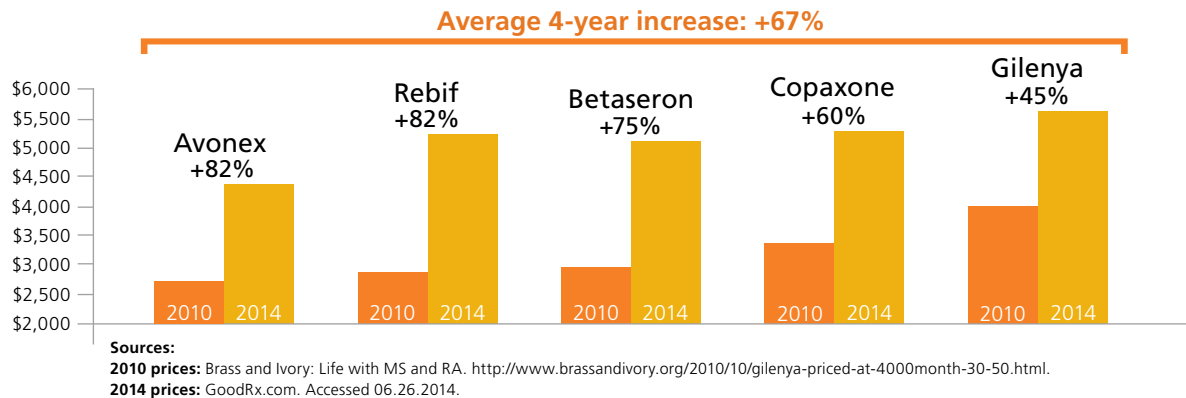
After being relatively stagnant, with few new or improved treatments for some years, MS is showing signs of coming to life as a therapeutic category. MS is one of three highly-utilized classes with spending growth greater than 10 percent per year, primarily driven by recent innovations.<sup>13</sup> [See also, “New MS drugs.”]

**Overall, MS drug spending is driven more by higher drug costs than by increased utilization.** Not only are new products priced higher, but prices for existing DMTs have risen rapidly.

In 2010 the price for the first-ever oral DMT, Gilenya, was set at **\$4,000 per month**.<sup>14</sup> That price was up to **50 percent** above the established DMTs at that time.

**Note in the chart below, that in every case, the less expensive the drug was in 2010, the higher the percentage increase by 2014.** More expensive drugs made do with smaller increases, yet the overall effect is to pull the price for this basket of drugs up **by a collective 67 percent**:

### Price increases for 5 popular DMTs



## OTHER COST DRIVERS

### Add-on drug therapies

Ampyra (dalfampridine) is used together with a DMT to improve walking distance in MS patients.<sup>15</sup> **Adding Ampyra pushes the average cost of MS therapy to \$78,000 per year** for about ten percent of OptumRx MS patients.<sup>16</sup>

### No generics

At the present time there are no generic DMTs. Hopes for a generic version of Copaxone (currently the top-selling MS drug) by the spring of 2014 have dimmed as the parties continue to struggle in court.<sup>17</sup> Beyond Copaxone, generics will not supply additional price relief in this category **until at least 2016**.<sup>18</sup>

### A new blockbuster?

The most recent oral DMT, Tecfidera (dimethyl fumarate) has showed good safety and effectiveness, but with less severe side effects than existing DMTs.<sup>13</sup> Analysts predict that Tecfidera will become the most commonly used MS drug over the next five or so years, with sales as high as **\$6 billion by 2020**.<sup>19</sup>

## WHAT'S NEXT IN MS TREATMENT?

The DMTs that have been in use since the 1990s, as well as the more recent oral DMTs, are designed to prevent nerve damage and slow the progress of the disease; but they are not a cure. Once MS destroys the myelin on a nerve, it cannot be regenerated.<sup>5</sup>

Recently, there is new progress toward therapies that may work to reverse the damage caused by MS. By far the most exciting part of this new work is taking place in the field of **human neural stem cells**.

Studies in both animals and humans are underway and the results have been very encouraging.<sup>20, 21</sup> Mice severely disabled by a condition similar to MS were able to walk and run less than two weeks following treatment with human neural stem cells. In addition, even six months after their injection their functionality was still strong, even though the injected cells had been eliminated long before.<sup>20, 21</sup>

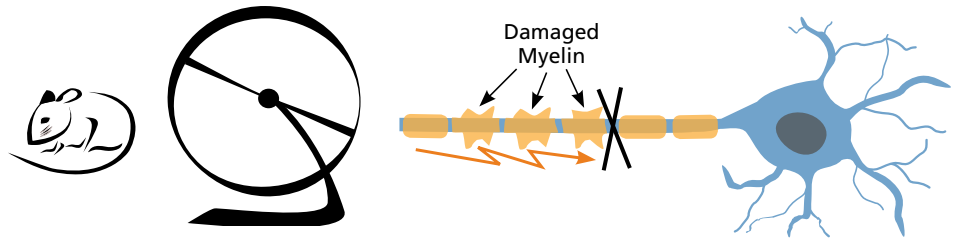
These are very early results, of course. Many promising research leads have faltered in the transition from animal to human studies. That is why it is especially notable that the FDA has approved phase 1 trials in human subjects to study the use of neural stem cells in the treatment of MS.<sup>22</sup> In addition, a larger phase 2 study is underway that involves MS patients from the UK, Italy, the US and Canada.<sup>22</sup>

As research momentum builds there is growing optimism. Some researchers believe that these neural stem cell projects could lead to successful new treatments for MS in as soon as three to five years.<sup>22</sup>

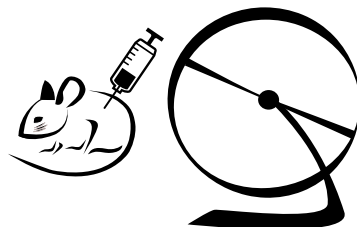
## Reversing MS

This illustration shows how human neural stem cells were used to repair damaged myelin in mice.

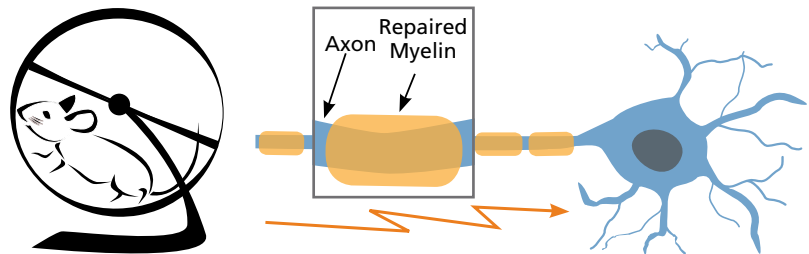
MS impairs nerve function by damaging myelin, an insulating layer that surrounds nerves. Mice with MS can't move well.



Human neural stem cells injected into MS mice stimulate the mouse's own cells to repair the damage.



Nerve cell function is restored. MS mice can walk and run.



Source: Scripps Research Institute. Stem cell therapy shows promise for MS in mouse model. May 15, 2014. Available at: <http://www.sciencedaily.com/releases/2014/05/140515123301.htm>

## A COMPREHENSIVE APPROACH TO MANAGING MS

### Synchronized Specialty Pharmacy Optimizes Results

The combined size and expertise of Optum and UnitedHealthcare extends across all benefits. We leverage multiple strategies that promote better health outcomes and lower total health care costs while helping members make the best use of their benefits.

#### Total Cost Control

- Drug cost and choice
- Right benefit (medical or pharmacy)
- Appropriate use

#### Total Care Coordination

- One care team
- Physician coordination
- Adherence support

### What we do

Our **total approach** to MS combines a robust drug management strategy together with clinical management and adherence programs:

- **Prescription Drug List (PDL):** Uses cost-sharing tiers to encourage use of preferred treatments.
  - **Exclusions:** Keep the focus on drugs that offer true clinical and economic value. We currently exclude Extavia®.
- **Utilization Management Tools**
  - **Supply limits:** Help limit wasted medication.
  - **Prior authorization:** To ensure prescriptions are for a covered condition.
  - **Step therapy:** To promote the use of clinically similar, more cost-effective medications.
- **Price protection:** Negotiated arrangements with manufacturers to lock-in drug prices.

We automatically apply these strategies for our Fully Insured clients who combine UnitedHealthcare medical policies with pharmacy benefits administered by OptumRx.

**We encourage, but do not require, our UnitedHealthcare and OptumRx carve-out ASO customers to adjust their plans in this way. Consult with your representative for details.**

## TOTAL MS CARE COORDINATION

We use the power of **synchronization** to surround MS patients with the power of ONE. ONE streamlined member experience comes from ONE common platform supporting ONE care team to deliver lower cost and better health.



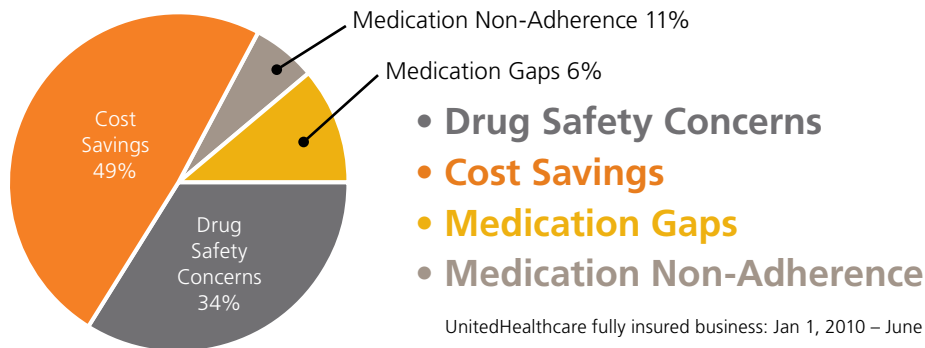
ONE Experience	ONE System	ONE Team
<ul style="list-style-type: none"> <li>Streamlined touch points for a better experience</li> <li>1 to 1 consultations</li> <li>Reducing total costs by promoting lower cost medications, mail service, and care management programs</li> <li>Making the most of interactions by engaging on health and savings opportunities</li> </ul>	<ul style="list-style-type: none"> <li>360° total health view of each member (Medical, Rx, lab, wellness)</li> <li>Real-time data vs. monthly feeds</li> <li>64% of health and savings opportunities driven by pharmacy data</li> </ul>	<ul style="list-style-type: none"> <li>Up to 30 days faster engagement on health and savings opportunities</li> <li>Pharmacists, nurses, case managers and member services share information and expertise.</li> <li>Depression screening and referrals</li> </ul>

### Driving Value with Pharmacist Medication Consults

MS patients who are signed up for our intensive Clinical Management Program (CMP) have a direct, one-to-one relationship with one of our specialty pharmacists or nurses. They can call directly to discuss issues around their medication regimen, including access to their medications and managing their side-effects.

All of our members have access to pharmacists who are embedded on the care team. They can conduct medication consults with consumers identified as “at risk.” Pharmacists use integrated tools to view each patient’s medical history and automatically calculate their personal pharmacy risk score along multiple factors. They can also receive automated alerts for potential cost savings by switching to lower-cost alternatives.

#### Medication-related consult opportunities by category



### ONE System for earlier interventions & better support

The ONE system captures hundreds of data points and scores them against over 500 care standards and rules. For example, a medication adherence score triggers an automatic alert to a nurse if a member is not refilling their medication. A unique pharmacy risk score for each member helps nurses prioritize risks and expand care connections.

The ONE care team uses targeted data to help members take control of their health and medical costs in many ways, including:

- Directing to premium providers
- Addressing adherence issues
- Flagging prescription duplications and contraindications
- Shifting to lower tier or lower-cost medications

The synchronized care management model described here depends on a minimum specific set of OptumHealth care management services, plus OptumRx pharmacy services. Please speak to your OptumRx or UnitedHealthcare representative for more information about how synchronization can work for you.

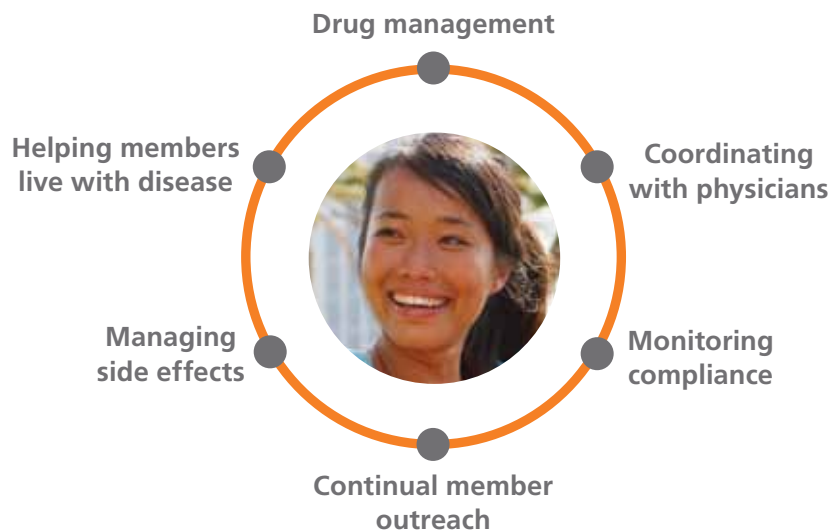
## SPECIALTY PHARMACY PROGRAM

Our MS Clinical Management Program combines disease self-management with medication therapy management, including telephone consultations, educational materials, and a personalized care plan.

Study results<sup>23</sup> show that MS patients who enrolled in the program have significantly better outcomes compared to those who filled prescriptions at retail, or who used a specialty pharmacy but did not participate in the program:

- Demonstrated greater duration of therapy
- Had a 33 percent lower rate of relapse
- Experienced corresponding reductions in medical costs

Total Care Management = Better Health, Lower Costs



Studies confirm the cost impact of these reduced relapse rates for MS are due to increased compliance with therapy.\* Taking all of our specialty pharmacy programs together, our clients also see an overall decrease in medical costs due to reductions in doctor visits, lab tests, emergency room visits and hospitalizations:

**Results: \$3.21 total PMPM savings\*\***

See how Unitedhealthcare pharmacy is lowering costs and improving health for MS patients like Ginny  
If you are viewing this online, click on the play button to begin.



### Specialty Pharmacy MS Story – Ginny

\*Result was statistically significant: P<0.05

Specialty program outcomes savings based on UnitedHealthcare commercial membership, 2007 and 2008. Network contract savings based on 2011 commercial FI membership. Utilization management savings based on a sample of 2011 commercial ASO membership. Individual plan results may vary.

\*\*PMPM (Per Member Per Month) savings applies to ASO customers only. This potential savings amount is not guaranteed. Actual savings amount may vary.



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For more information about how you can manage the cost of MS,  
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