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Funding the Miracles: Best Practices for Managing Spinraza and Other Orphan Drugs

Spinraza Overview

In a development described by patient advocates as "an historic moment" and "amazing milestone,"[1] the U.S. Food and Drug Administration (FDA) approved Spinraza (nusinersen) for use in adults and children with spinal muscular atrophy (SMA) on December 23, 2016, after a "fast track" priority review.[2,3] SMA, a genetic protein deficiency affecting 1 in 10,000 births, has been described as "a baby version of ALS [amyotrophic lateral sclerosis]"[4] because like ALS, it causes nerve degeneration and severe loss of muscle strength leading to life-threatening complications, such as difficulty swallowing and respiratory failure in the most severe cases.[5] Spinraza controls—but does not cure—the genetic mutation that causes the disease, enabling the body to produce more of the missing motor neuron protein. In the controlled trial that led to the drug's approval, 40% of patients with infant-onset SMA who received the drug, compared with 0% of those who didn't, experienced substantial improvements in important motor skills like head control, sitting, kicking, crawling, and walking.[2]

But these substantial improvements come at a high price—$125,000 per dose.[6] At five to six doses in the first year of treatment and three doses annually thereafter, the total cost of ten years of treatment, without considering price inflation, markups, or discounts, comes to more than $4 million per patient. Because Spinraza is not a cure despite its specific genetic targeting, these costs may be incurred throughout a patient's lifetime. And, an important point for management, Spinraza must be administered by a medical professional because it is injected into the spine, requiring anesthesia for some children,[7] so employers must also plan for drug administration costs.

Orphan Drugs in the Medical Benefit: Rare But Critically Important Management

Orphan drugs like Spinraza may represent the epitome of what many think of when the term "specialty drug" is mentioned, in two respects. First, Spinraza is clearly a groundbreaking and lifesaving treatment for a group of patients that has, up to this point, had few options other than to "enjoy the little time you have together," as one parent described it.[4] Second, however, its cost, combined with those of other orphan drugs costing $300,000 to $1 million per patient per year, could threaten the financial viability of an employer's medical benefits if not managed appropriately. Think of the challenge this way: Spinraza has been described by one physician who treats patients with SMA as "a miracle—seriously."[6] But to keep providing this and other miracles to plan populations, employer groups will need to maintain a financially viable health care benefit. This, in a nutshell, is the opportunity and challenge of specialty drugs.

Objectives for Specialty Medical Management: Easy to Say, Not So Easy to Do

The overarching "best practice" management approach for specialty drugs in the medical benefit is to: (1) pay only reasonable costs for drugs, administration, and related fees; and (2) pay only for drugs that are clinically appropriate for the patient. These seem like simple concepts because they are—in fact, they reflect a managed care mantra that is decades old: right patient, right drug, right dose and duration, right price. However, these "simple" objectives aren't easy to carry out for specialty drugs administered in medical sites of care for two reasons.

First, medical claims may be billed with limited information. A nonspecific Healthcare Common Procedure Coding System (HCPCS) code, such as "J3590" (unclassified biologics), may be used.[8] For example, Soliris, an orphan drug indicated for paroxysmal nocturnal hemoglobinuria (PNH) and atypical hemolytic uremic syndrome (aHUS), was initially approved in 2007 but had no specific HCPCS code until 2008.[9,10] This limitation makes it hard for plans to "manage what they can't measure."[11] As a new medication, Spinraza will initially be billed using a nonspecific code, making its management especially difficult.

Second, drug pricing in the medical benefit is highly, and inappropriately, variable. Pricing within the outpatient hospital (OPH) setting, where Spinraza is likely to be administered frequently because of the lumbar puncture, typically varies 10-fold for specialty drugs.[12] With very high-cost medications like Spinraza, this variation can represent a "make or break" difference for employers. For example, without considering drug administration charges, six doses of Spinraza in the first treatment year priced at a 10% markup would cost about $825,000; at a 100% markup, the total charge would soar to $1.5 million.

Archimedes Analyses of Orphan Drugs

Recognizing the potential financial impact of orphan medications on employers, Archimedes places special focus on these drugs in its analytic and management processes. Soliris, with an annual cost estimated at $440,000 to $669,000 in 2015/2016,[13-15] provides a good case study for what to expect with a new orphan drug. Results of analyses conducted retrospectively for several employers are shown in Table 1.

Table 1. Retrospective Drug Utilization Review of Soliris: Financial Impact and Potential Waste Identified in Initial Analyses of Employer Data

Group	Number of Treated Patients	Indication for Use	Annual Drug Cost[a]	PMPY Impact	Provider Type	Average Payment (as % of ASP)	Estimated Provider Drug Margin
Employer A	2	Acquired hemolytic anemia	$560,000	$7.45	OPH	195%	$272,000
Employer B	1	PNH/ aHUS	$1,400,000	$43.03	Physician Office ($230K) OPH ($1.2M)	105% 292%	$11,000 $799,000

[a] Numbers are rounded to protect patient privacy. aHUS= atypical hemolytic uremic syndrome (labeled indication); ASP=average sales price; K=thousand; M=million; OPH=outpatient hospital; PMPY=per member per year; PNH=paroxysmal nocturnal hemoglobinura (labeled indication).

As shown in the table, markup over ASP for Soliris varied widely, and one large plan paid nearly four times the drug cost in the outpatient hospital setting; its $1.2 million expenditure in the OPH represented an estimated provider margin of nearly $800,000. Additionally, off-label uses were identified.

In addition to retrospective analyses, it is important to assess the impact of new drugs prospectively to identify potential financial liabilities and implement proactive management strategies to avoid wasteful expenditures. The results of analyses of potential Spinraza use, conducted for several employers, are shown in Table 2.

Because infantile-onset SMA represents the most severe form of the disease, the distribution of ages across plans is important for the analysis. The "conservative estimate" assumes that only pediatric and young adult patients are treated, at a drug cost markup of 8%. The "estimated maximum" assumes treatment of all patients regardless of age, at a drug cost markup of 100%, typical of the OPH setting.

Table 2. Projected Financial Impact of Spinraza Use on Employer Costs

Baseline Plan Information					Total Expenditure Impact, First Year		PMPY Impact, First Year	
Employer	Number of Enrollees	Pediatric Patients[a]	Young Adult Patients[a]	Older Patients[a]	Conservative Estimate	Estimated Maximum	Conservative Estimate	Estimated Maximum
C	5,200	0	0	2	$0	$3,000,000	$0.00	$576.92
D	102,000	0	0	10	$0	$15,000,000	$0.00	$147.06
E	17,100	0	1	1	$810,000	$3,000,000	$47.37	$175.44
F	11,200	0	0	3	$0	$4,500,000	$0.00	$401.79
G	84,000	0	1	10	$810,000	$16,500,000	$9.64	$196.43
H	10,700	0	0	2	$0	$3,000,000	$0.00	$280.37
I	60,400	1	1	9	$1,620,000	$16,500,000	$26.82	$273.18
J	2,600	0	0	1	$0	$1,500,000	$0.00	$416.67
K	5,600	0	0	3	$0	$4,500,000	$0.00	$803.57

[a] Pediatric is aged <18 years; young adult patients are aged 18 through 30 years; and older patients are aged 31 years or older (maximum age=70 years). [b] Conservative estimate assumes that only pediatric and young adult patients are treated, at a drug cost markup of 8%. Estimated maximum assumes treatment of all patients regardless of age, at a drug cost markup of 100%.

The results show the extraordinarily wide range in the estimated potential impact of Spinraza on a plan's drug cost per member per year (PMPY): from $0 to $47 PMPY assuming treatment of only pediatric and young adult patients at an 8% markup, and from $147 to $804 PMPY assuming treatment regardless of age at a 100% markup.

The wide range in the estimated financial impact reflects three factors:

(1) Significant variability in prevalence in smaller populations, which occurs because SMA is rare.
(2) Uncertainty about how the drug will be used in clinical practice and for which patients it will be effective. Despite the drug's FDA-approved indication for use in patients of all ages, published evidence is limited to infants at this writing, and no controlled studies to date include adults.[3,16]
(3) Large potential variability in estimated price, based on the range of markups typically observed for other specialty drugs across different sites of care.

As a final note, it is widely recognized that diagnoses reported on medical claims are not 100% accurate. For this reason, some of the patients identified in this analysis may not actually have SMA despite the medical claim diagnosis. Conversely, some patients with SMA may not have a diagnosis in their recent medical claims history, and therefore, would not be identified in this analysis.

Best Practices for Medical Management of Orphan Drugs

The key to appropriate medical management of orphan drugs is proactivity—act, don't react, because there is no way to "unring the bell" of an inappropriate multimillion dollar expenditure.

Plan for the pipeline. Awareness of upcoming and recent drug approvals is an important first step. Vendors and consultants should be providing this service. Those who do not have access to this service can consider subscribing to free online resources, such as Prime Insights or MedConnect.[17,18]

Identify patients on a proactive basis. To plan for the use of Spinraza by patients with SMA, we recommend using medical claims data to identify patients with the diagnosis immediately.[19] Given the therapeutic benefit of this drug, it is highly likely that physicians will use it in the majority of pediatric patients with the disease. Plan sponsors will need to plan the management strategies for this medication, including cost negotiations with providers, proactively. This process should be repeated as additional orphan drugs enter the pipeline.

Implement and enforce prior authorization policies. After identification of patients who are potential candidates for use of Spinraza, strict enforcement of prior authorization requirements is essential. Although the mechanism and genetic target for Spinraza are highly specific, the launch of any new medication for a life-threatening neurological disorder has the potential to result in off-label use. Plans should carefully prior authorize the medication, requiring submission of a genetic test result to validate the diagnosis and SMN1 mutation prior to coverage, and periodically reassess throughout treatment. Given the aforementioned limited base of evidence about use in adults, it may be especially prudent to carefully assess clinical appropriateness in this age group.

Specialized quantitative analysis. Because Spinraza will be launched without a specific HCPCS code, utilization review activities will need to rely on an identification method other than HCPCS. Possibilities include (1) requiring providers to include national drug code (NDC) number on the claim and/or (2) monitoring medical claim costs on an ongoing basis for patients with the diagnosis.

Watch out for markups. The mark-up on Spinraza is likely to vary considerably by provider type, making it essential to be especially proactive in managing coverage and pricing in the pharmacy and medical benefits, and across all sites of care. Specialty pharmacies typically have a 6%-8% gross margin, which would translate to a price of approximately $132,500 to $135,000 per dose. At this writing, pricing within physician offices is unclear, but markups are expected to range from 8%-20% for most commercial plans. An especially important point is that, as noted previously, outpatient hospitals typically have 100% mark-ups, if not more, on specialty drugs. As Archimedes analyses indicate, medical claims exceeding an 8% markup could quickly increase financial liability for a plan.

Monitor effect on stop-loss premiums. Plans that experience spending increases because of treatment of catastrophic illnesses, such as SMA, can also expect an increase in stop-loss premiums. These should be planned for as proactively as possible.

Conclusion

Specialty drug expenditures have grown at an annual rate of about 12%-20% in recent years and are projected to exceed $1,000 PMPY beginning in approximately 2019.[20-23] To continue making lifesaving medications like Spinraza available to patients who need them, the health care system must intensify its efforts to make coverage decisions based on quantitative analyses of claims data, targeted to the unique challenges of specialty drug administration. Given the potential financial exposure posed by orphan medications, plans should plan proactively for management of these drugs on an ongoing basis.

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