Site of Service and Cost Dispersion of Infused Drugs

A case study of patients with multiple sclerosis

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Multiple sclerosis (MS) disease-modifying therapies (DMTs) represent a significant portion of a health plan's total spend. Several DMTs are available to patients with MS, including infused treatments that must be administered by a physician. This paper examines the cost dispersion of one infused DMT treatment, ocrelizumab, by site of service for patients with commercial insurance, a major insurance segment for MS patients.

Infused drugs available for the treatment of multiple sclerosis include alemtuzumab, natalizumab, and ocrelizumab. Ocrelizumab was launched in March 2017, with an annual wholesale acquisition cost (WAC) price of $65,000, the lowest among infused MS DMTs. Ocrelizumab must be administered under physician supervision. Therefore, in addition to the drug (or ingredient) price negotiated by payers, which often includes markups by providers, the total cost of treatment also includes administration-related services. The combination of markups and administration costs creates a wide dispersion in the cost of treatment with ocrelizumab, and can also affect out-of-pocket costs borne by patients.

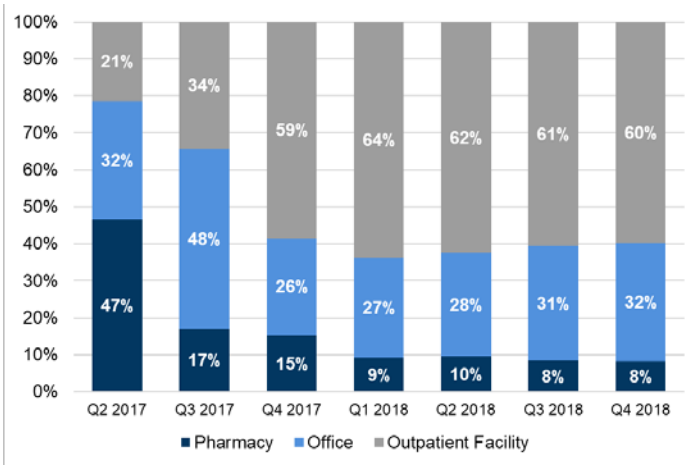
A look at patients receiving ocrelizumab

Per label, patients receive 1200mg annually over two 600mg doses, six months apart. A patients' first dose consists of two infusions of 300mg, 14 days apart. Ocrelizumab may be acquired through the pharmacy, at the physician's office, or at an outpatient facility, with the latter constituting the majority of the use. The payer reimbursement for ocrelizumab is determined by the way of acquiring the drug ("site of service"):

- ***Pharmacy:*** patients obtain the drug at the pharmacy using their prescription drug benefit, and bring it to the physician's office for administration ("brown-bagging"); alternatively, the administration site receives the drug through a pharmacy ("white-bagging"), which is also reimbursed through the prescription drug benefit. In both cases, the office then bills the patient's medical benefit for the administration-related services.
- ***Physician's office***: a physician purchases the drug and bills the patient's medical insurance for the drug, often with a markup, plus the administration. This is commonly referred to as "buy and bill."
- ***Outpatient facility***: the mechanics are similar to a physician's office, except that the "buy and bill" provider is a hospital or ambulatory surgical center.

We analyzed the patterns of use and treatment costs of ocrelizumab patients with commercial insurance using a large dataset of medical and pharmacy claims. Since the launch of ocrelizumab in 2017, spending for ocrelizumab has shifted away from the pharmacy towards the outpatient facility, which then remained constant as the largest segment, as shown in Figure 1.

FIGURE 1: DISTRIBUTION OF OCRELIZUMAB SPENDING BY SITE OF SERVICE



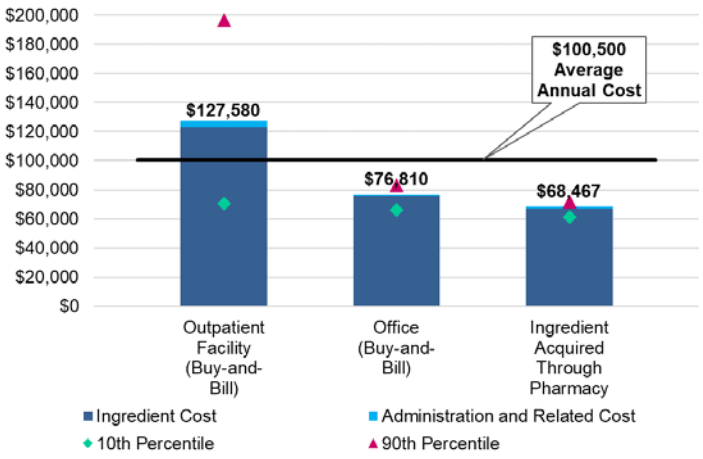
SOURCE: Milliman's analysis of IBM MarketScan® commercial claims data, 2017 Q2 - 2018 Q4.
Operational issues may have forced Q2 2017 users to obtain ocrelizumab at the pharmacy.

Variability in annual treatment costs reimbursed by payers

Average annual treatment costs for ocrelizumab in our study vary by site of service, and the dispersion is substantial when the drug is obtained at an outpatient facility, as can be seen in Figure 2. Annual costs in this study consist of drug ingredient costs, including markup, plus administration-related costs.

Across all sites of service, the observed average annual treatment cost of ocrelizumab reimbursed by payers is $100,500, over 50% greater than its WAC price of $65,000. The average annual treatment cost when ocrelizumab is obtained at an outpatient facility is, on average, 86% higher than when obtained at a pharmacy ($127,600 and $68,500, respectively). Furthermore, that cost can vary dramatically at an outpatient facility, from $70,600 to $196,500 for the 10th and 90th percentiles, respectively.

FIGURE 2: ANNUAL TREATMENT COST OF OCRELIZUMAB, AS REIMBURSED BY PAYERS IN 2018[1]



SOURCE: Milliman's analysis of IBM MarketScan® commercial claims data, 2018.

[1]Reimbursed amounts include both plan paid and patient cost sharing.

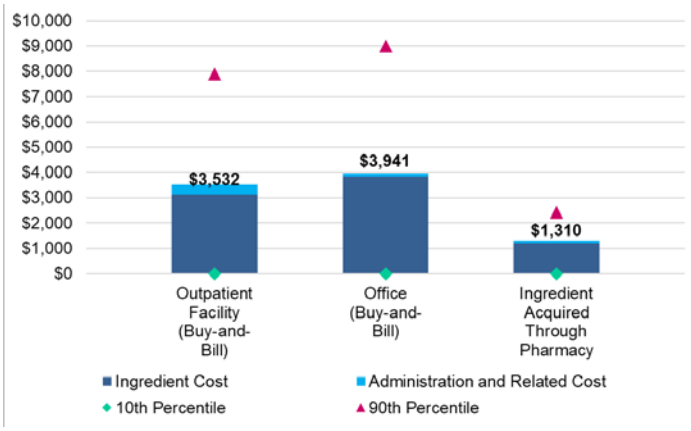
These results are consistent with recently published data on markups for specialty products, which suggest payer reimbursement of 2.5 times average sales price (ASP) levels[i]. While outpatient facilities are more likely to be reimbursed on a negotiated percentage of billed charges, physician offices tend to follow Medicare using the ASP benchmark (106%)[ii]. The low variability in reimbursement levels at the physician's office in our study suggests a similar dynamic for ocrelizumab.

Impact on patient out-of-pocket costs

A portion of the ingredient cost and administration-related services for ocrelizumab are borne by patients in the form of deductibles, copays and coinsurance. Figure 3 shows the average patient out-of-pocket (OOP) costs by site of service for one year of treatment with ocrelizumab.

Patients obtaining ocrelizumab at the pharmacy pay the least OOP, while those receiving ocrelizumab at the physician's office and outpatient facility pay, on average, 2.5 times more in OOP.

FIGURE 3: ANNUAL PATIENT OUT-OF-POCKET COST FOR TREATMENT WITH OCRELIZUMAB IN 2018



SOURCE: Milliman's analysis of IBM MarketScan® commercial claims data, 2018.

The 10th and 90th percentiles of OOP costs show wide variations in the outpatient facility and office sites of service, with patients in the 90th percentile paying $7,900 and $9,000, respectively, for a year of treatment. Patients obtaining ocrelizumab at the pharmacy have the least dispersion in OOP costs.

Conclusions

Infused drugs can carry additional costs such as administration-related expenses and mark-ups on the price of the drug. These must be considered when determining the real-world cost of infused therapies to health plans, the health care system overall, and patients. In particular, the way of acquiring the infused drug can have a substantial impact on payer budgets and patient OOP costs.

The average annual treatment cost for ocrelizumab has increased since launch due to the continued shift in site of service towards outpatient facilities, which accounts for 60% of ocrelizumab spend by Q4 2018, despite no changes to WAC. Providers may have a financial incentive to treat patients in more expensive sites of care. Payers on the other hand, pay less when the infused drug is acquired at the pharmacy or physician's office. Additionally, patients can expect the lowest OOP expenses when the drug is obtained at the pharmacy using the prescription drug benefit.

To reduce overall costs, payers may encourage drug acquisition through pharmacies via white- or brown-bagging. Payers may also implement incentives to steer patients to less costly infusion sites, such as lowering cost sharing for certain network providers

and providing information about expected OOP costs at different sites. Some payers have imposed medical necessity criteria for infusion sites, limiting infusion to a non-hospital site unless a patient is deemed to be high-risk[iii,iv].

Methodology and Data Sources

We identified patients receiving ocrelizumab in IBM MarketScan® commercial quarterly claims data, from Q2 2017 through Q4 2018. Ocrelizumab infusions were identified through CPT/HCPCS and NDC codes. Ocrelizumab was approved in March 2017; however we relied on 2018 data for the calculation of treatment costs because of its much larger sample of patients and consistency in the recording of dosages. To ensure appropriate calculation of per unit costs, we excluded all claims from our analysis that did not indicate a quantity of either 300mg or 600mg, consistent with label.

Ocrelizumab infusions were classified as performed in a physician's office or outpatient facility based upon the site of service indicated in claims data. Administration-related costs were identified as costs incurred on the same day as an ocrelizumab infusion having a procedure or revenue code associated with administering the drug. Ocrelizumab pharmacy claims were identified based on pharmacy data alone, regardless of a multiple sclerosis diagnosis. We assumed administration-related costs for patients obtaining ocrelizumab at the pharmacy would be equal to those for patients obtaining the drug at the physician's office.

Annual treatment cost represents reimbursed amounts for ocrelizumab, including administration-related expenses, as negotiated by payers and providers, or between payers and pharmacy benefit managers (PBMs). These amounts represent payer costs plus patient OOP costs.

Caveats

The results presented here are based on real world ocrelizumab patients with commercial insurance. Figures reported represent national averages. Costs for other populations, or for any particular payer or patient may vary substantially from those presented here due to demographics, local practice patterns, negotiated reimbursement levels, and other factors. This report was commissioned by Novartis Pharmaceuticals Corporation, a manufacturer of therapies for the treatment of multiple sclerosis. The findings reflect the research of the authors. Milliman does not endorse any product or organization.

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[i] The Moran Company. Hospital Charges and Reimbursement for Drugs: Analysis of Markups Relative to Acquisition Cost. Available at http://www.themorancompany.com/wp-content/uploads/2017/10/Hospital-Charges-Report-2017_FINAL.pdf. Accessed December 5, 2019
[ii] Fein AJ. https://www.drugchannels.net/2018/08/still-possible-hospitals-overcharge.html . Accessed October 31, 2019.
[iii] United Healthcare. Provider Administered Drugs – Site of Care. https://provider.medmutual.com/tools_and_resources/Care_Management/MedPolicies/PDF/201708.pdf . Accessed December 12, 2019.
[iv]Medical Mutual. Drug Policy: Ocrelizumab. https://www.uhcprovider.com/content/dam/provider/docs/public/policies/comm-medical-drug/specialty-medication-administration-site-care-review-guidelines.pdf. Accessed December 12, 2019.

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