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# ISSUE BRIEF

## Promoting Biosimilar Competition to Reduce Patients' Out-of-Pocket Costs

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**COSTS**

Promoting Biosimilar Competition to Reduce Patients' Out-of-Pocket Costs  
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## Executive Summary

Biologics are complex cutting-edge medicines that treat diseases such as cancer, arthritis, and auto-immune diseases. These innovative products, known as originator biologics, create tremendous value for patients. Originator biologics are also expensive. Biosimilars, medicines that have the same quality, safety, and efficacy as the originator biologic, are akin to generic medicines for the biologics market.

Compared to the price of the originator biologics prior to the introduction of a biosimilar, biosimilars typically sell at discounts of up to 20 percent to 40 percent. Due to their lower costs, these medicines have the potential to substantially reduce the amount that the healthcare system spends on drugs. The lower costs offered by biosimilars will also reduce the total amount of money patients must pay in out-of-pocket costs.

This study estimates the potential out-of-pocket savings for patients from using biosimilars instead of the originator biologic medicines. The estimates are provided for patients covered by Medicare and the average employer-sponsored health plans. Depending upon the drug, and based on the treatment assumptions, biosimilars can reduce patients' out-of-pocket costs by up to 47.0 percent (for a biosimilar that competes with Humira and Enbrel and sells at the expected discount of 50 percent). Weighted by the total spending for each drug, biosimilars can reduce a patient's average out-of-pocket costs by 17 percent.

**TABLE A1. Estimated Out-of-Pocket Percentage Savings Based on Originator Prices Prior to Biosimilar Entry\***  
Traditional Medicare, Medicare Advantage, and Average Employer Plans

	TRADITIONAL MEDICARE	MEDICARE ADVANTAGE	EMPLOYER PLANS
<b>Humira</b>	-29.7%	-29.7%	-47.0%
<b>Enbrel</b>	-29.7%	-29.7%	-47.0%
<b>Avastin</b>	-13.4%	0.0%	-13.8%
<b>Epogen / Procrit</b>	-27.7%	-27.7%	-24.2%
<b>Herceptin</b>	-14.2%	-4.1%	-14.4%
<b>Neulasta</b>	-20.2%	-20.2%	-19.4%
<b>Neupogen</b>	-43.9%	-43.9%	-43.6%
<b>Remicade</b>	-41.7%	-41.7%	-38.5%
<b>Rituxan</b>	-7.6%	0.0%	-7.8%

Source: Author estimates based on CMS data and prescribed treatment dosages

\*The biosimilar prices that compete with Humira and Enbrel are assumed because no competitors currently exist.

Applying these savings to the total out-of-pocket costs, in just the 9 biologic drug classes where biosimilar competitors have been approved, use of biosimilars can reduce the total out-of-pocket spending by \$238 million.

The large potential reduction in out-of-pocket spending provides another justification for policymakers to address the market and regulatory inefficiencies that are inhibiting a more robust biosimilars market from developing.

## Introduction

It is well known that a small percentage of patients pay the majority of the out-of-pocket healthcare costs annually. According to IQVIA data, the average out-of-pocket cost for all products was \$9.05. However, excluding Medicaid patients, 2.2 percent of patients had out-of-pocket expenditures that exceeded \$1,500.<sup>1</sup> In aggregate, according to an analysis of the Medical Expenditure Panel Survey data by the Kaiser Family Foundation, 20 percent of patients account for 80 percent of the out-of-pocket spending on health services.<sup>2</sup>

Many of these patients facing high out-of-pocket costs are prescribed biologic medicines that treat cancer, arthritis, and autoimmune diseases. Based on typical benefit designs, a more competitive biosimilars market, while far from a panacea, could meaningfully reduce these out-of-pocket expenditures. This *Issue Brief* estimates the potential out-of-pocket savings opportunity across the nine biologic medicines where biosimilar competitors have been approved. The savings estimates are based on the costs of a full treatment or the maintenance dosage depending on the drug.

The out-of-pocket savings are estimated for patients covered by employer-based insurance plans, patients with traditional Medicare assuming no Medigap coverage, and patients with Medicare Advantage. The estimated out-of-pocket costs depend on the assumed payment terms and dosage requirements, and are consequently illustrative of the potential savings opportunity. See the Appendix for more details on the assumptions.

“Based on typical benefit designs, a more competitive biosimilars market, while far from a panacea, could meaningfully reduce these out-of-pocket expenditures.”

## Estimated Per Patient Treatment Costs and Potential Out-of-Pocket Savings – Employer-based Insurance

Table 1 summarizes the exemplified treatment costs for the 9 biologic drug classes that currently face actual or approved biosimilar competitors. Except for Humira and Enbrel, these costs are based on a 6 percent mark-up over average sales price (ASP). The costs for Humira and Enbrel are based on the “average spending per dosage unit” as reported by the Centers for Medicare and Medicaid Services (CMS). With respect to the originator biologics, the costs for Humira, Enbrel, Remicade, and Rituxan are based on full-year maintenance dosages. The costs for Avastin, Epogen/Procrit, and Herceptin are based on 4-month treatment periods. Neulasta is based on a one-time treatment, while the cost for Neupogen is based on a once-daily, two-week regimen. The costs for the biosimilars are based on the same regimens; estimated prices are used for the biosimilar versions competing with Humira and Enbrel because no price data are available (see the Appendix).

**TABLE 1. Estimated Treatment Costs | Employer-sponsored Plans**

	ANNUAL COST/ TREATMENT COST	
	ORIGINATOR	LOWEST COST BIOSIMILAR
<b>Humira</b>	\$63,970	\$31,985
<b>Enbrel</b>	\$63,769	\$31,885
<b>Avastin</b>	\$53,934	\$46,664
<b>Epogen / Procrit</b>	\$6,592	\$5,819
<b>Herceptin</b>	\$37,168	\$31,836
<b>Neulasta</b>	\$4,257	\$3,739
<b>Neupogen</b>	\$5,589	\$3,224
<b>Remicade</b>	\$15,581	\$12,979
<b>Rituxan</b>	\$40,911	\$37,740

Source: Author estimates based on CMS data and prescribed treatment dosages

According to the Kaiser Family Foundation, of the people covered by employer-sponsored health insurance “seventy percent of those with coinsurance have a maximum dollar limit on the amount of coinsurance they must pay.”<sup>3</sup> For patients with a meaningful maximum dollar limit on their coinsurance payments, the annual costs will likely reflect their out-of-pocket limit. For the 30 percent of patients without a coinsurance limit, the out-of-pocket cost differences between the originator product and the lowest cost biosimilar or expected biosimilar cost can be substantial.

To get a sense of how large the potential savings can be, Table 2 uses the estimated treatment costs presented in Table 1 to estimate the potential out-of-pocket expenditures for patients. Table 2 presents the out-of-pocket expenditures for the originator products, the lowest cost biosimilars, and the potential biosimilar savings based on the average plan benefit designs for specialty drugs (the tier most biologic drugs would be covered) as reported by the Kaiser Family Foundation.<sup>4</sup> The average plan benefit design for an employer plan includes a copayment for specialty drugs of \$109, and an average coinsurance payment of 24 percent. Based on these assumptions, Table 2 illustrates that the lowest cost biosimilar (or expected price of the biosimilar once it becomes available) would reduce patient out-of-pocket costs between 7.6 percent or \$761 for Truxima (the biosimilar version that competes with Rituxan) and 47.0 percent or over \$7,650 should the biosimilar versions that will compete with Humira and Enbrel sell at the expected discount. On a dollar basis, Fulphila (the biosimilar version for Neulasta) offers the smallest savings (\$124).

The largest potential savings for a biosimilar that is currently available, on a percentage basis, is 39.8 percent or \$567 for Zarxio (the biosimilar version that competes with Neupogen). The largest dollar savings for a biosimilar that is currently available is \$1,745 for Mvasi (the biosimilar version that competes with Avastin).

It is important to note that these costs do not account for potential out-of-pocket reductions available from manufacturer discount programs and coupons that can further reduce these costs.

**TABLE 2. Estimated Out-of-Pocket Costs, Average Employer Plans | No Out-of-Pocket Maximum**

	ANNUAL / TREATMENT OUT-OF-POCKET COST		BIOSIMILAR SAVINGS	
	ORIGINATOR	LOWEST COST BIOSIMILAR	PERCENTAGE	DOLLAR
<b>Humira</b>	\$16,347	\$8,670	-47.0%	\$7,676
<b>Enbrel</b>	\$16,299	\$8,646	-47.0%	\$7,652
<b>Avastin</b>	\$13,276	\$11,531	-13.1%	\$1,745
<b>Epogen / Procrit</b>	\$1,913	\$1,728	-9.7%	\$186
<b>Herceptin</b>	\$9,252	\$7,972	-13.8%	\$1,280
<b>Neulasta</b>	\$1,105	\$980	-11.2%	\$124
<b>Neupogen</b>	\$1,424	\$857	-39.8%	\$567
<b>Remicade</b>	\$4,278	\$3,654	-14.6%	\$624
<b>Rituxan</b>	\$10,055	\$9,294	-7.6%	\$761

Source: Author estimates based on CMS data and prescribed treatment dosages

The potential out-of-pocket savings created by biosimilar competition may be higher than the current prices indicate. As the pricing charts in the Appendix demonstrate, the prices of the originator biologics, which had been either rising or flat prior to the introduction of a competitor product, declined (sometimes significantly) following the introduction of biosimilar competitors. Since the introduction of the biosimilar is the likely cause of the price declines, it is reasonable to estimate the out-of-pocket savings based on the originator prices that existed prior to the introduction of the biosimilar. Table 3 estimates the biosimilar out-of-pocket savings based on this criterion for those originator biologics that face actual biosimilar competition (excludes Humira and Enbrel).

**TABLE 3. Estimated Out-of-Pocket Costs, Average Employer Plans  
Based on Originator Prices Prior to Biosimilar Entry | No Out-of-Pocket Maximum**

	ANNUAL / TREATMENT OUT-OF-POCKET COST		BIOSIMILAR SAVINGS	
	ORIGINATOR	LOWEST COST BIOSIMILAR	PERCENTAGE	DOLLAR
<b>Avastin</b>	\$13,378	\$11,531	-13.8%	\$1,847
<b>Epogen / Procrit</b>	\$2,278	\$1,728	-24.2%	\$550
<b>Herceptin</b>	\$9,316	\$7,972	-14.4%	\$1,344
<b>Neulasta</b>	\$1,216	\$980	-19.4%	\$236
<b>Neupogen</b>	\$1,520	\$857	-43.6%	\$663
<b>Remicade</b>	\$5,942	\$3,654	-38.5%	\$2,289
<b>Rituxan</b>	\$10,082	\$9,294	-7.8%	\$788

Source: Author estimates based on CMS data and prescribed treatment dosages

Comparing Table 3 to Table 2, the savings potential for Inflectra (the biosimilar that competes with Remicade) now generates the largest total out-of-pocket savings (\$2,289). The large jump in the potential out-of-pocket savings created by Inflectra indicates that the comparison of the current price differential may significantly underestimate the total out-of-pocket savings generated for this biosimilar. A similar dynamic holds for Retacrit (the biosimilar that competes with Epogen/Procrit).

***Estimated Per Patient Treatment Costs and Potential Out-of-Pocket Savings – Medicare***

Using the same regimen assumptions as the employer-sponsored insurance calculations, Table 4 presents the estimated treatment costs for the 7 biologic classes with biosimilar competition that are covered under Medicare Part B (the Medicare Part D drugs are presented separately due to the different benefit design). The difference between Table 4 and Table 1 is that the costs for the 7 biosimilar drugs reflect the 6 percent mark-up that is applied to the originator biologics (as per Medicare policy). The estimated costs for the two drugs covered under Medicare Part D are the same as Table 1.

**TABLE 4. Estimated Treatment Costs**

	ANNUAL COST/ TREATMENT COST	
	ORIGINATOR	LOWEST COST BIOSIMILAR
Avastin	\$53,934	\$47,075
Epogen / Procrit	\$6,592	\$5,863
Herceptin	\$37,168	\$32,138
Neulasta	\$4,257	\$3,769
Neupogen	\$5,589	\$3,358
Remicade	\$15,581	\$13,127
Rituxan	\$40,911	\$37,919

*Source: Author estimates based on CMS data and prescribed treatment dosages*

A Medicare beneficiary’s out-of-pocket costs depend on whether the beneficiary is covered under traditional Medicare or Medicare Advantage. For the approximately two-thirds of seniors covered by traditional Medicare, 81 percent have Medigap coverage.<sup>5</sup> Typically, beneficiaries with Medigap coverage do not have any out of pocket costs for Part B drugs once their deductible amount has been paid (e.g. Medigap Plan F, which is the most popular, covers all of a patient’s costs not covered under traditional Medicare).<sup>6</sup> Patients covered by traditional Medicare without Medigap coverage (19 percent of those seniors covered by traditional Medicare) will have to pay 20 percent of the costs for these drugs out of pocket. Table 5 summarizes the out-of-pocket costs that these patients could face.

**TABLE 5. Estimated Out-of-Pocket Costs, Traditional Medicare Without Medigap Coverage  
No Out-of-Pocket Maximum**

	ANNUAL / TREATMENT OUT-OF-POCKET COST		BIOSIMILAR SAVINGS	
	ORIGINATOR	LOWEST COST BIOSIMILAR	PERCENTAGE	DOLLAR
<b>Avastin</b>	\$10,787	\$9,415	-12.7%	\$1,372
<b>Epogen / Procrit</b>	\$1,318	\$1,173	-11.1%	\$146
<b>Herceptin</b>	\$7,434	\$6,428	-13.5%	\$1,006
<b>Neulasta</b>	\$851	\$754	-11.5%	\$98
<b>Neupogen</b>	\$1,118	\$672	-39.9%	\$446
<b>Remicade</b>	\$3,116	\$2,625	-15.8%	\$491
<b>Rituxan</b>	\$8,182	\$7,584	-7.3%	\$598

*Source: Author estimates based on CMS data and prescribed treatment dosages*

Based on the costs described in Table 5, on a percentage basis the lowest cost biosimilar would reduce patient out-of-pocket costs between 7.3 percent for Truxima, the biosimilar version that competes with Rituxan, and 39.9% for Zarxio, the biosimilar version that competes with Neupogen. On a dollar basis, Fulphila, the biosimilar version that competes with Neulasta, offers patients the lowest out-of-pocket savings (\$98); while Mvasi, the biosimilar version that competes with Avastin, offers patients with traditional Medicare the most out-of-pocket savings (\$1,372).

The one-third of beneficiaries covered by Medicare Advantage will face different out-of-pocket costs that depend on the co-insurance rate and the statutory annual out-of-pocket maximum of \$6,700, see Table 6. The out-of-pocket maximum applies to all Part A and Part B services, but counting this maximum against the out-of-pocket costs for these drugs illustrates that potential savings are still available by switching to biosimilars. Based on a 20 percent co-insurance rate subject to the \$6,700 out-of-pocket maximum,<sup>7</sup> the potential out-of-pocket savings range from no savings for Mvasi and Truxima (the biosimilars that compete with Avastin and Rituxan, respectively, and which all exceed the Medicare Advantage out-of-pocket maximum) to 39.9 percent savings for Zarxio (the biosimilar version that competes with Neupogen). On a dollar basis, Inflectra (the biosimilar version that competes with Remicade) offers patients with Medicare Advantage coverage the most out-of-pocket savings (\$491).

**TABLE 6. Estimated Out-of-Pocket Costs, Medicare Advantage  
With a \$6,700 Out-of-Pocket Maximum and 20 Percent Co-insurance Rate**

	ANNUAL / TREATMENT OUT-OF-POCKET COST		BIOSIMILAR SAVINGS	
	ORIGINATOR	LOWEST COST BIOSIMILAR	PERCENTAGE	DOLLAR
<b>Avastin</b>	\$6,700	\$6,700	0.0%	\$-
<b>Epogen / Procrit</b>	\$1,318	\$1,173	-11.1%	\$146
<b>Herceptin</b>	\$6,700	\$6,428	-4.1%	\$272
<b>Neulasta</b>	\$851	\$754	-11.5%	\$98
<b>Neupogen</b>	\$1,118	\$672	-39.9%	\$446
<b>Remicade</b>	\$3,116	\$2,625	-15.8%	\$491
<b>Rituxan</b>	\$6,700	\$6,700	0.0%	\$-

Source: Author estimates based on CMS data and prescribed treatment dosages

Humira and Enbrel are covered under Medicare Part D, which applies a different benefit design than traditional Medicare or Medicare Advantage plans. As of 2020, Medicare beneficiaries with Part D coverage would pay a \$435 deductible, followed by a 25 percent co-insurance cost until \$6,350 of expenditures (including manufacturer payments) have been reached. Once the \$6,350 threshold has been reached, beneficiaries are responsible for 5 percent of the costs with no out-of-pocket maximum. Based on this formula, and the estimated cost for Humira and Enbrel, the out-of-pocket costs and the costs for the potential biosimilar competitors are presented in Table 7. As Table 7 illustrates, a biosimilar competitor to Humira and Enbrel has the potential to reduce out-of-pocket expenditures by 29.7 percent, or by nearly \$1,600.

**TABLE 7. Estimated Out-of-Pocket Costs, Medicare Part D Drugs**

	ANNUAL / TREATMENT OUT-OF-POCKET COST		BIOSIMILAR SAVINGS	
	ORIGINATOR	LOWEST COST BIOSIMILAR	PERCENTAGE	DOLLAR
<b>Humira</b>	\$5,385	\$3,786	-29.7%	\$1,599
<b>Enbrel</b>	\$5,375	\$3,781	-29.7%	\$1,594

Source: Author estimates based on CMS data and prescribed treatment dosages

Since the introduction of the biosimilar has likely caused a decline in the originator prices, Tables 8 and 9 estimate the potential out-of-pocket savings relative to the price of the originator biologic prior to the introduction of the biosimilar for traditional Medicare and Medicare Advantage, respectively. Just as with the commercial market, the savings potential for Inflectra (the biosimilar that competes with Remicade) now generates the largest total out-of-pocket savings (\$1,878 for both traditional Medicare and Medicare Advantage). The large jump in the potential out-of-pocket savings created by Inflectra indicates that the comparison of the current price differential may significantly underestimate the total out-of-pocket savings generated. A similar dynamic holds for Retacrit (the biosimilar that competes with Epogen/Procrit).

**TABLE 8. Estimated Out-of-Pocket Costs, Traditional Medicare Without Medigap Coverage Based on Originator Prices Prior to Biosimilar Entry | No Out-of-Pocket Maximum**

	ANNUAL / TREATMENT OUT-OF-POCKET COST		BIOSIMILAR SAVINGS	
	ORIGINATOR	LOWEST COST BIOSIMILAR	PERCENTAGE	DOLLAR
<b>Avastin</b>	\$10,872	\$9,415	-13.4%	\$1,457
<b>Epogen / Procrit</b>	\$1,622	\$1,173	-27.7%	\$450
<b>Herceptin</b>	\$7,487	\$6,428	-14.2%	\$1,060
<b>Neulasta</b>	\$944	\$754	-20.2%	\$190
<b>Neupogen</b>	\$1,197	\$672	-43.9%	\$526
<b>Remicade</b>	\$4,503	\$2,625	-41.7%	\$1,878
<b>Rituxan</b>	\$8,204	\$7,584	-7.6%	\$621

Source: Author estimates based on CMS data and prescribed treatment dosages

**TABLE 9. Estimated Out-of-Pocket Costs, Medicare Advantage With a \$6,700 Out-of-Pocket Maximum and 20 Percent Co-insurance Rate Based on Originator Prices Prior to Biosimilar Entry**

	ANNUAL / TREATMENT OUT-OF-POCKET COST		BIOSIMILAR SAVINGS	
	ORIGINATOR	LOWEST COST BIOSIMILAR	PERCENTAGE	DOLLAR
<b>Avastin</b>	\$6,700	\$6,700	0.0%	\$-
<b>Epogen / Procrit</b>	\$1,622	\$1,173	-27.7%	\$450
<b>Herceptin</b>	\$6,700	\$6,428	-4.1%	\$272
<b>Neulasta</b>	\$944	\$754	-20.2%	\$190
<b>Neupogen</b>	\$1,197	\$672	-43.9%	\$526
<b>Remicade</b>	\$4,503	\$2,625	-41.7%	\$1,878
<b>Rituxan</b>	\$6,700	\$6,700	0.0%	\$-

Source: Author estimates based on CMS data and prescribed treatment dosages

## Systemic Savings Implication

The aggregate savings can be extrapolated from the total out-of-pocket spending on drugs estimated above, but these estimates provide an approximation of the potential systemic savings, not a precise estimate. A precise estimate would have to account for the actual benefit designs and dosages for the population that uses these drugs and is exposed to large potential out-of-pocket expenditures. However, this extrapolation is instructive with respect to the potential size of the savings opportunity. When accumulated over the patients who are exposed to large out-of-pocket costs, there are hundreds of millions of dollars in potential savings from greater biosimilar use.

“ When accumulated over the patients who are exposed to large out-of-pocket costs, there are hundreds of millions of dollars in potential savings from greater biosimilar use.

In 2018, the total out-of-pocket spending on all drugs was \$61 billion and the total spending on drugs (on an invoice basis) was \$479 billion according to IQVIA data.<sup>8</sup> In a previous analysis, I estimated that the total spending on the medicines with currently approved biosimilar competitors was \$31.4 billion, or 6.6 percent of the total expenditures on all drugs.<sup>9</sup> Assuming that these drugs' share of spending is proportional to their share of out-of-pocket cost, then the greater use of biosimilars can impact 6.6 percent of total out-of-pocket spending.

As illustrated above, based on the current price gaps between the originator biologics and the actual (or potential) biosimilar competitors can reduce total out-of-pocket costs between 7.3 percent and 47.0 percent, depending on the specific drugs.

Weighting the percentage reduction in patient out-of-pocket spending by each drug's share of the total spending for both the Medicare program and commercial payers, as well as accounting for the percentage of patients who are exposed to large out-of-pocket costs, biosimilars could reduce a patient's out-of-pocket spending by 6.0 percent.

A 6.0 percent reduction in 6.6 percent of the aggregate out-of-pocket spending implies that, in aggregate, biosimilars could reduce total out-of-pocket spending by as much as \$238 million. Of course, this implies that biosimilars would have 100 percent of the total spending in each one of the nine drug classes. But, even a 50 percent market share would still represent a \$119 million reduction in out-of-pocket spending. This estimate does not account for the potential additional savings from introducing biosimilars into new drug classes. To the extent that biosimilar competition is introduced into more drug categories, the potential aggregate savings will be larger.

## Conclusion

The out-of-pocket savings specific patients realize will be determined by their specific regimen, coverage terms, and prices. While the potential savings enabled by some biosimilars are modest (e.g. Fulphila relative to the originator Neulasta), the reduction in out-of-pocket costs enabled by other biosimilars is meaningful (e.g. Inflectra relative to Remicade or the potential savings a biosimilar competitor can generate relative to Humira and Enbrel). It is important to note that these savings do not fully alleviate the problem that out-of-pocket costs pose for many at-risk patients. An effective out-of-pocket cap on spending is still necessary, consequently.

The savings differences estimated above illustrate that increased competition from biosimilars can meaningfully reduce the out-of-pocket spending for at-risk patients. Patients' lower out-of-pocket spending is another important benefit that can be realized if policy reforms that eliminate the barriers preventing greater use of lower-priced biosimilars are implemented.

## Appendix

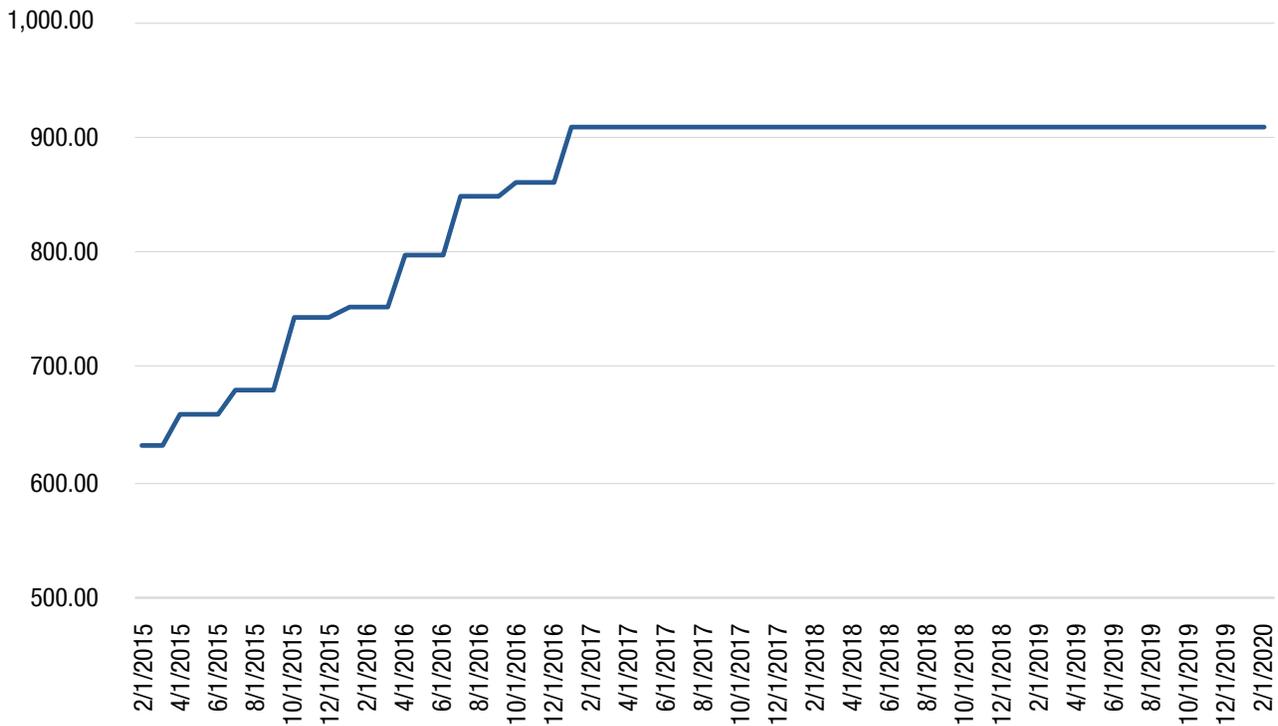
The annual per patient treatment costs are based on the drug's price and the required dosage. For several of the medicines, estimating the right dosage requires an estimated patient's weight because the dosages depend on the weight of the patient. Across all drug classes where dosage depends on weight, the estimated dosages were based on a weight of 83.6 kg (184 pounds), which is approximately the average weight of a person in the U.S.<sup>10</sup>

For all Medicare patients, Part D payment terms are applied for patients prescribed adalimumab (reference product: Humira) and etanercept (reference product: Enbrel) since these drugs are covered under the Part D program. The prices for Humira and Enbrel are based on the total spending per dosage unit as reported by CMS.<sup>11</sup> Out-of-pocket expenditures are estimated based on the Medicare Part D benefit design that is effective as of February 2020.

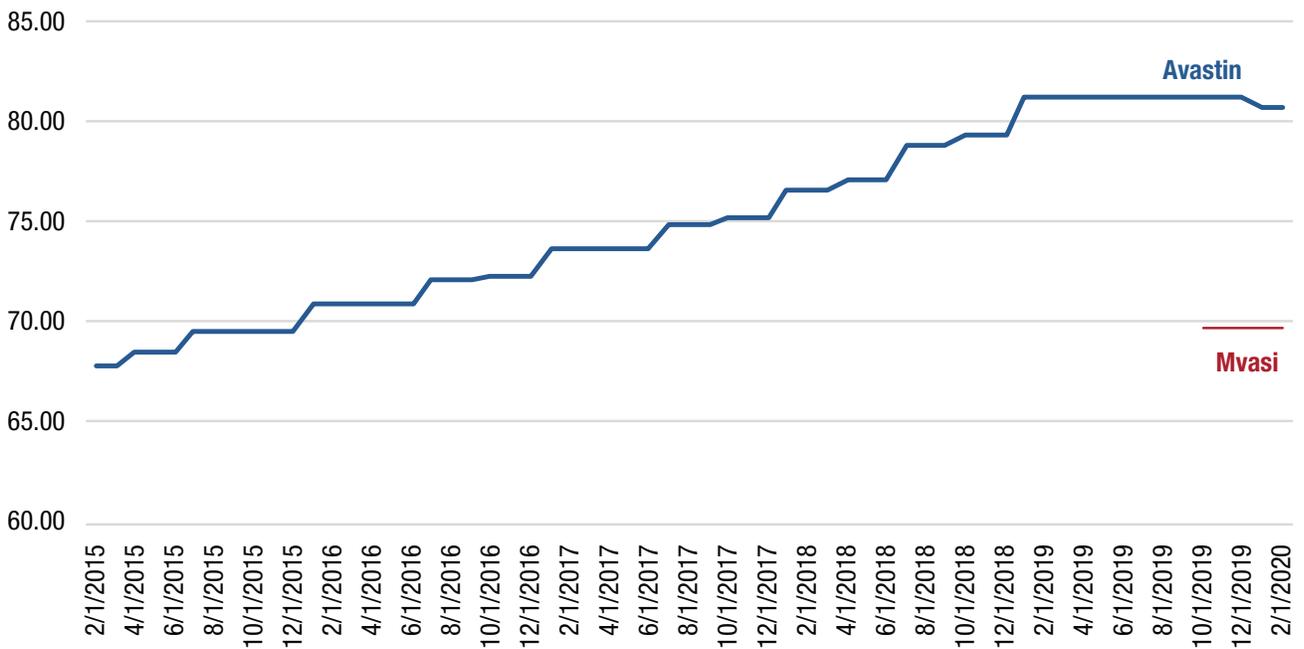
The total costs for drugs covered under Part B are based on the ASP data reported by CMS that are effective January 1, 2020 through March 31, 2020.<sup>12</sup> The out-of-pocket costs for patients covered under traditional Medicare without Medigap insurance is 20 percent of the total ASP. Medicare patients covered under Medicare Advantage plans assume a 20 percent co-insurance rate, which is typical of Medicare Advantage plans. A similar marginal out-of-pocket rate (20 percent) between traditional Medicare and Medicare Advantage also provides an illustration of how the out-of-pocket cap of \$6,700 impacts patients. The costs for patients covered under commercial plans are based on the same price data used for the Medicare program. The out-of-pocket costs are then estimated based on the average benefit design for commercial plans specialty tier as reported by the Kaiser Family Foundation.<sup>13</sup>

Figures 1 – 9 present the estimated prices for the 9 biologic drug classes examined in the paper on a monthly basis beginning in February 2015. For those biologic drugs that face no biosimilar competition (i.e. Humira) only the price for the originator product is presented. For those drug classes with biosimilar competition, only the lowest-cost biosimilar is presented. The source for the data is FDB MedKnowledge.

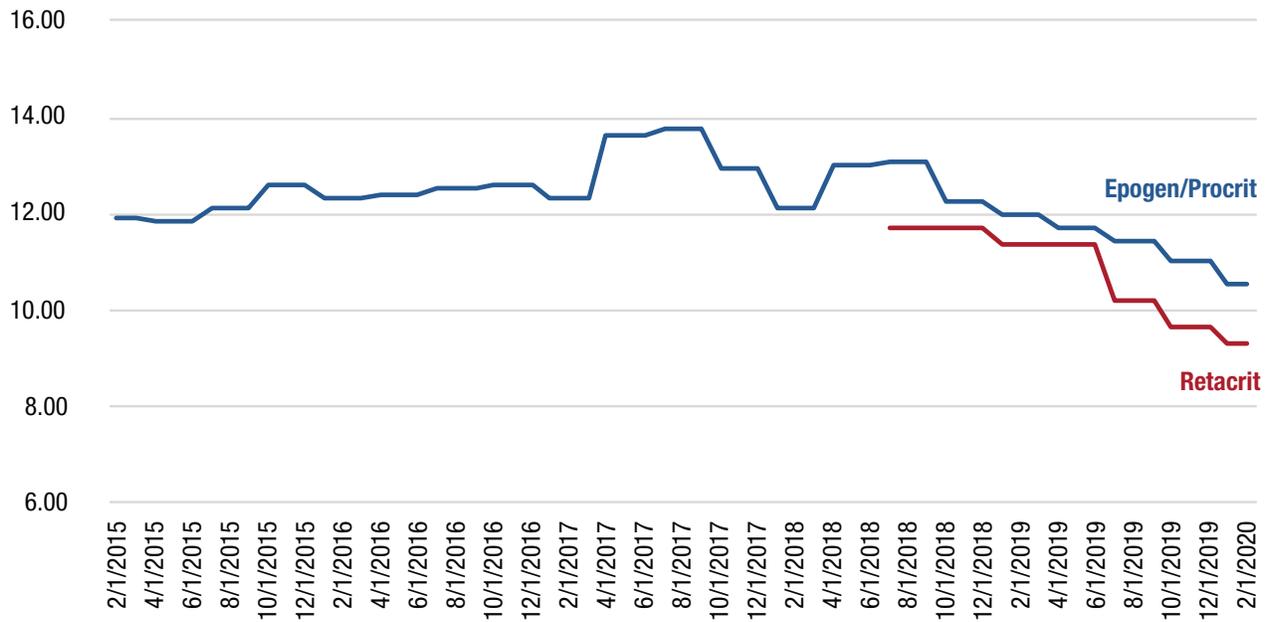
**FIGURE 1. Humira (40 mg/0.8 ml)**



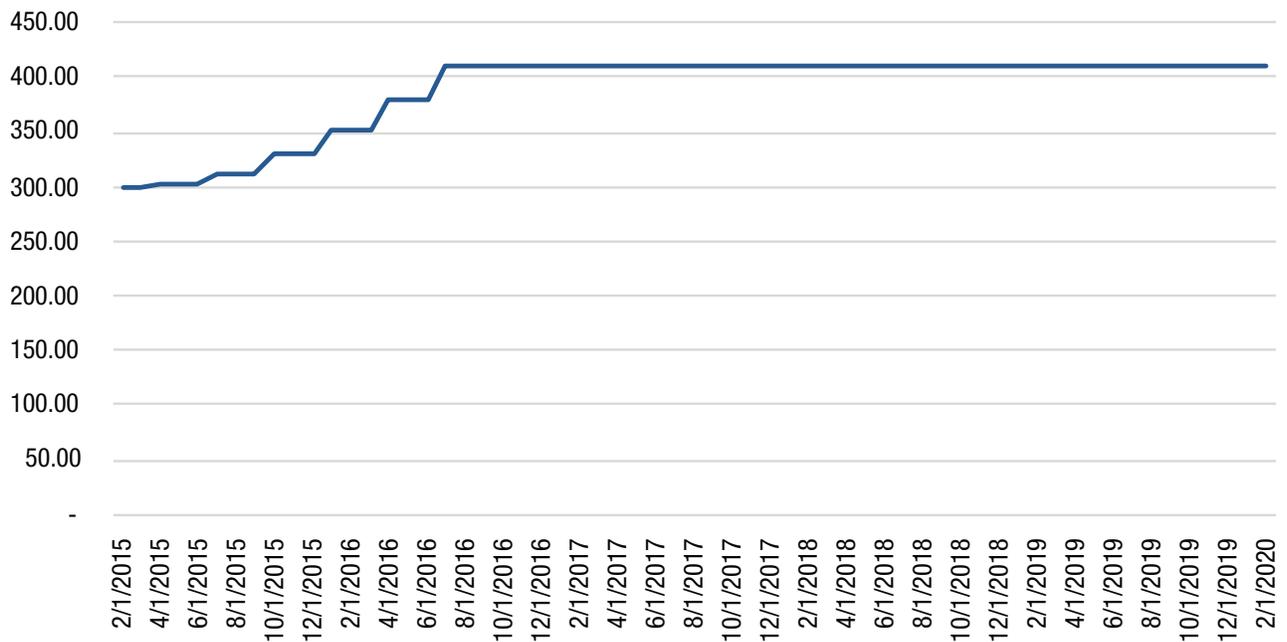
**FIGURE 2. Avastin/Mvasi (25 mg/ml)**



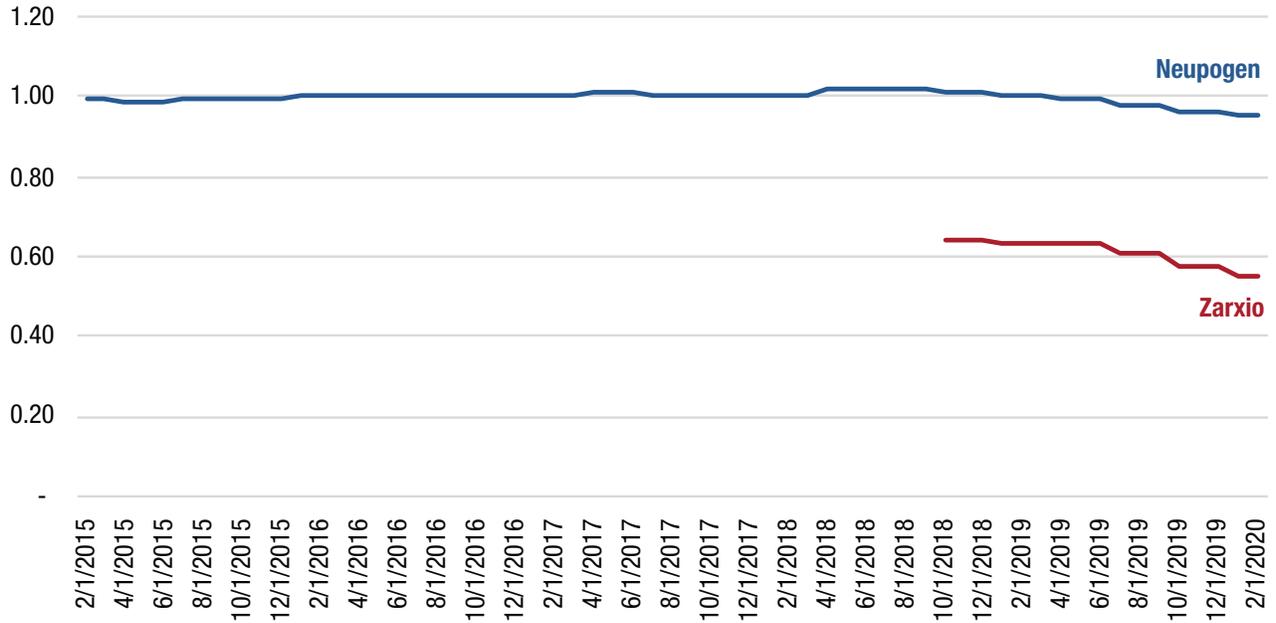
**FIGURE 3. Epogen/Procrit/Retacrit (2,000 unit/ml)**



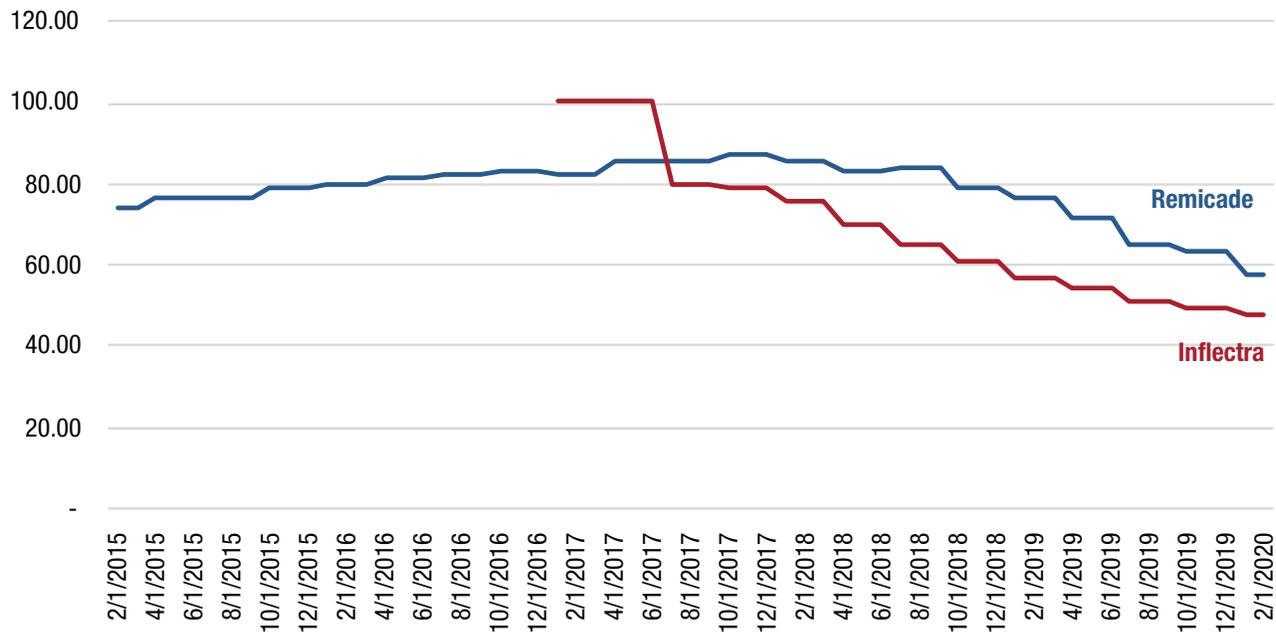
**FIGURE 4. Enbrel (25 mg/ml)**



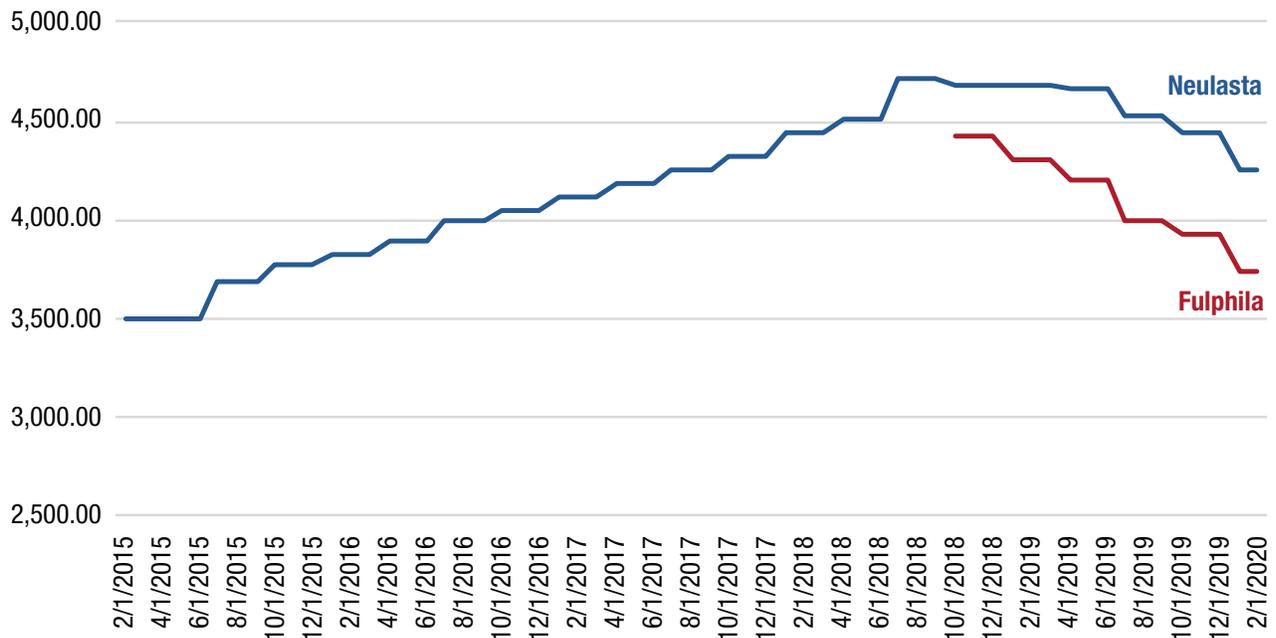
**FIGURE 5. Neupogen/Zarxio (480 mcg/0.8ml)**



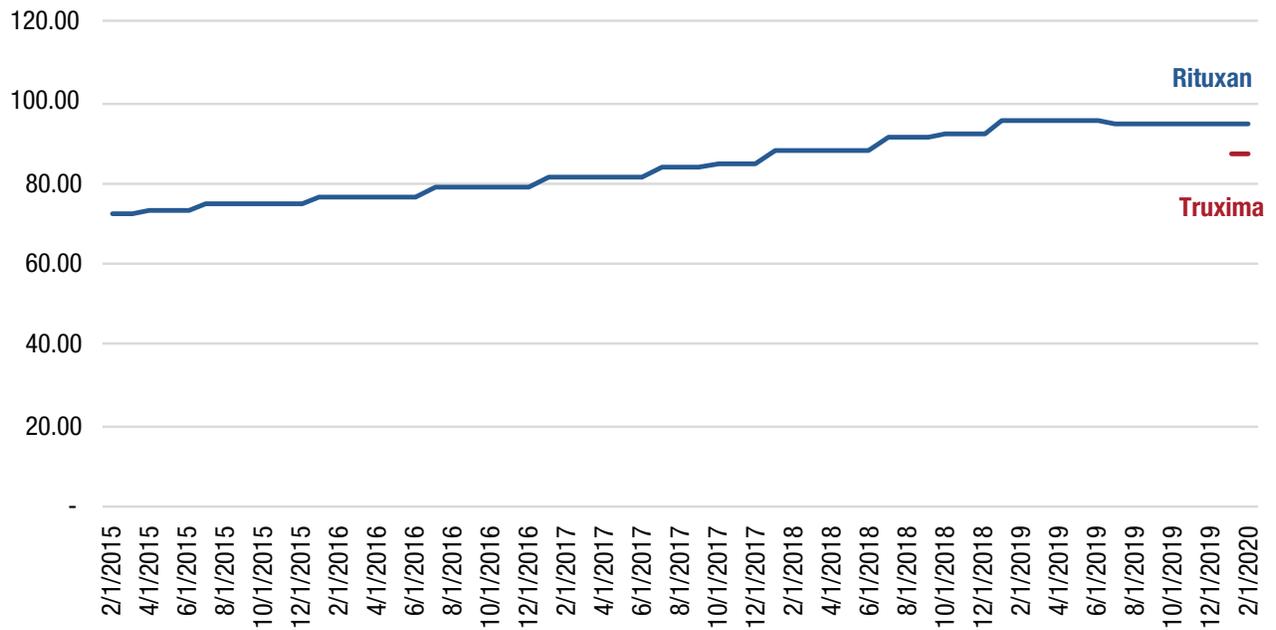
**FIGURE 6. Remicade/Inflectra (100 mg)**



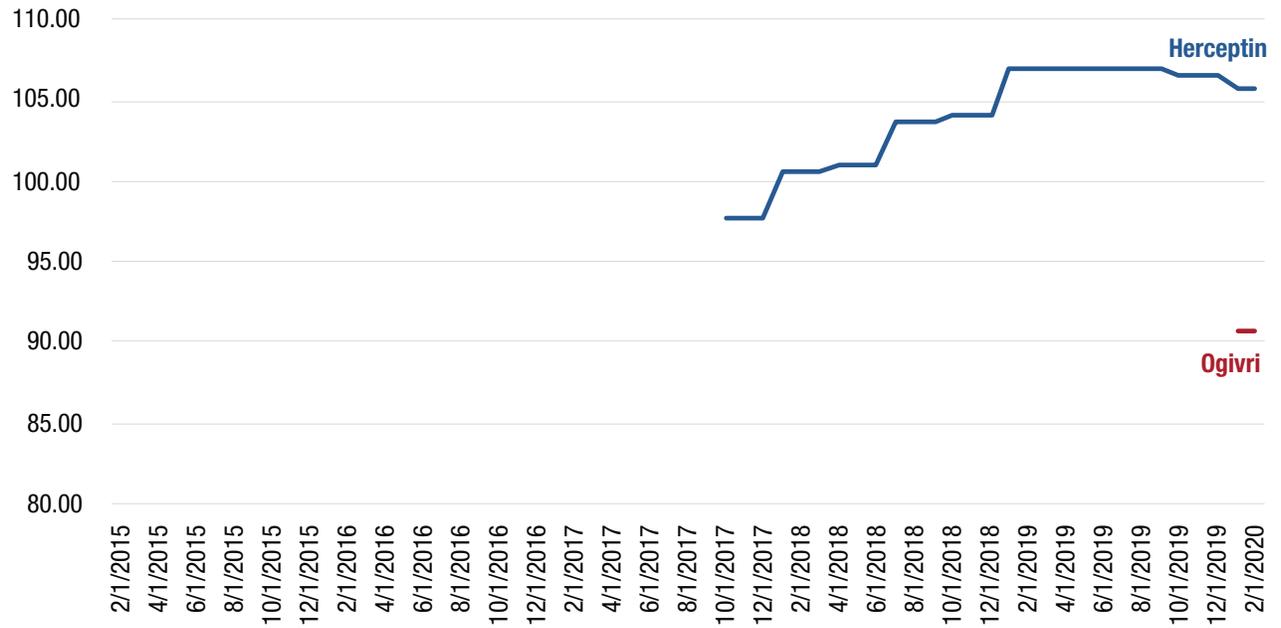
**FIGURE 7. Neulasta/Fulphila (6 mg/0.6ml)**



**FIGURE 8. Rituxan/Truxima (10 mg/ml)**



**FIGURE 9. Herceptin/Ogivri (10 mg)**



## Endnotes

- 1 (2019) “Medicine Use and Spending in the U.S.: A review of 2018 and outlook to 2023” *IQVIA Institute*, May.
- 2 Sawyer B and Claxton G (2019) “How do health expenditures vary across the population?” *Peterson-KFF Health System Tracker* January 16; <https://www.healthsystemtracker.org/chart-collection/health-expenditures-vary-across-population/#item-start>.
- 3 Claxton G and Rae M (2019) “Employer Health Benefits Annual Survey: 2019” *Kaiser Family Foundation*; <http://files.kff.org/attachment/Report-Employer-Health-Benefits-Annual-Survey-2019>.
- 4 Ibid.
- 5 Norris L (2020) “Is Original Medicare coverage enough? If your income is high or very low – or you’re feeling lucky – you might be able to rely on traditional Medicare. Here’s why most people don’t.” *Medicare Resources*, January 10; <https://www.medicareresources.org/medicare-benefits/is-original-medicare-coverage-enough/>.
- 6 Boomer Benefits: <https://boomerbenefits.com/medicare-supplemental-insurance/medigap-comparison-chart/>.
- 7 Based on the plans listed on Medicare.gov, the co-insurance rates on select plans ranged between 0 percent (with a \$47 co-pay) to not being covered. A 20 percent co-insurance was an oft-used co-insurance rate.
- 8 (2019) “Medicine Use and Spending in the U.S.: A review of 2018 and outlook to 2023” *IQVIA Institute*, May.
- 9 Winegarden W (2019) “The Biosimilar Opportunity: A State Breakdown” *Pacific Research Institute*, October; [https://www.pacificresearch.org/wp-content/uploads/2019/10/BiosimilarSavings\\_web.pdf](https://www.pacificresearch.org/wp-content/uploads/2019/10/BiosimilarSavings_web.pdf).
- 10 According to Medical News Today, the average weight for a male in the U.S. is 197.6 pounds and the average weight for a female in the U.S. is 170.6 pounds; <https://www.medicalnewstoday.com/articles/320917>.
- 11 See: Medicare Part D Drug Spending and Utilization, Calendar Years 2014 – 2018.
- 12 See: Payment Allowance Limits for Medicare Part B Drugs Effective January 1, 2020 through March 31, 2020.
- 13 Claxton G and Rae M (2019) “Employer Health Benefits Annual Survey: 2019” *Kaiser Family Foundation*; <http://files.kff.org/attachment/Report-Employer-Health-Benefits-Annual-Survey-2019>.

## About the Author

### Wayne Winegarden, Ph.D.

Wayne H. Winegarden, Ph.D. is a Senior Fellow in Business and Economics at the Pacific Research Institute and director of PRI's Center for Medical Economics and Innovation. He is also the Principal of Capitol Economic Advisors.

Dr. Winegarden has 25 years of business, economic, and policy experience with an expertise in applying quantitative and macroeconomic analyses to create greater insights on corporate strategy, public policy, and strategic planning. He advises clients on the economic, business, and investment implications from changes in broader macroeconomic trends and government policies. Clients have included Fortune 500 companies, financial organizations, small businesses, state legislative leaders, political candidates and trade associations.

Dr. Winegarden's columns have been published in the *Wall Street Journal*, *Chicago Tribune*, *Investor's Business Daily*, *Forbes.com*, and *Townhall.com*. He was previously economics faculty at Marymount University, has testified before the U.S. Congress, and is asked to present his research findings at policy conferences and meetings. Previously, Dr. Winegarden worked as a business economist in Hong Kong and New York City; and a policy economist for policy and trade associations in Washington D.C. Dr. Winegarden received his Ph.D. in Economics from George Mason University.

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