MAGELLAN RX MANAGEMENT

MEDICAL PHARMACY TREND REPORT™

2017 EIGHTH EDITION

Magellan Rx MANAGEMENT℠

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Introduction

Magellan Rx Management is pleased to present the eighth edition of our Medical Pharmacy Trend Report™, the only detailed source analyzing medical benefit drug claims for benchmarks and trends, along with current medical benefit drug management approaches.

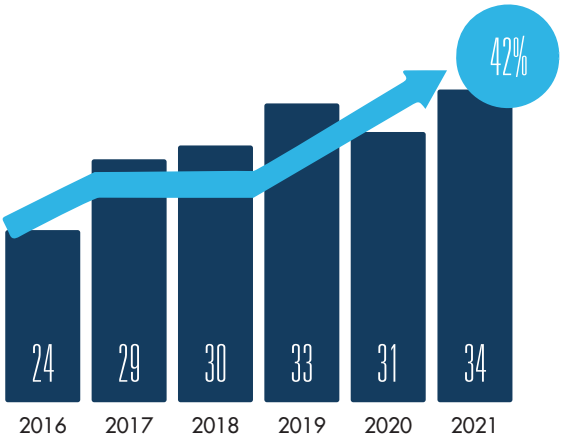
It was a dynamic year for provider-administered drugs covered on the medical benefit. First, we heard ethical debates over coverage of tremendously expensive orphan drugs approved by the U.S. Food and Drug Administration (FDA) without full data available to prove efficacy and safety. Second, one of the top spend medical benefit drugs, Remicade, had three FDA-approved biosimilars with two marketed. Lastly, we saw the approval of the first two gene therapies, Kymriah and Yescarta, offering new curative treatment modalities for cancer patients. Shortly thereafter, Luxturna was approved for the treatment of inherited vision loss. All three gene therapies were introduced at a price tag leaving payers wondering when their maximum cost threshold will be surpassed.

Looking forward, the number of billion-dollar drugs on the medical benefit is expected to increase by 42% from 24 drugs in 2016 to 34 drugs in 2021 and counting. For oncology immunotherapy specifically, per-member-per-month (PMPM) costs are set to increase 231% from $1.11 to $3.67 over the same period. This is just a sliver of the impact and expected cost increases to the medical benefit over the next five years.

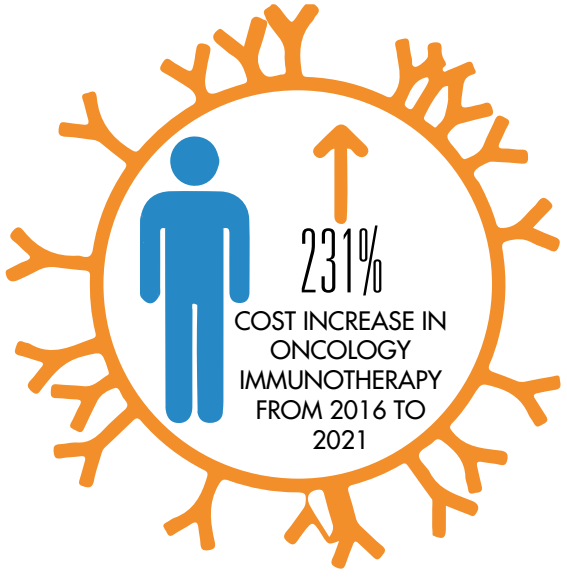
Now more than ever, health plans must engage in new, innovative, and targeted cost-containment strategies to control the growth of specialty drugs billed to the medical benefit (also referred to as medical pharmacy). Over the last eight years, payers have turned to Magellan Rx Management's (MRx) Medical Pharmacy Trend Reports to research the latest trends as well as current and evolving management strategies. It is evident that plans have succeeded in managing utilization through tactics in the report; even so, unit costs continue to be the driving factor of medical benefit trends.

Each year, we bring our readers new and exciting information as we create an increasingly robust and comprehensive report on medical benefit drug trends. This year, enhancements to the report include:

- An updated approach to weighting survey data responses by lives based on each individual health plan's specific lines of business mix.
- A new analysis of the major components contributing to and impacting medical benefit drug costs.
- A more streamlined category profiles section showing an informative snapshot of medical benefit drug therapy classes with the greatest impact on spend.



Number of Billion Dollar Medical Benefit Drugs



- An in-depth look at the biosimilar landscape and the impact to medical benefit categories with current and forthcoming biosimilars.

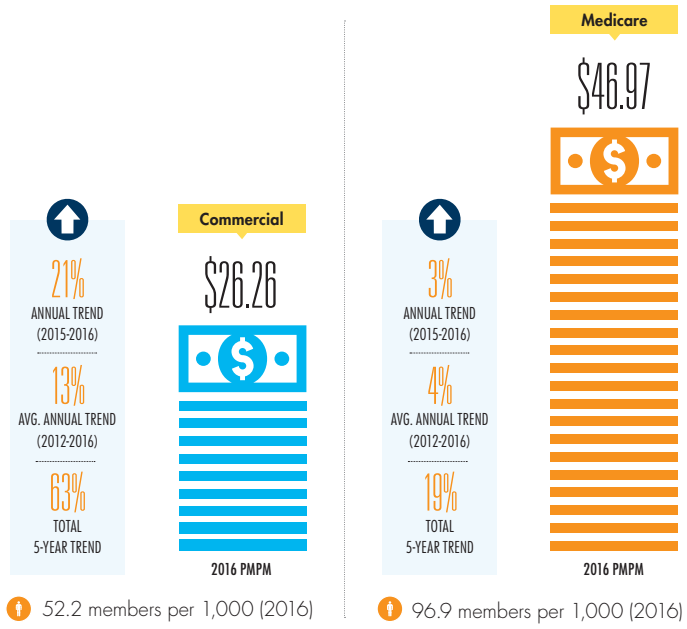
We are confident you will find our trend report a useful resource and reference. The topics provide valuable insight on medical pharmacy dynamics, along with key legislative outcomes and management trends affecting the medical drug benefit. This trend report is another way Magellan Rx Management gives you the tools to make smarter decisions every day for managing medical pharmacy agents.

You can download the full report at MagellanRx.com

Executive Summary

KEY FINDINGS ON THE CURRENT STATE OF MEDICAL BENEFIT DRUGS INCLUDE:

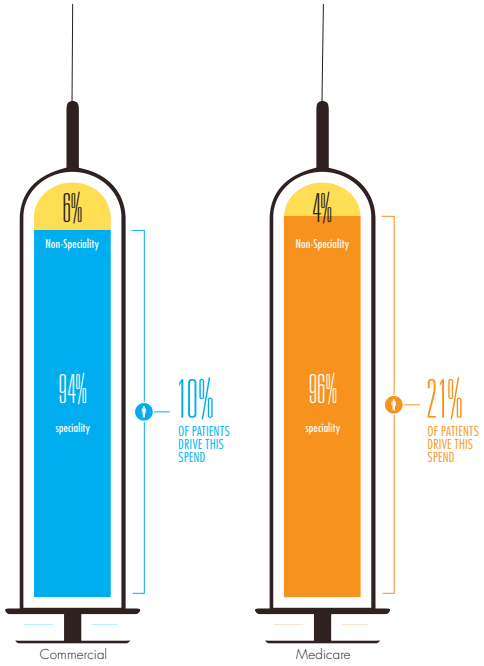
1 PMPM TREND



52.2 members per 1,000 (2016)

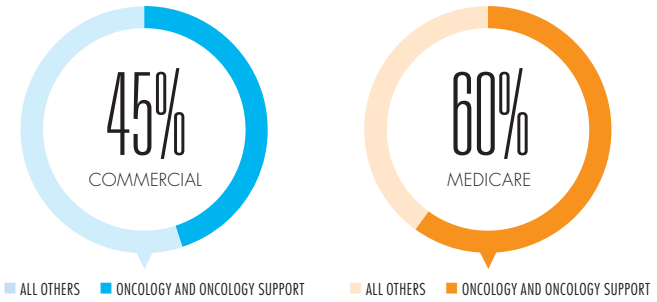
96.9 members per 1,000 (2016)

2 2016 DRUG SPEND



3 CATEGORY TRENDS

2016



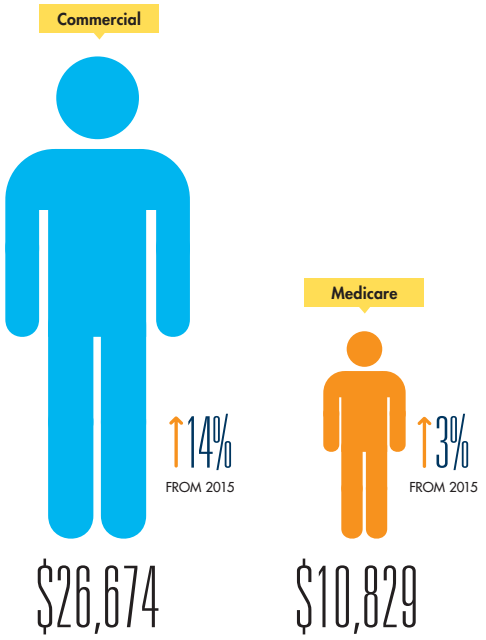
Oncology and oncology support accounted for **$11.78** (45%) of the medical benefit drug PMPM spend.

Oncology and oncology support accounted for **$28.05** (60%) of the medical benefit drug PMPM spend.

8 OF THE TOP 20

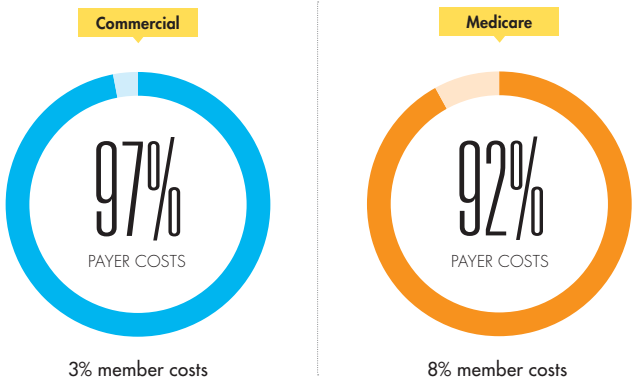
commercial disease states or drug categories have **more than doubled** in PMPM spend between 2012 and 2016

4 2016 TOP 25 DRUGS ANNUAL COST PER PATIENT



Top 25 drugs **represented 62%** and **69%** of total commercial and Medicare PMPMs, respectively.

5 2016 MEMBER VS. PAYER COSTS



6 MARKET IMPACT OF NEW DRUGS

DRUG NAME	COMMERCIAL RANK	MEDICARE RANK
Opdivo	8	3
Entyvio	13	68
Keytruda	39	21

7 2017 INNOVATIVE MANAGEMENT STRATEGIES

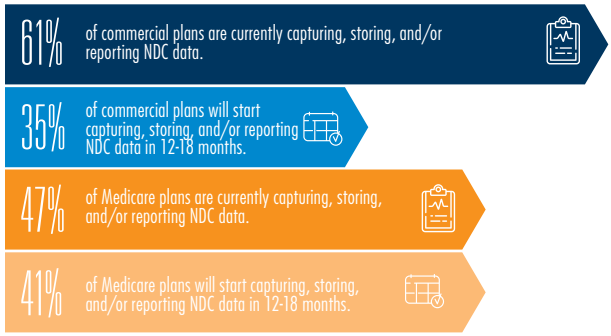
8 2017 SITE OF SERVICE PROGRAM

of payers are now using a site of service program

24%↑ SINCE 2012

9 2017 NDC DATA COLLECTION

More than 94% of plans will be capturing, storing, and reporting national drug code (NDC) information by 2019



Medical Pharmacy Overview

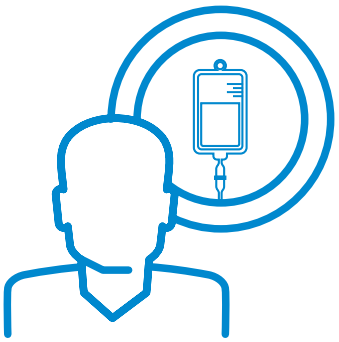
In 2016, approximately 5% (52 per 1,000) of commercial health plan members and 10% (97 per 1,000) of Medicare Advantage members had a medical pharmacy claim. These medical benefit claims included specialty medications and non-specialty medications. For commercial, 94% of medical benefit drug costs were for specialty agents and 6% were for non-specialty medications. For Medicare, 96% of medical benefit drug costs were for specialty medications versus 4% for non-specialty drugs.

Across all outpatient sites of service, these claims equated to $26.26 PMPM in commercial, a 21% increase from $21.65 in 2015. Medicare PMPM increased to $46.97, a 3% increase from $45.69 in 2015. The majority of the medical benefit drug spend was in the hospital outpatient setting in commercial, accounting for $13.38 PMPM, and in the physician office for Medicare, accounting for $24.24 PMPM (**see figure 1**).

The commercial hospital outpatient setting not only housed the majority of medical benefit spend, but also had more than double (106% to 117% higher) the costs as the physician office when indexed to national benchmarks, such as average sales price (ASP), average wholesale price (AWP), and wholesale acquisition cost (WAC) (**see figure 2**). This dynamic is the opposite in Medicare, where the majority of spend is in the physician office and drug costs are 13% to 16% lower than the hospital outpatient setting.

From 2012 through 2016, the commercial medical benefit drug spend increased by 63% from $16.16 PMPM to $26.26 PMPM; and the Medicare medical benefit increased 19% from $39.64 PMPM to $46.97 PMPM. During this same period, commercial members per 1,000 increased 26% from 41.6 to 52.2, while Medicare only increased 6%, from 91.4 to 96.9 patients per 1,000 members.

2016 Percentage of Members with a Medical Pharmacy Claim



5%
Commercial Members

10%
Medicare Members

2016 Members per Thousand with a Medical Pharmacy Claim

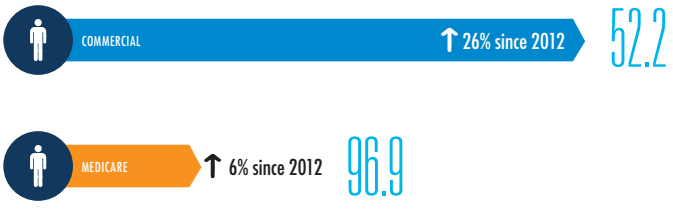


FIGURE 1

Medical Pharmacy Allowed Amount PMPM by LOB by Site of Service

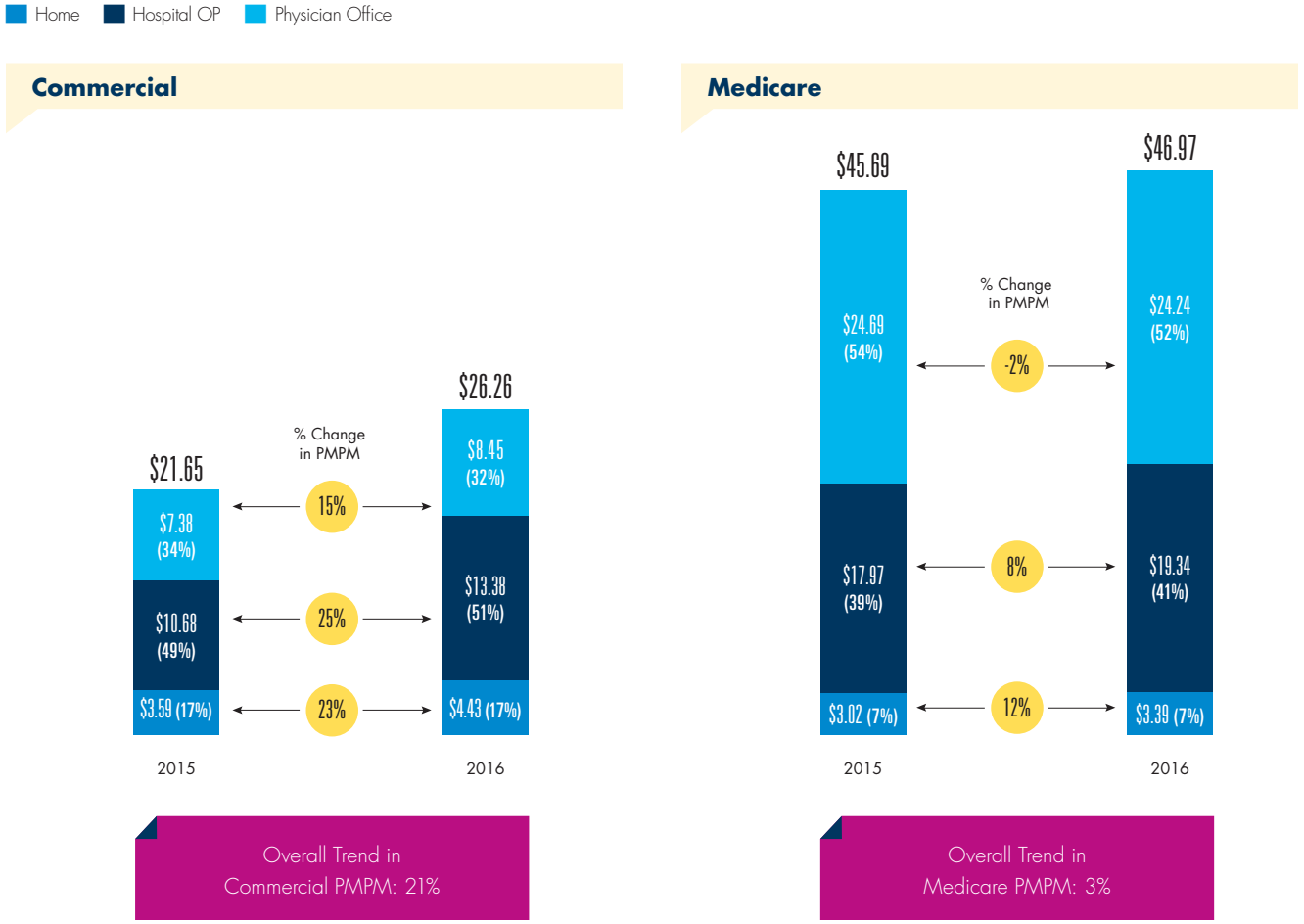
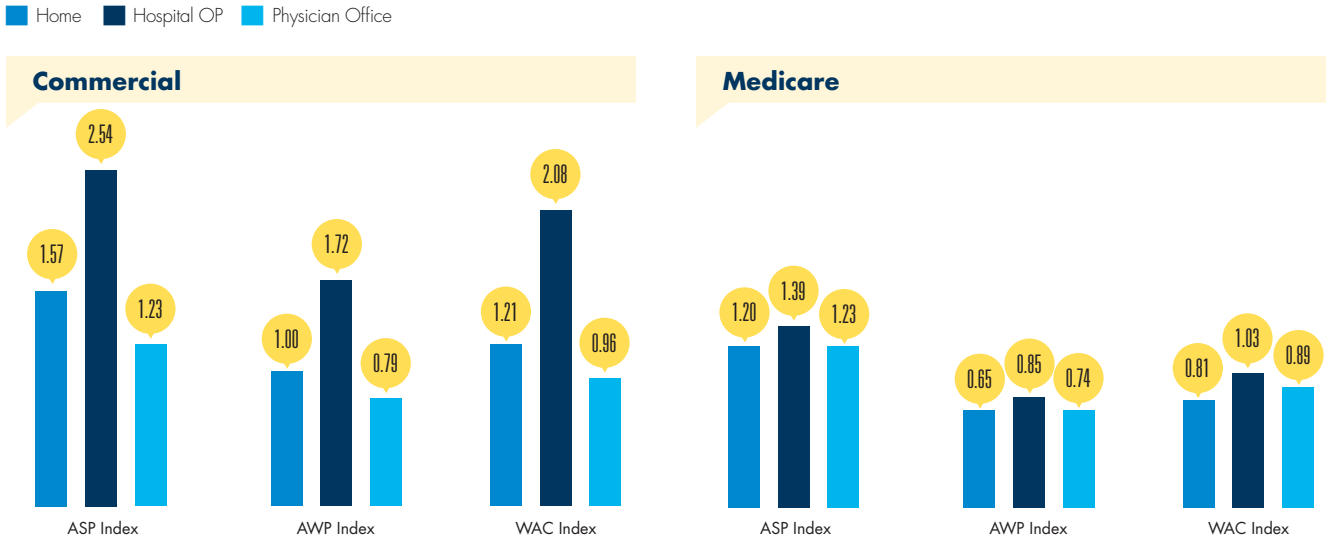


FIGURE 2

2016 Medical Pharmacy Costs Indexed to ASP, AWP, and WAC by Site of Service



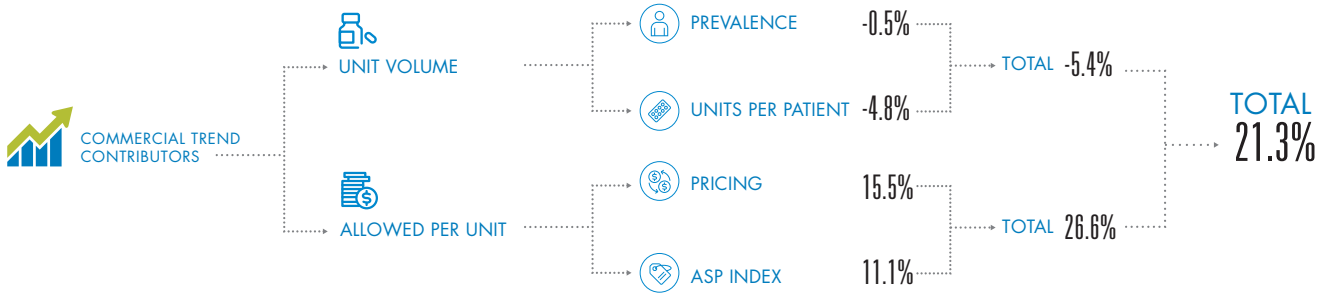
Medical Pharmacy Trend Drivers

In 2016, commercial and Medicare medical benefit PMPM trends were driven primarily by allowed per unit cost increases which included an inflation rate (pricing increases) of 15.5% in commercial and 6.0% in Medicare. These numbers are truly remarkable when compared to the consumer inflation rate of 2.0% in 2016 and an average annual rate of 1.9% over the last 5 years[1]. The other contributor of unit cost increases was health plan provider reimbursement (measured by indexing to ASP). These increases were counterbalanced by decreases in overall unit volume, analyzed through prevalence and units per patient, which decreased from 2015 to 2016 for both lines of business (**see figure 3**).

This trend is obvious amongst specific medical specialty drug categories where the cost has doubled or more for eight of the top 20 drug categories over the last 5 years. Psoriasis/psoriatic arthritis in the biologic drugs for autoimmune disorders (BDAID) category more than tripled in cost (230%) from $0.17 PMPM in 2012 to $0.57 in 2016 (**see figure 4**).

FIGURE 3

2016 Commercial and Medicare Trend Contributors



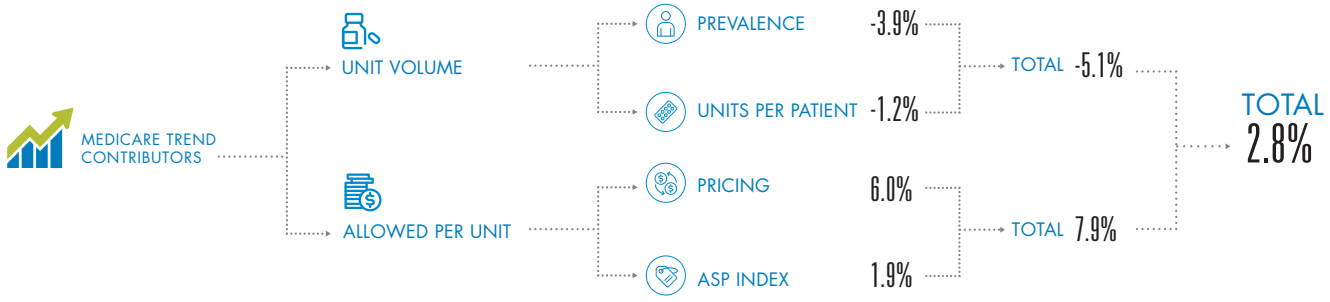
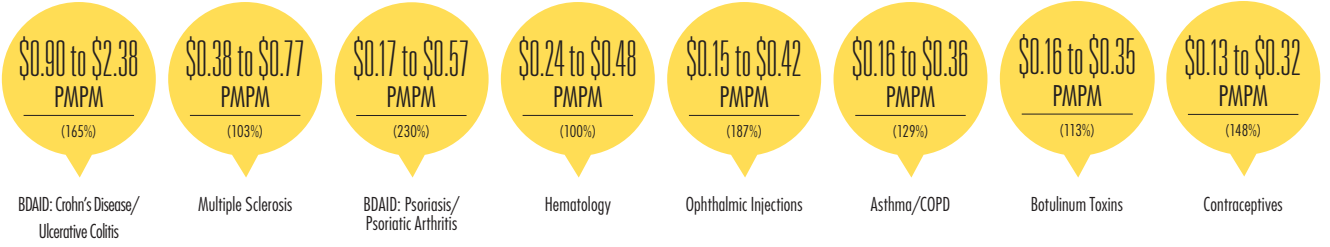


FIGURE 4

Top Commercial Drug Categories More than Doubling in Spend 2012-2016



1. Bureau of Labor Statistics: https://data.bls.gov/timeseries/CUUR0000SA0L1E?output_view=pct_12mths. Accessed January 2018.

Medical Pharmacy Category Landscape

For commercial, in 2016, across 51 medical benefit categories, oncology and oncology support accounted for 45% of commercial PMPM or $11.78 PMPM. Oncology alone accounted for 35% or $9.17 PMPM, and oncology support accounted for 10% or $2.62 PMPM (**see figure 5**).

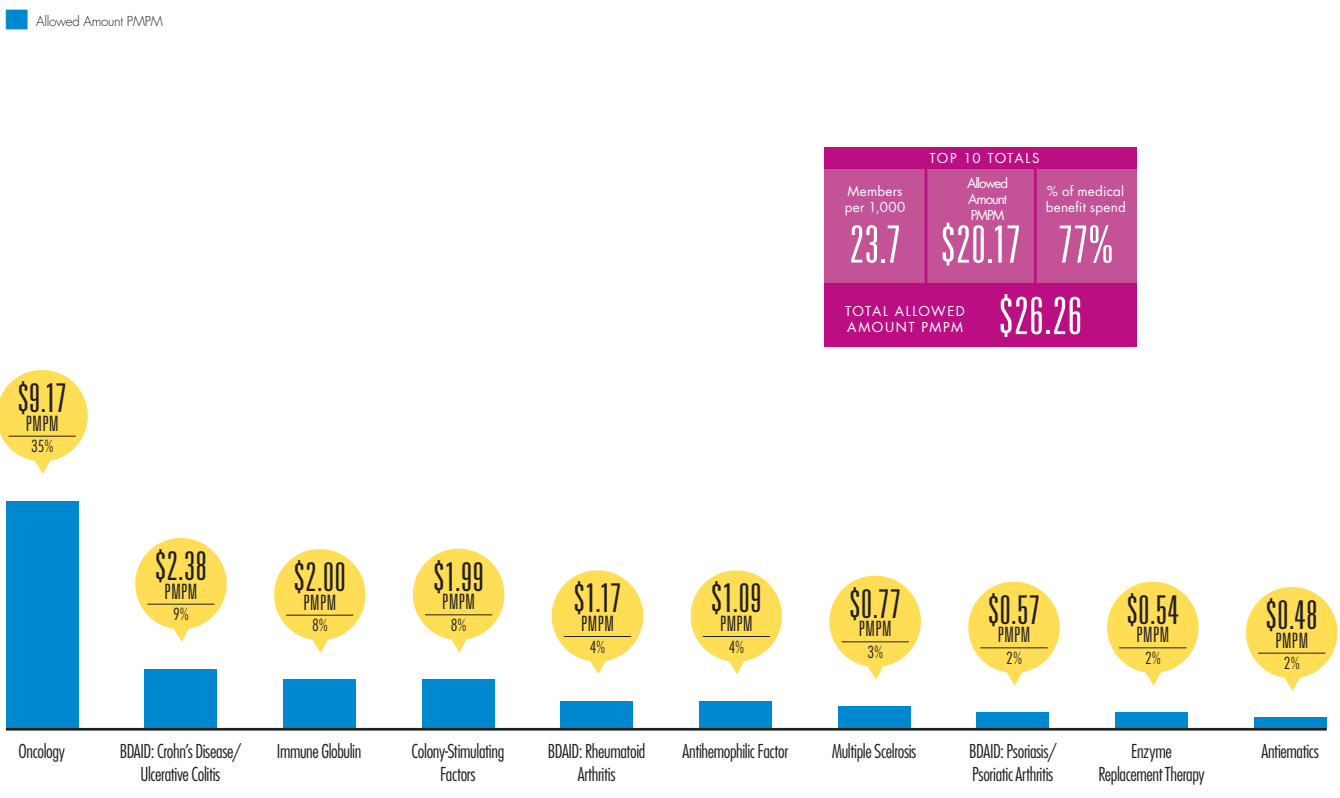
- The BDAID category had the largest trend in 2016 for commercial at 48% and in total accounted for 18% of PMPM or $4.62. The highest spend BDAID category, Crohn's disease/ulcerative colitis, accounted for $2.38 PMPM or 9% on its own. BDAID: psoriasis/psoriatic arthritis saw its PMPM almost double from $0.29 in 2015 to $0.57 in 2016.
- Medical benefit spend for multiple sclerosis increased 48% in 2016 due to recent drug entrants and expanded provider-administered treatment options.

For Medicare, oncology and oncology support contributed more than half of spend at 60% or $28.05 PMPM (**see figure 6**).

- This year, oncology had the highest trend in Medicare at 11%.
- Last year, ophthalmic injections was the highest trending category at 39%; this year, spend in the category steadied and increased by only 2%.
- For the first time, in 2016, colony-stimulating factors experienced a 9% decrease in PMPM, led by reduced utilization of Neulasta. Over the last year, there has been a decline in the use of myelosuppressive chemotherapy regimens due to the introduction of immunotherapy agents.

FIGURE 5

2016 Commercial PMPM of Top 10 Disease States or Drug Categories by Spend

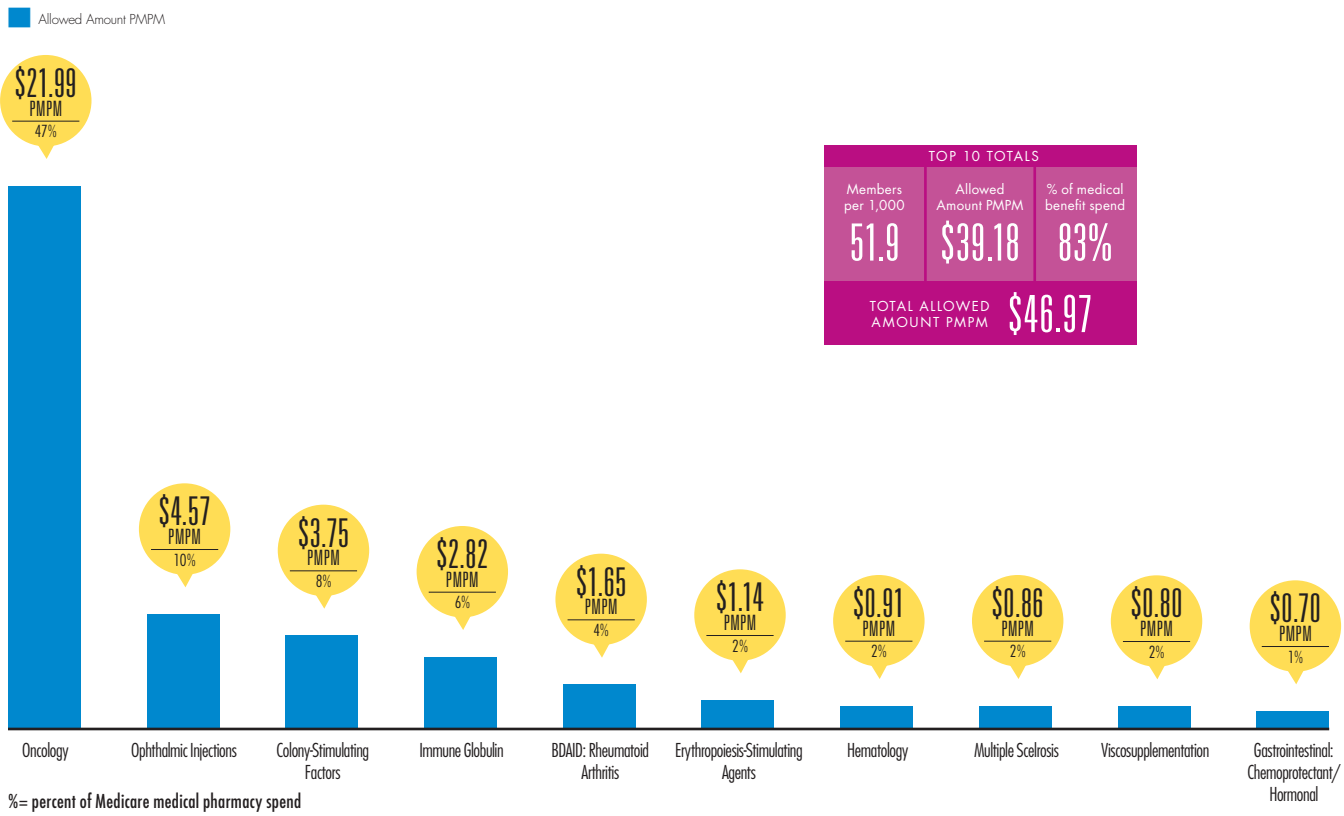


%= percent of Medicare medical pharmacy spend

Please note that due to rounding, some column totals do not add up accurately.

FIGURE 6

2016 Medicare PMPM of Top 10 Disease States or Drug Categories by Spend



%= percent of Medicare medical pharmacy spend

Please note that due to rounding, some column totals do not add up accurately.

Medical Pharmacy Drug Landscape

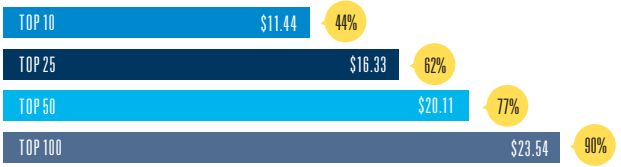
Of the 925 Healthcare Common Procedure Coding System (HCPCS) codes, the top 50 drugs by spend drove 77% of the cost in commercial and 85% of the cost in Medicare (**see figure 7**).

FIGURE 7

2016 Medical Pharmacy Percentage Spend for Top Drugs by LOB

Commercial

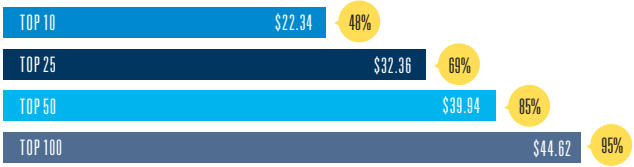
2016 % of total PMPM



Commercial top 25 medical benefit drugs equaled 62% of total PMPM

Medicare

2016 % of total PMPM



Medicare top 25 medical benefit drugs equaled 69% of total PMPM

Top 10 Commercial and Medicare Drugs Highlights

- In 2016, Opdivo made its debut on the medical benefit as the eighth highest spend drug in commercial and the third highest spend drug in Medicare. Keytruda also made an impact in 2016 as the 21st highest spend drug in Medicare (**see figures 8 and 9, as well as A8 and A9 in appendix**).
- Further Magellan analysis shows that providers bill Neulasta the same day as chemotherapy on 47% of claims, indicating the uptake of the Onpro™ device due to convenience of administration[2].
- The increase in cost per patient on Tysabri is noteworthy since it is administered as a fixed dose (not based on patient weight) and has a fixed frequency of 28 days. Both ASP and AWP trended 10% in 2016.
- Commercial top five drugs by spend remain the same as our first report in 2010, although the order has changed.
- Much of the decreases in Medicare were due to decreases in utilization.

FIGURE 8

2016 Top 10 Commercial Medical Benefit Drugs by Spend

RANK	HCPCS	BRAND	PMPM	% CHANGE 2015-2016	ANNUAL COST PER PATIENT	% CHANGE 2015-2016	MEMBERS PER 1,000	% CHANGE 2015-2016	ASP TREND	AWP TREND
1	J1745	Remicade	$2.81	26%	$37,413	18%	0.3	5%	3%	9%
2	J2505	Neulasta	$1.86	13%	$24,417	14%	0.3	2%	8%	10%
3	J9355	Herceptin	$1.26	19%	$53,397	15%	0.1	4%	6%	6%
4	J9310	Rituxan	$1.26	23%	$36,234	13%	0.2	11%	6%	7%
5	J9035	Avastin	$1.22	7%	$23,658	10%	0.2	-2%	4%	5%
6	J2323	Tysabri	$0.69	33%	$64,375	24%	0.04	7%	10%	10%
7	J1561	Gamunex-C/Gammaked	$0.65	6%	$59,910	8%	0.04	-9%	-13%	3%
8	J9299	Opdivo	$0.64	-	$59,632	-	0.05	-	3%	3%
9	J7192	Factor VIII (recombinant)	$0.53	13%	$202,074	12%	0.01	-6%	2%	0%
10	J1569	Gammagard Liquid	$0.52	-5%	$48,038	0%	0.04	-8%	5%	0%
Top 10 Totals/Averages			**$11.44**	**24%**	**$40,947**	**17%**	**1.2**	**6%**	**3%**	**5%**
All Medical Pharmacy Totals/Averages			**$26.26**	**21%**	**$2,068**	**17%**	**52.2**	**3%**	**-**	**-**

FIGURE 9

2016 Top 10 Medicare Medical Benefit Drugs by Spend

RANK	HCPCS	BRAND	PMPM	% CHANGE 2015-2016	ANNUAL COST PER PATIENT	% CHANGE 2015-2016	MEMBERS PER 1,000	% CHANGE 2015-2016	ASP TREND	AWP TREND
1	J2505	Neulasta	$3.50	-7%	$14,091	6%	1.0	-9%	8%	10%
2	J9310	Rituxan	$3.30	1%	$23,880	6%	0.8	-7%	6%	7%
3	J9299	Opdivo	$2.90	-	$43,000	-	0.4	-	3%	3%
4	J9035	Avastin	$2.43	-12%	$2,726	-28%	5.4	75%	4%	5%
5	J0178	Eylea	$2.12	5%	$9,917	10%	1.5	-6%	0%	0%
6	J2778	Lucentis	$2.02	-8%	$9,940	2%	1.4	-11%	-2%	0%
7	J0897	Xgeva/Prolia	$1.80	12%	$2,941	3%	2.7	-24%	7%	8%
8	J9355	Herceptin	$1.62	13%	$33,748	5%	0.3	8%	6%	6%
9	J1745	Remicade	$1.48	-17%	$21,225	2%	0.3	-15%	3%	9%
10	J9305	Alimta	$1.18	-20%	$24,895	-5%	0.3	-18%	3%	4%
Top 10 Totals/Averages			**$22.34**	**10%**	**$9,733**	**3%**	**10.1**	**11%**	**4%**	**5%**
All Medical Pharmacy Totals/Averages			**$46.97**	**3%**	**$2,078**	**5%**	**96.9**	**1%**	**-**	**-**

Please note that due to rounding, some column totals do not add up accurately.

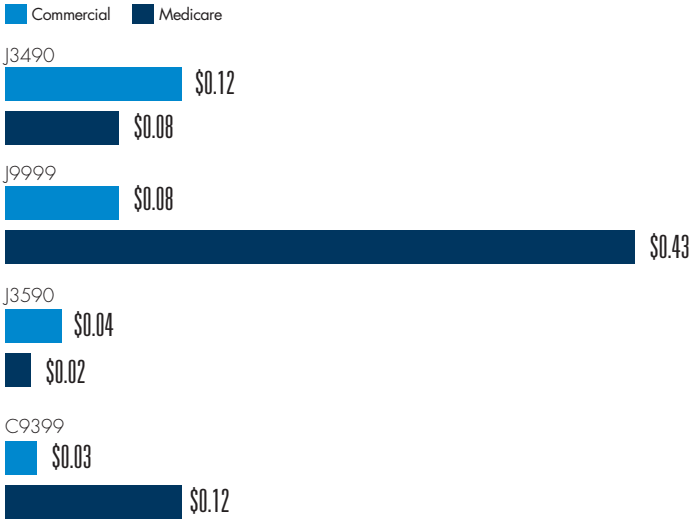
2. Magellan Internal Analysis 2017.

Unclassified Codes

As a combined category, unclassified codes ranked 18th in commercial and 13th in Medicare. Gattex (short bowel syndrome treatment) was associated with highest spend commercial unclassified code J3490. In Medicare, new oncology treatments under unclassified code J9999 had the highest combined PMPM (**see figure 10**).

FIGURE 10

Unclassified Code and Sample Drugs by Allowed Amount PMPM



HCPCS	Sample Unclassified Drugs
J3490	Gattex, sufentanil
J9999	Bendeka, Darzalex, Empliciti, Onivyde, Portrazza, Tecentriq, Yondelis
J3590	Nucala, Stelara
C9399	Darzalex, Empliciti, Yondelis

Highest Cost Drugs

Another way to view medical pharmacy trends is through analysis of highest cost medical benefit drugs per patient. The top 10 costliest drugs in commercial averaged $492,838 per patient per year (PPPY). In Medicare, the top 10 costliest drugs averaged $404,330 PPPY, a 50% increase from 2015 (**see figures 11 and 12**).

- These drugs affected a total of 0.14 patients per 1,000 in commercial and 0.35 patients per 1,000 in Medicare. Even so, patients treated with these agents average more than $4 million in medical benefit drug costs over a 10-year period.
- The highest cost agents represent drugs used to treat inborn errors of metabolism, hemophilia, blood disorders, hereditary angioedema, cancer, and pulmonary arterial hypertension.

10 Highest Cost Medical Benefit Drugs Average Annual Cost per Patient:

COMMERCIAL

$492,838

MEDICARE

$404,330

FIGURE 11

10 Highest Cost Commercial Medical Benefit Drugs

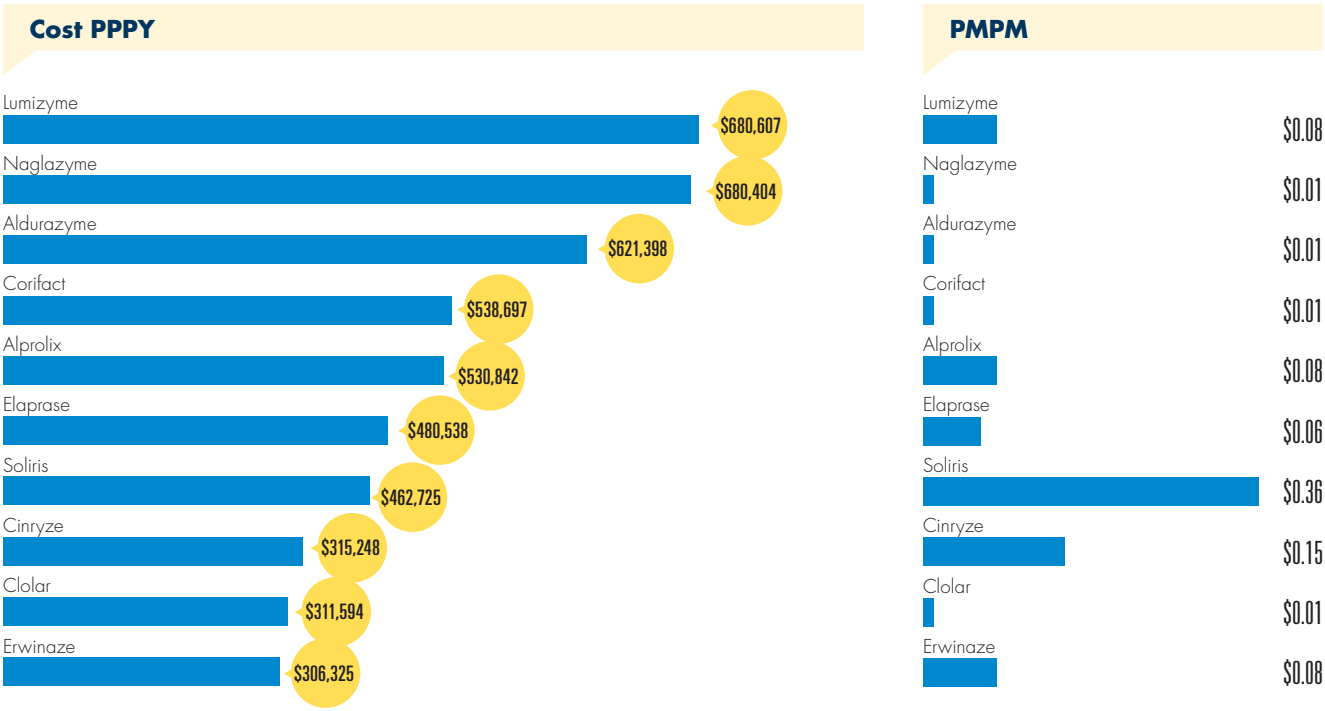
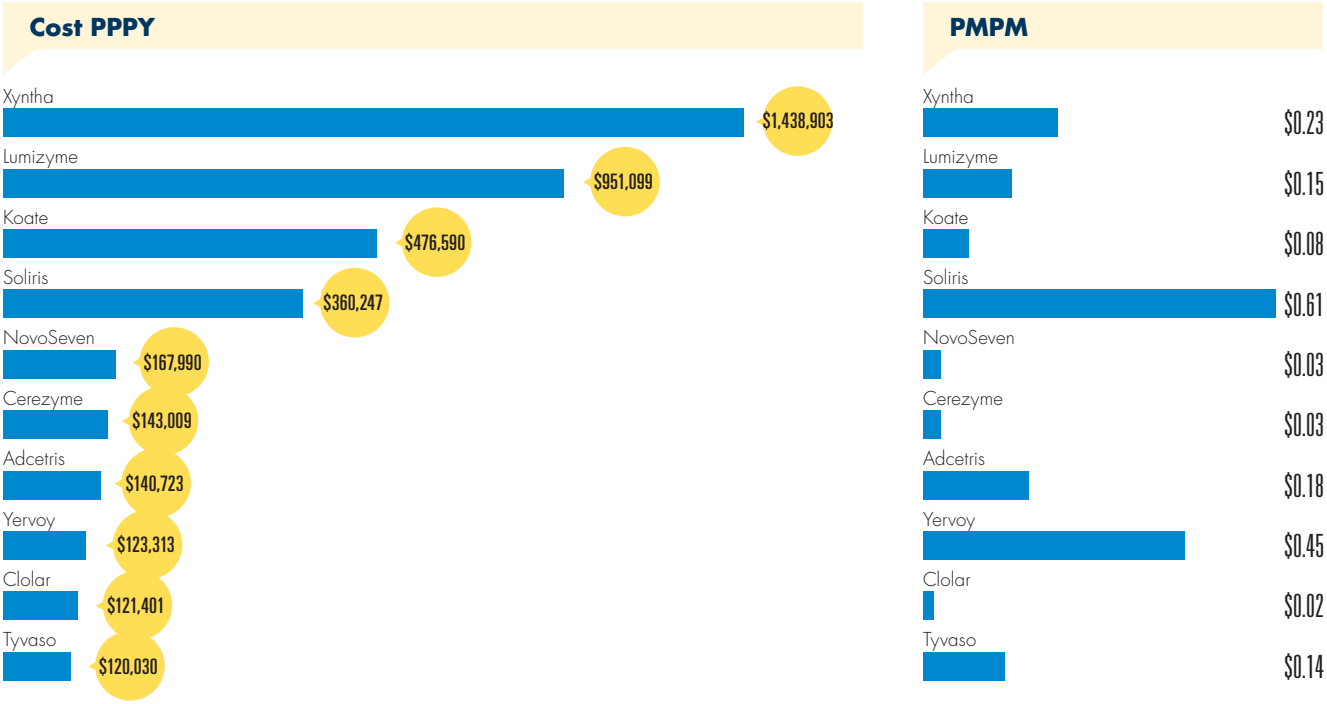


FIGURE 12

10 Highest Cost Medicare Medical Benefit Drugs



Medical Pharmacy Categories

KEY Physician Hospital OP Home

Antihemophilic Factors

Increasingly, payers have been looking at product preferencing opportunities on the medical benefit for antihemophilic factors due to the availability of short-acting and, now, more expensive, long-acting agents. Based on 2016 market share for Factor VIII products only, the impact of long-acting agents has been minimal to none. There is wide variability in annual cost per patient among the products and year over year in Commercial and Medicare based on patient mix (**see figures 14 and 15**).

FIGURE 13

Commercial Antihemophilic Factor Drugs in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
9	J7192	Factor VIII (recombinant)	$9,686	$78,235	$18,466	$1	$3	$3	6%	22%	72%

2016 BY THE NUMBERS

2015-2016 CATEGORY TREND

11% Commercial

2% Medicare

MEMBERS PER 1,000

0.06 Commercial

0.02 Medicare

CATEGORY PMPM

$1.09 Commercial

$0.43 Medicare

% OF MEDICAL RX SPEND

4% Commercial

1% Medicare

AVERAGE COST PER CLAIM

$20,960 Commercial

$25,375 Medicare

HIGHEST SOS UTILIZATION BY MEMBERS

75% Commercial

64% Medicare

FIGURE 14

Commercial Antihemophilic Factor VIII Market Share, Spend, and Cost per Patient

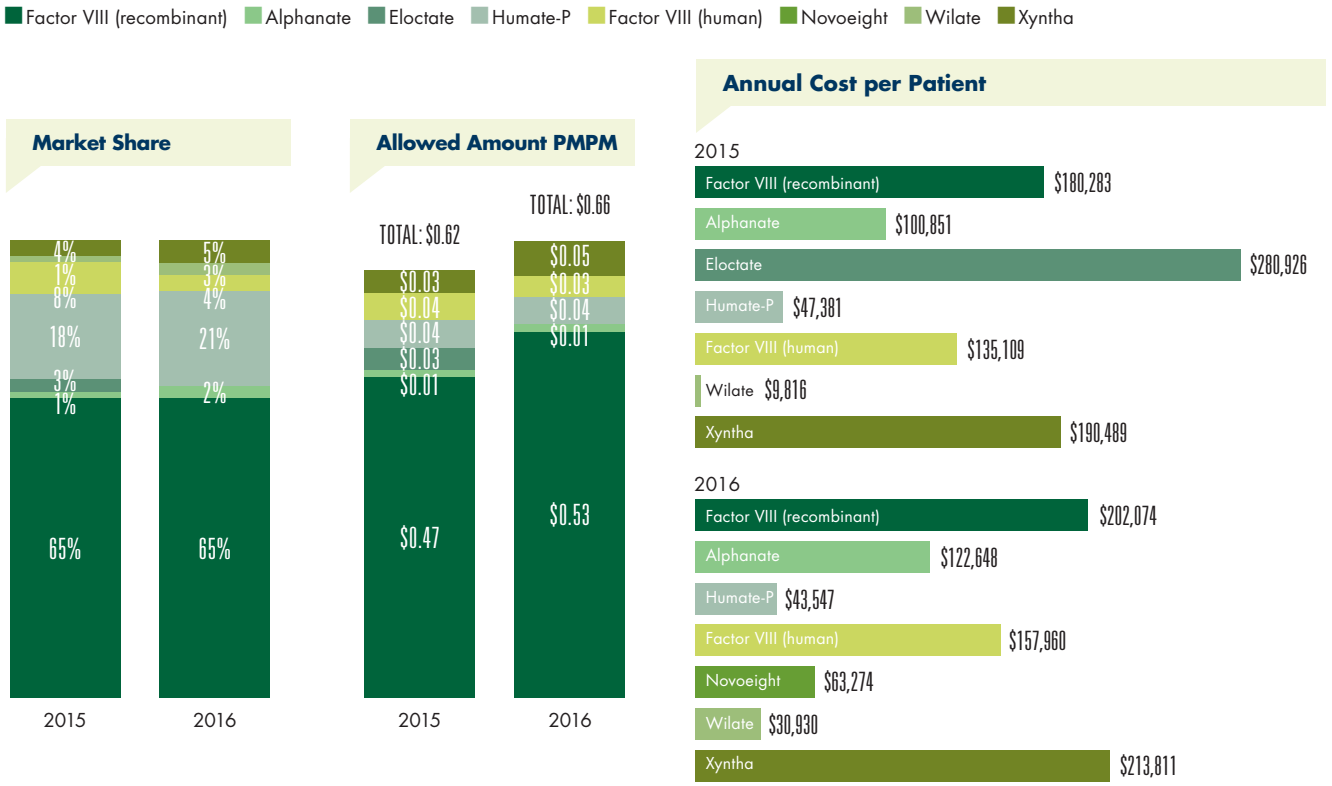
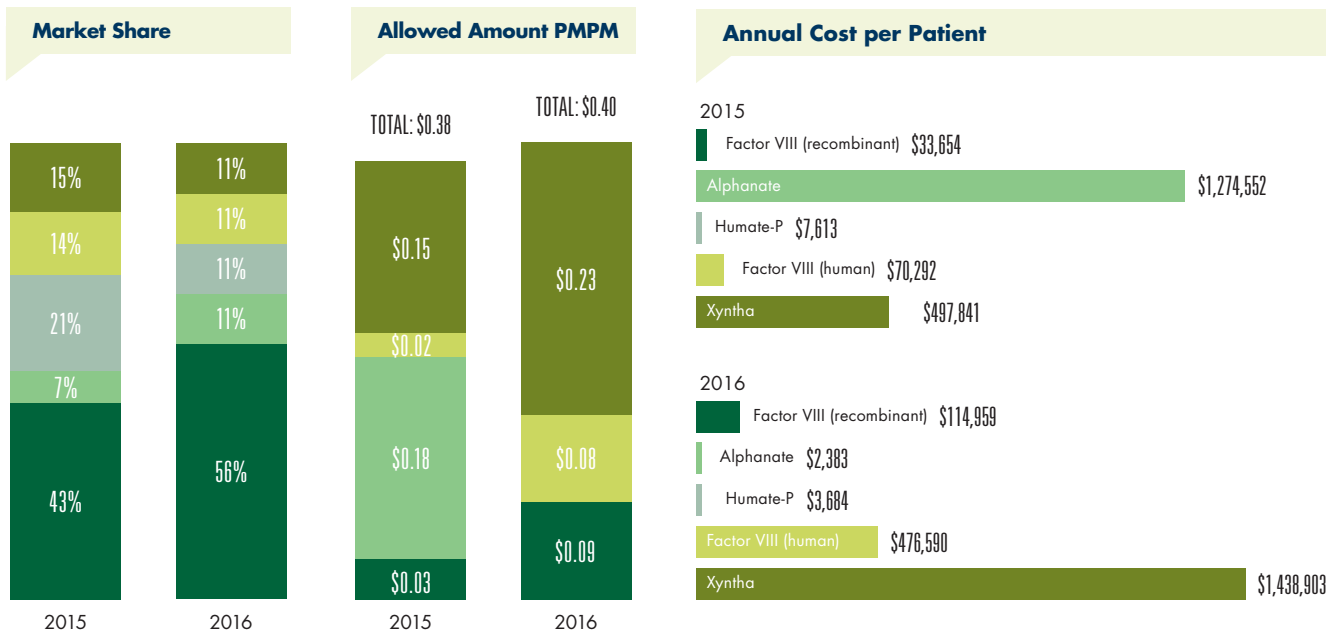


FIGURE 15

Medicare Antihemophilic Factor VIII Market Share, Spend, and Cost per Patient



2016 BY THE NUMBERS

2015-2016 CATEGORY TREND

48% Commercial

-8% Medicare

CATEGORY PMPM

$4.62 Commercial

$2.82 Medicare

% OF MEDICAL RX SPEND

18% Commercial

6% Medicare

MEMBERS PER 1,000

1.4 Commercial

1.6 Medicare

AVERAGE COST PER CLAIM

$6,185 Commercial

$3,703 Medicare

HIGHEST SOS UTILIZATION BY MEMBERS

57% Commercial

60% Medicare

Biologic Drugs for Autoimmune Disorders

BDAIDs' leap in commercial trend was led by gastrointestinal (GI) indications, Crohn's disease and ulcerative colitis, accounting for 52% of the BDAID category commercial PMPM. Although Medicare saw a negative trend, Crohn's was the only disease state to see an increase in PMPM from $0.60 in 2015 to $0.67 in 2016.

- Entyvio added $0.41 to overall commercial category spend. It did not receive a permanent HCPCS code until January 2016, so this was the first year we were able to illustrate its impact.
- Stelara contributed to the rise in GI spend after its approval in September 2016 for the treatment of moderate to severely active Crohn's disease. It continues to increase in utilization and spend in its first approved indication, psoriasis (**see figures 18, 19, 22, and 23**).

Please note: Stelara's 2016 annual cost per patient for Crohn's disease is a reflection of actual claims experience. Although providers were instructed to bill the loading dose IV formulation with unclassified code J3590, some providers still billed the subcutaneous code, J3357, resulting in higher claim costs. Temporary HCPCS codes were released for the IV product in 2017, followed by permanent coding in 2018.

FIGURE 16

Commercial BDAID in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
1	J1745	Remicade	$4,691	$10,995	$6,123	$90	$227	$120	52%	40%	8%
13	J3380	Entyvio	$5,537	$10,686	$5,349	$19	$37	$18	34%	53%	13%
14	J3357	Stelara	$10,835	$30,488	$15,684	$177	$306	$228	68%	8%	24%
20	J0129	Orencia	$3,358	$7,673	$2,988	$42	$105	$41	66%	28%	6%

FIGURE 17

Medicare BDAID in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
9	J1745	Remicade	$3,752	$4,279	$3,710	$86	$85	$106	50%	48%	2%

FIGURE 18

Commercial BDAID: Crohn's Disease/Ulcerative Colitis Market Share, Spend, and Cost per Patient

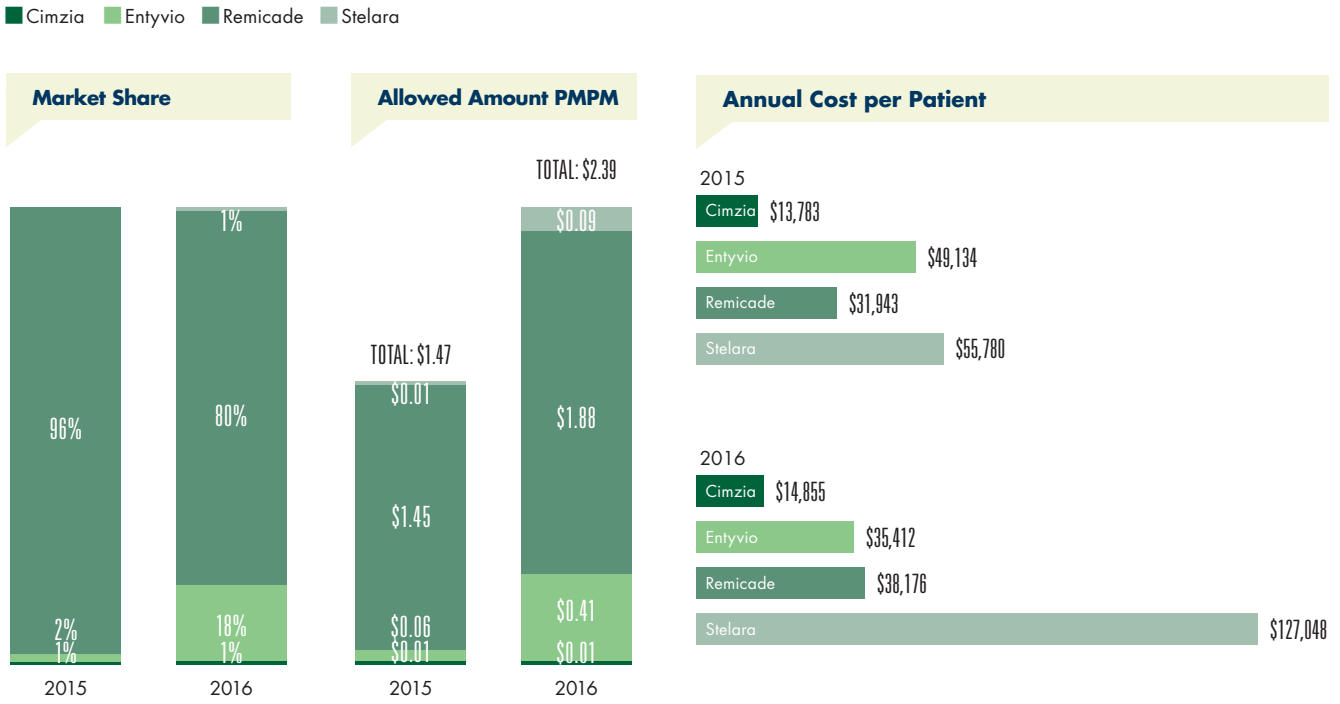


FIGURE 19

Medicare BDAID: Crohn's Disease/Ulcerative Colitis Market Share, Spend, and Cost per Patient

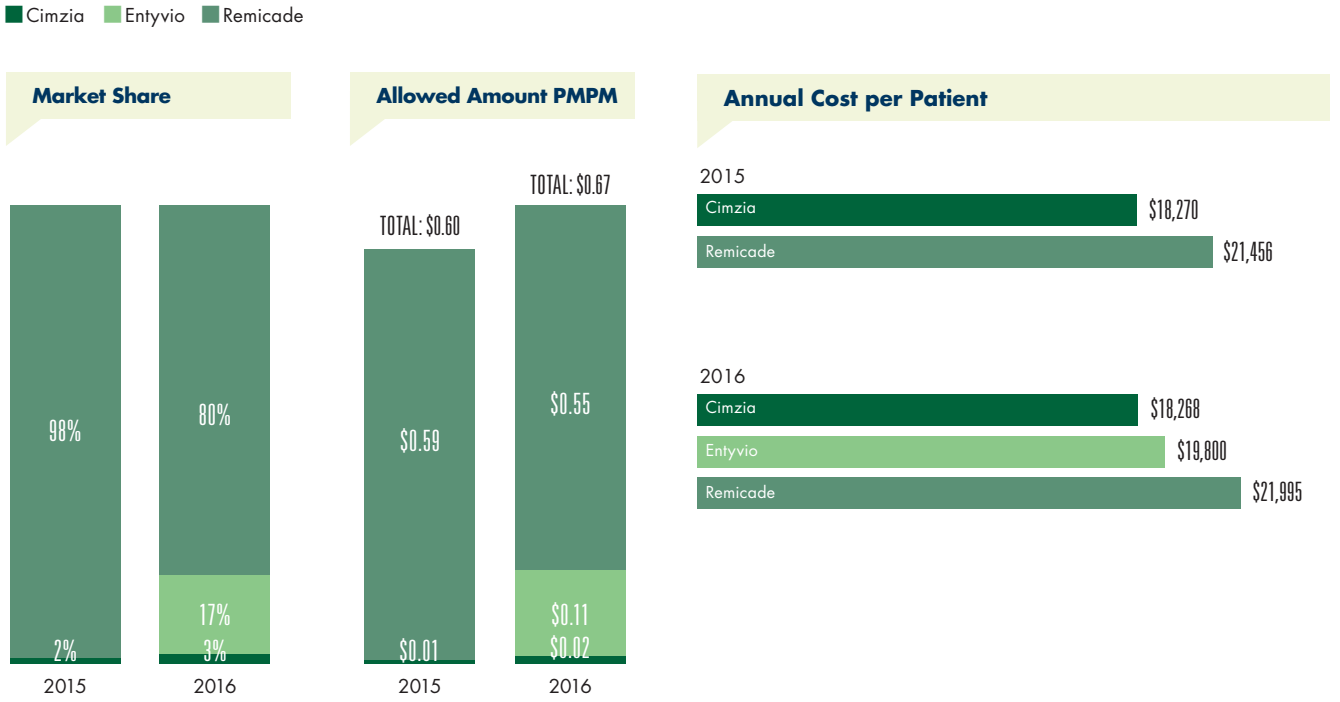


FIGURE 20

Commercial BDAID: Rheumatoid Arthritis Market Share, Spend, and Cost per Patient

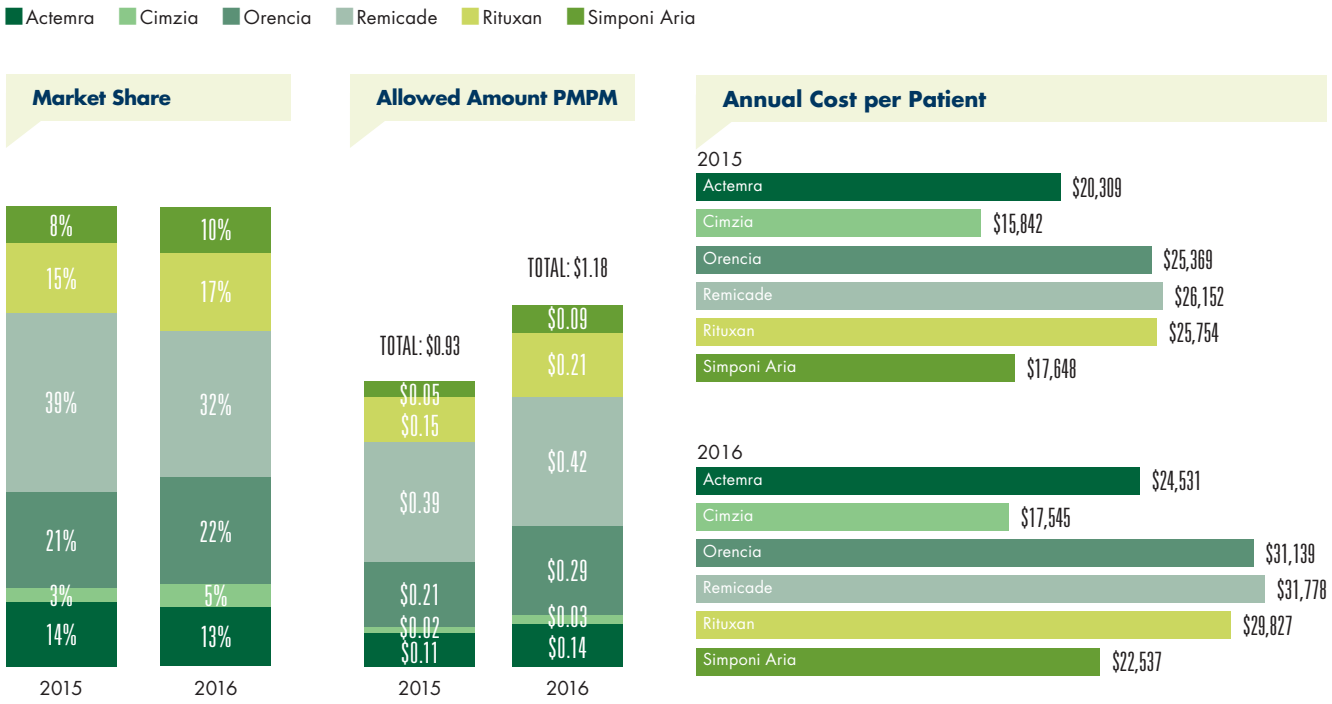
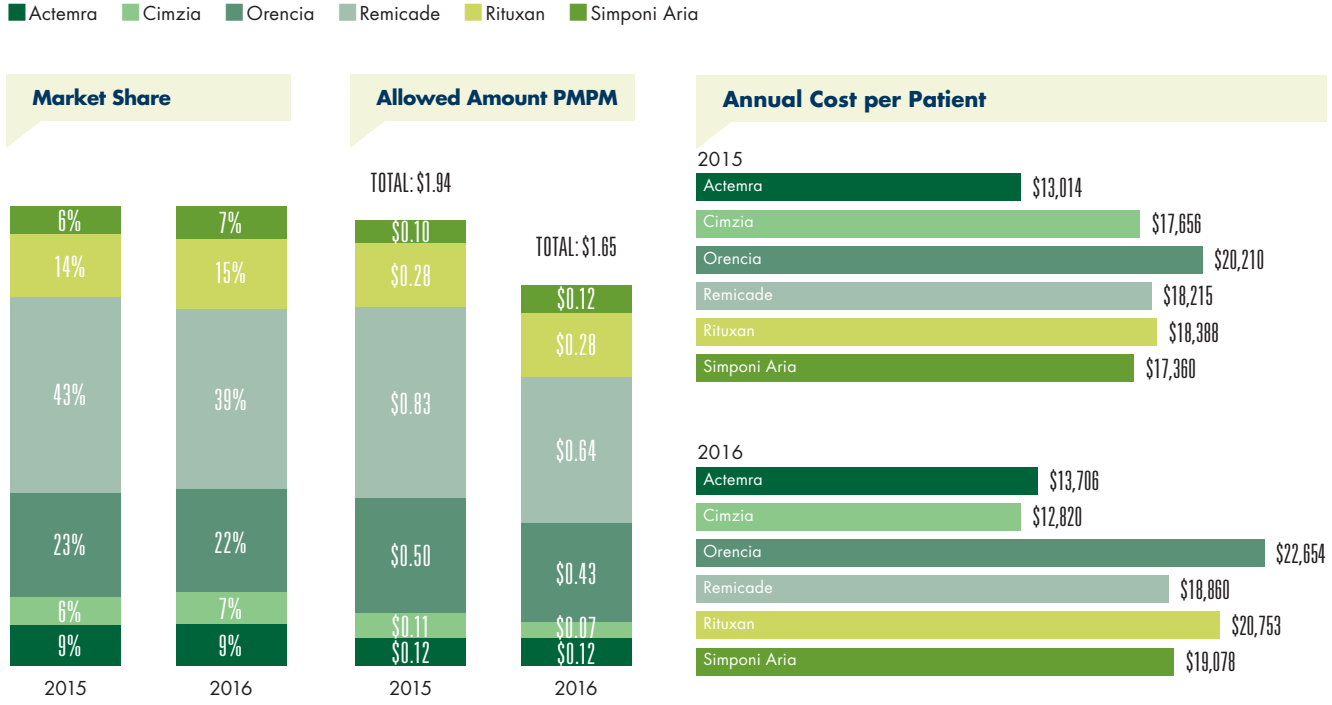


FIGURE 21

Medicare BDAID: Rheumatoid Arthritis Market Share, Spend, and Cost per Patient



Please note that due to rounding, some column totals do not add up accurately.

FIGURE 22

Commercial BDAID: Psoriasis/Psoriatic Arthritis Market Share, Spend, and Cost per Patient

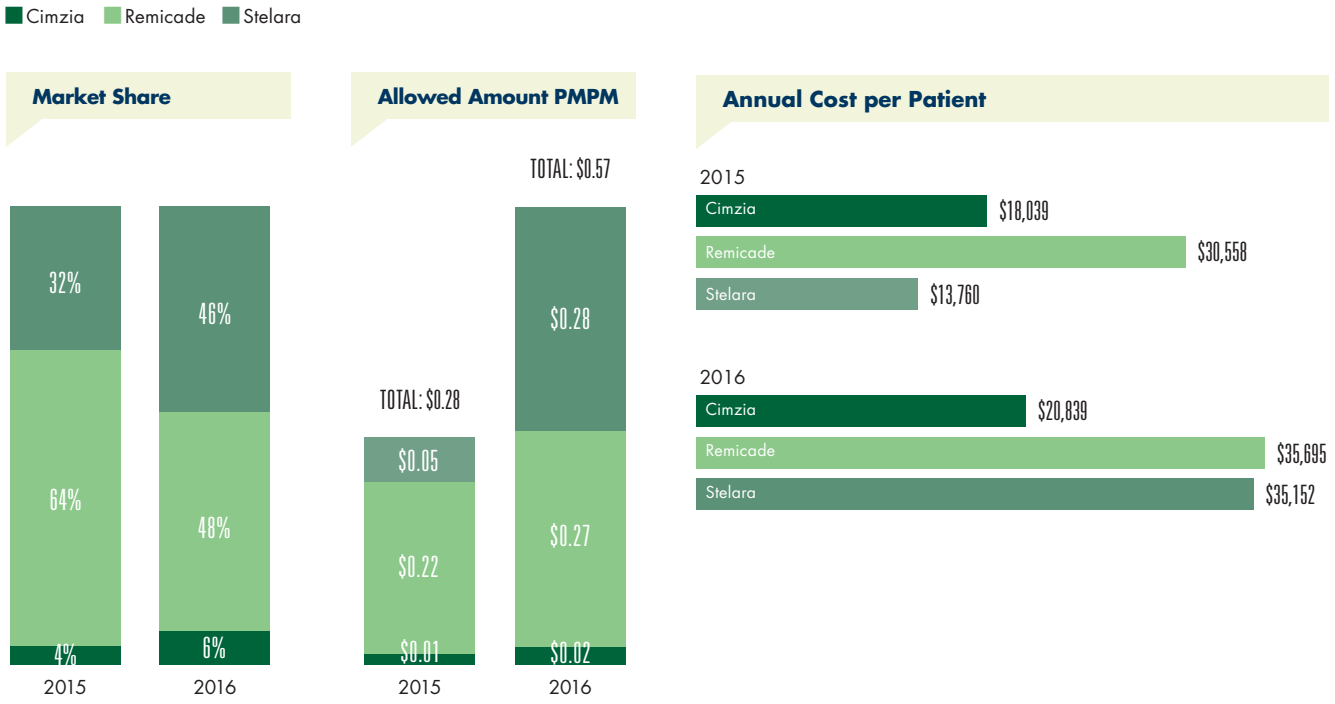
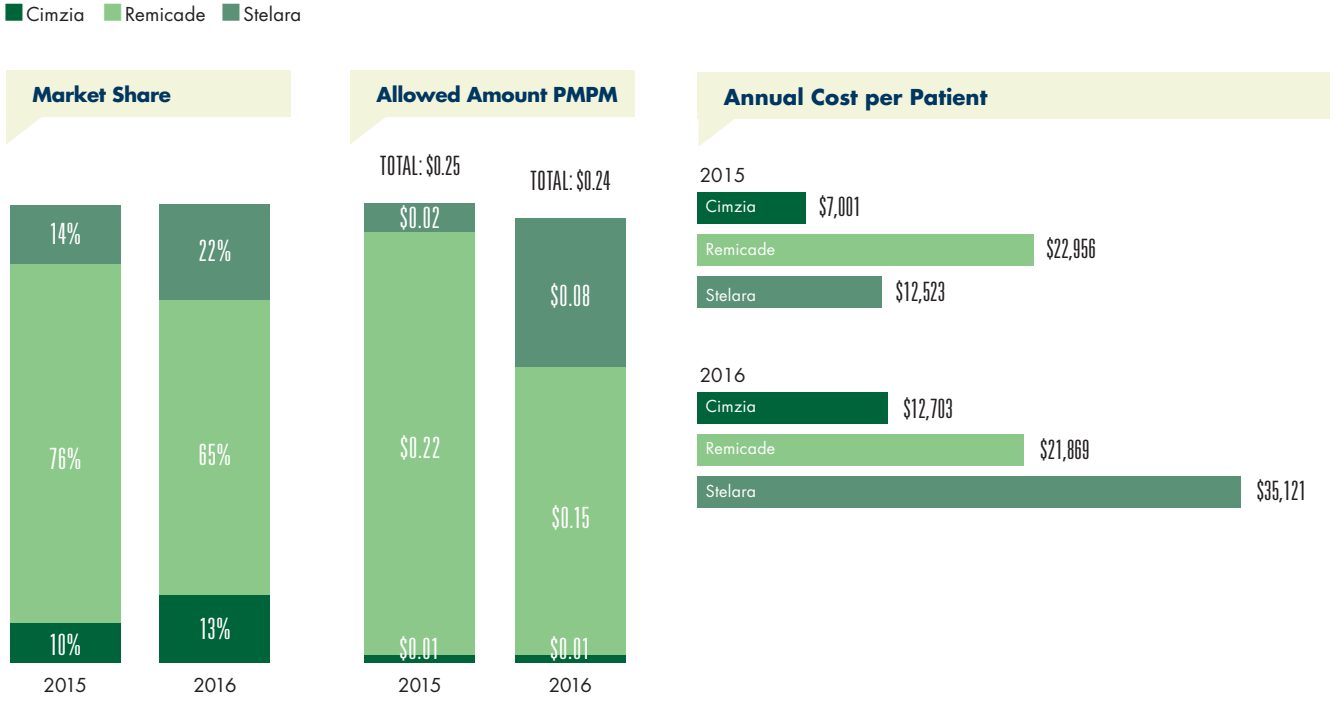


FIGURE 23

Medicare BDAID: Psoriasis/Psoriatic Arthritis Market Share, Spend, and Cost per Patient



Immune Globulin (IG)

Administration of IG products is markedly different between lines of business. Commercial is most often administered in the home infusion space. Due to Part B versus Part D coverage rules, Medicare is more often seen in the hospital setting.

2016 BY THE NUMBERS

2015-2016 CATEGORY TREND

16% Commercial

1% Medicare

CATEGORY PMPM

$2.00 Commercial

$2.82 Medicare

% OF MEDICAL RX SPEND

8% Commercial

6% Medicare

MEMBERS PER 1,000

0.41 Commercial

0.97 Medicare

AVERAGE COST PER CLAIM

$4,154 Commercial

$3,282 Medicare

HIGHEST SOS UTILIZATION BY MEMBERS

49% Commercial

42% Medicare

FIGURE 24

Commercial Immune Globulin Drugs in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
7	J1561	Gamunex-C/ Gammaked	$4,304	$7,624	$4,354	$57	$107	$65	22%	42%	36%
9	J1569	Gammagard Liquid	$4,876	$4,998	$4,184	$54	$82	$65	27%	24%	49%

FIGURE 25

Medicare Immune Globulin Drugs in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

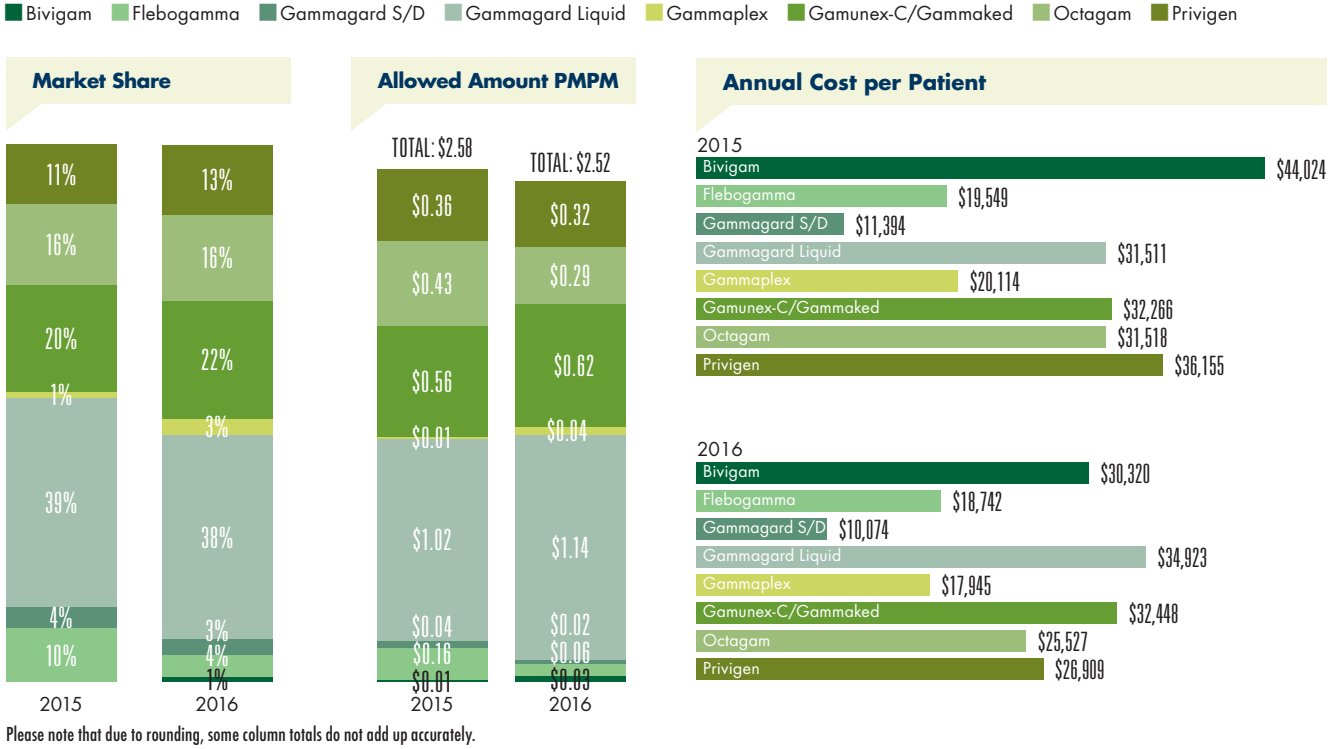
			COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
12	J1569	Gammagard Liquid	$2,919	$2,433	$4,771	$40	$44	$51	22%	48%	30%
19	J1561	Gamunex-C/ Gammaked	$4,413	$3,133	$3,889	$44	$44	$43	18%	53%	29%

FIGURE 26

Commercial Intravenous Immune Globulin Market Share, Spend, and Cost per Patient

FIGURE 27

Medicare Intravenous Immune Globulin Market Share, Spend, and Cost per Patient



Please note that due to rounding, some column totals do not add up accurately.

Oncology

In 2016, Opdivo changed the oncology landscape and became the eighth highest spend drug by PMPM in commercial and the third highest spend drug in Medicare. Keytruda also broke into the top 25 drugs in Medicare as the 21st highest spend drug for that line of business (**see figures 28 thru 31**).

- Oncology agents accounted for 10 of the top 25 drugs by spend on the commercial medical benefit and 14 of the top 25 for Medicare.
- In both lines of business, oncology agents are more often administered in the physician office than the hospital.

For colorectal cancers, avastin continues to be the most commonly utilized antiangiogenic therapy. Erbitux and Vectibix are limited to patients with RAS wild-type tumors and have largely overlapping indications and similar percent market shares. Cyramza utilization did have some uptake in 2016 (**see figures A12 and A13 in appendix**).

The use of the PD-1 inhibitors Opdivo and Keytruda had a major impact on utilization in the treatment of NSCLC in 2016. Notably, Keytruda's labeling requirement for demonstration of PD-L1 expression in the second-line setting, which Opdivo does not require, may be one explanation for the much higher market share for Opdivo as compared to Keytruda despite the potentially more favorable dosing schedule of Keytruda every three weeks compared to Opdivo given every two weeks (**see figures A14 and A15 in appendix**).

Lastly, the introduction of Darzalex into the 2016 market share reflects its approval in late 2015 for monotherapy in patients with multiple myeloma who had received at least three prior lines of therapy. The market share for Darzalex is likely to increase in coming years due to approvals in 2016 and 2017 for its use as part of a combination therapy regimen in patients who have failed one to two prior lines of therapy (**see figures A16 and A17 in appendix**).

2016 BY THE NUMBERS

2015-2016 CATEGORY TREND

23% Commercial	11% Medicare

MEMBERS PER 1,000

4.4 Commercial	21.2 Medicare

CATEGORY PMPM

$9.17 Commercial	$21.99 Medicare

AVERAGE COST PER CLAIM

$2,194 Commercial	$1,615 Medicare

HIGHEST SOS UTILIZATION BY MEMBERS

55% Commercial	68% Medicare

% OF MEDICAL RX SPEND

35% Commercial	47% Medicare

FIGURE 28

Commercial Oncology Drugs in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
3	J9355	Herceptin	$4,131	$7,737	-	$101	$175	-	48%	52%	-
4	J9310	Rituxan	$7,328	$11,451	$10,441	$878	$1,482	$914	48%	51%	1%
5	J9035	Avastin	$2,415	$9,471	-	$79	$160	-	77%	23%	-
8	J9299	Opdivo	$6,213	$10,211	-	$28	$54	-	43%	57%	-
11	J9306	Perjeta	$5,591	$10,095	-	$11	$22	-	45%	55%	-
12	J0897	Xgeva/Prolia	$1,530	$3,435	$1,174	$17	$33	$19	68%	27%	5%
16	J9305	Alimta	$6,165	$9,514	-	$68	$122	-	42%	58%	-
19	J9228	Yervoy	$38,292	$67,195	-	$160	$230	-	31%	69%	-
21	J9264	Abraxane	$2,498	$4,098	-	$11	$22	-	44%	56%	-
24	J9041	Velcade	$1,763	$2,678	-	$53	$105	-	52%	48%	-

FIGURE 29

Medicare Oncology Drugs in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM		COST PER UNIT		MEMBER UTILIZATION	
Rank	HCPCS	Brand	Physician	Hospital OP	Physician	Hospital OP	Physician	Hospital OP
2	J9310	Rituxan	$5,779	$5,012	$791	$848	42%	58%
3	J9299	Opdivo	$5,635	$4,830	$26	$29	43%	57%
4	J9035	Avastin	$413	$4,318	$77	$78	95%	5%
7	J0897	Xgeva/Prolia	$1,250	$1,717	$16	$18	71%	29%
8	J9355	Herceptin	$3,650	$4,222	$91	$103	51%	49%
10	J9305	Alimta	$5,206	$4,325	$63	$69	42%	58%
11	J9041	Velcade	$1,470	$1,287	$49	$55	45%	55%
15	J9264	Abraxane	$1,935	$1,901	$10	$11	38%	62%
17	J9217	Eligard/Lupron Depot	$959	$1,207	$232	$368	84%	16%
18	J9033	Treanda	$4,099	$3,932	$26	$30	53%	47%
21	J9271	Keytruda	$8,446	$7,388	$48	$48	34%	66%
22	J9306	Perjeta	$4,906	$5,175	$11	$11	51%	49%
24	J9047	Kyprolis	$2,027	$1,656	$34	$37	48%	52%
25	J9395	Faslodex	$1,880	$2,026	$96	$107	51%	49%

Please note: Avastin utilization includes all indications (e.g. cancer and retina diseases)

FIGURE 30

Commercial Checkpoint Inhibitors Market Share, Spend, and Cost per Patient

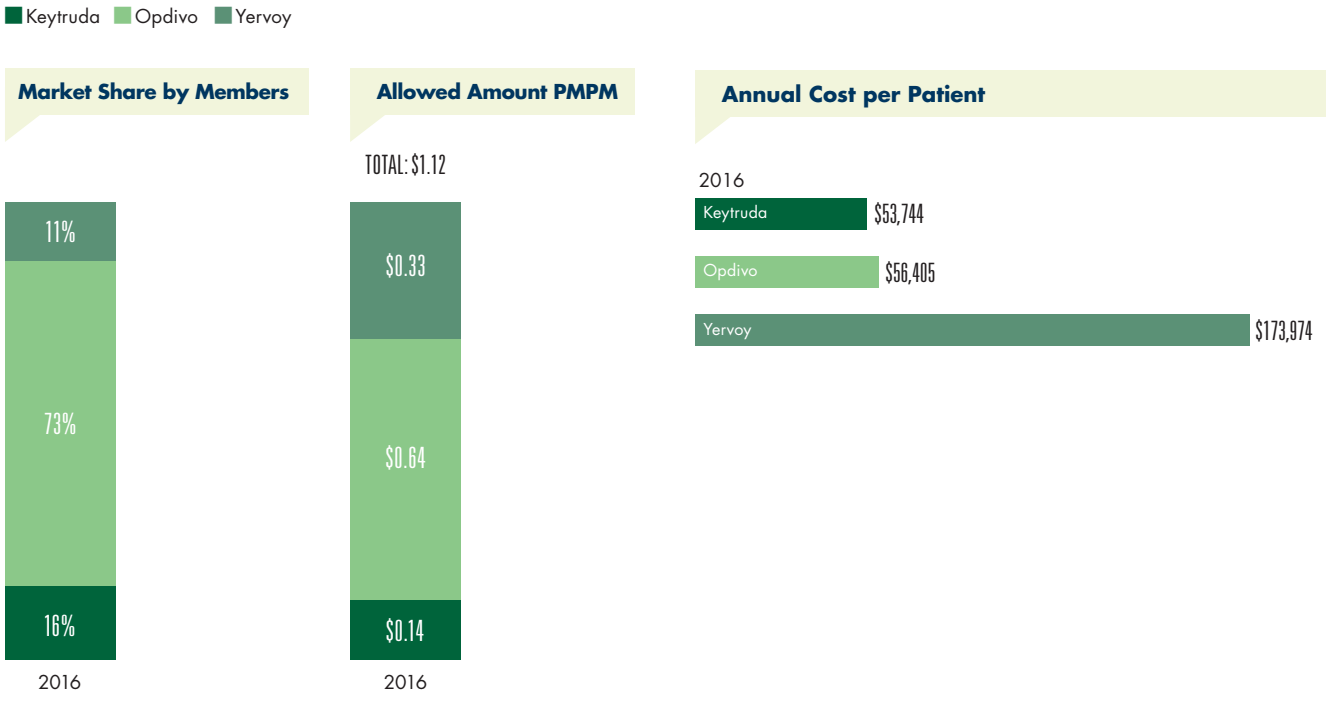
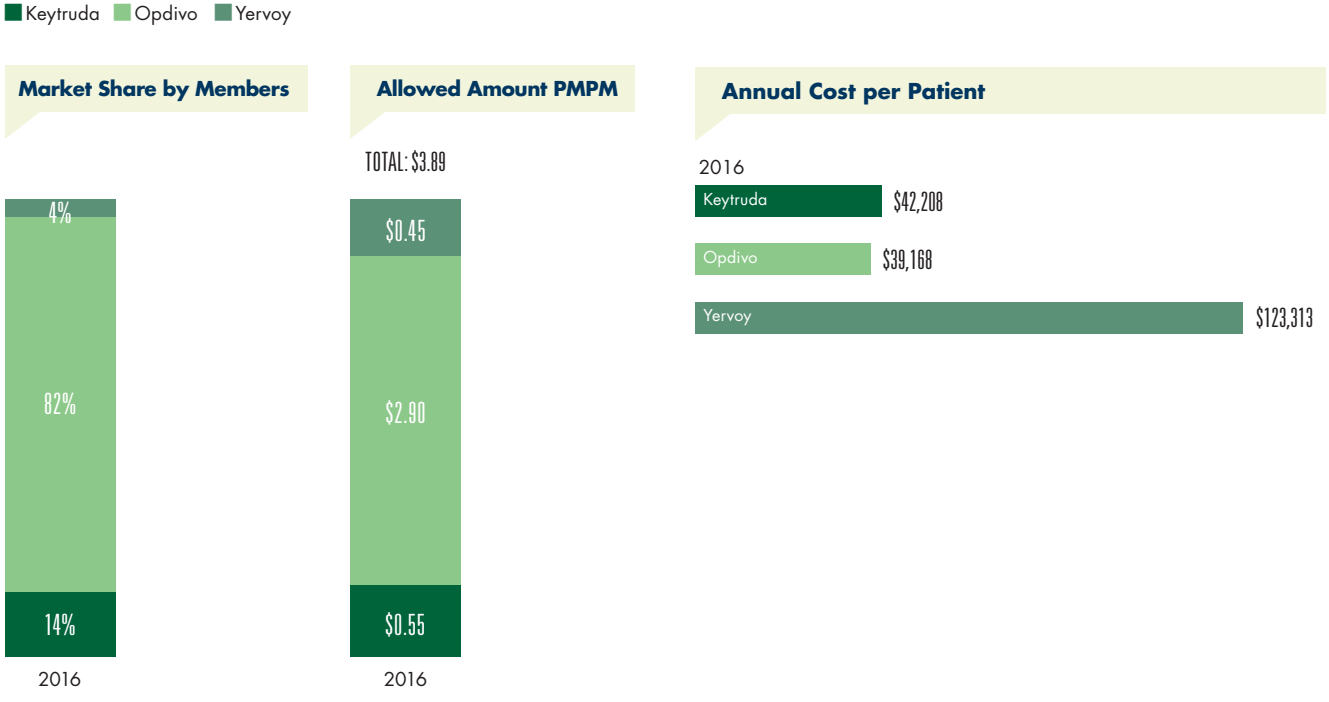


FIGURE 31

Medicare Checkpoint Inhibitors Market Share, Spend, and Cost per Patient



Oncology Management

Coupled with analyzing the trends through paid claims data, we also surveyed health plans about their innovative approaches to oncology management.

- Although value frameworks were available starting in 2015, the majority of payers did not implement and were not planning to implement value framework tools into their medical pharmacy management strategy (**see figure 32**).
- Only 18% of payers had an integrated/comprehensive program across medical oncology, radiation oncology, surgical oncology, and palliative care (**see figure 33**), but 45% had an oncology case management program (**see figure 34**).
  - Oncology case management programs often incorporated pain management, palliative care, nutrition programs, and behavioral health programs (**see figure 35**).

FIGURE 33

2017 Integrated Oncology Solution

(% of payers)

n=44

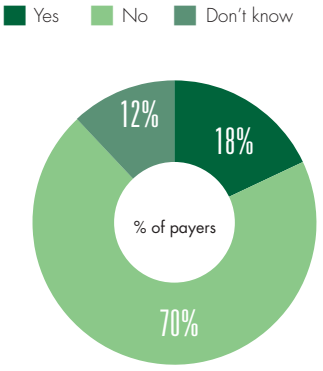


FIGURE 32

2017 Medical Oncology Management Strategies (% of payers)

n=44

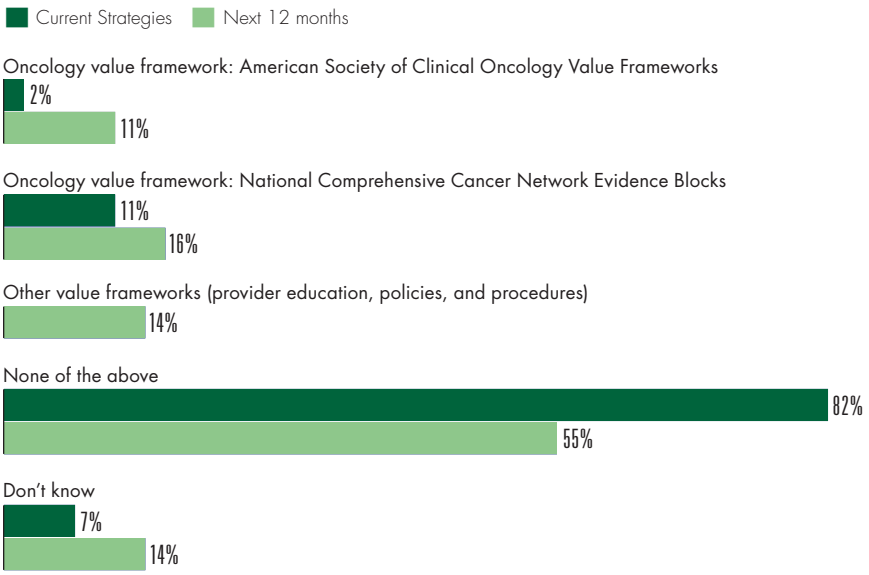


FIGURE 34

2017 Oncology Case Management Program

(% of payers)

n=44

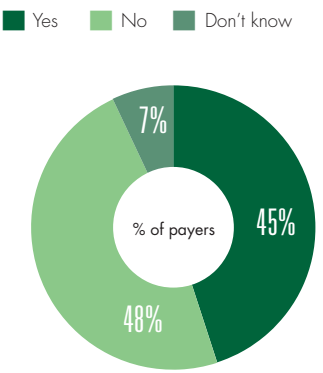
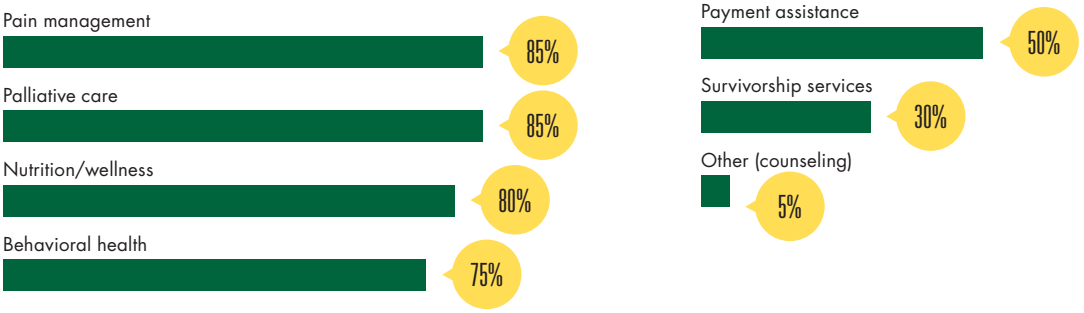


FIGURE 35

2017 Elements of Oncology Case Management Program (% of payers)

n=19



Oncology Support

Oncology support includes colony-stimulating factors (CSF), antiemetics, gastrointestinal (GI), and erythropoiesis-stimulating agents (ESA). This year, we limited oncology support use to claims billed with oncology diagnosis ICD-10 codes; however, on average, 94% of all utilization of these drugs is for oncology supportive care.

- Antiemetics accounted for the majority of utilization by members, with 2.8 commercial members per 1,000 with a claim and 6.7 Medicare members per 1,000.
- There has been heightened scrutiny over the short-acting CSF category due to the availability of biosimilars. For the first time, we were able to illustrate the impact of biosimilar introduction on category market share (**see figures 38 and 39**).

2016 BY THE NUMBERS

2015-2016 CATEGORY TREND

12% Commercial

-5% Medicare

CATEGORY PMPM

$2.62 Commercial

$6.06 Medicare

% OF MEDICAL RX SPEND

10% Commercial

13% Medicare

MEMBERS PER 1,000

3.2 Commercial

10.1 Medicare

AVERAGE COST PER CLAIM

$1,202 Commercial

$852 Medicare

HIGHEST SOS UTILIZATION BY MEMBERS

58% Commercial

58% Medicare

FIGURE 36

Commercial Oncology Support Drugs in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
2	J2505	Neulasta	$4,684	$8,372	-	$3,030	$7,664	-	49%	51%	-
23	J2353	Sandostatin LAR	$5,475	$9,947	$4,723	$183	$350	$166	46%	49%	5%
25	J2469	Aloxi	$317	$589	$832	-	$60	-	56%	44%	-

FIGURE 37

Medicare Oncology Support Drugs in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
1	J2505	Neulasta	$4,096	$4,287	-	$4,094	$4,279	-	47%	53%	-
14	J2353	Sandostatin LAR	$4,445	$5,582	$3,701	$168	$178	$185	49%	50%	1%
16	J0881	Aranesp	$1,178	$818	-	$5	$5	-	66%	34%	-
23	J0885	Procrit	$488	$467	-	$14	$15	-	64%	36%	-

FIGURE 38

Commercial Oncology Support Colony-Stimulating Factors Market Share, Spend, and Cost per Patient

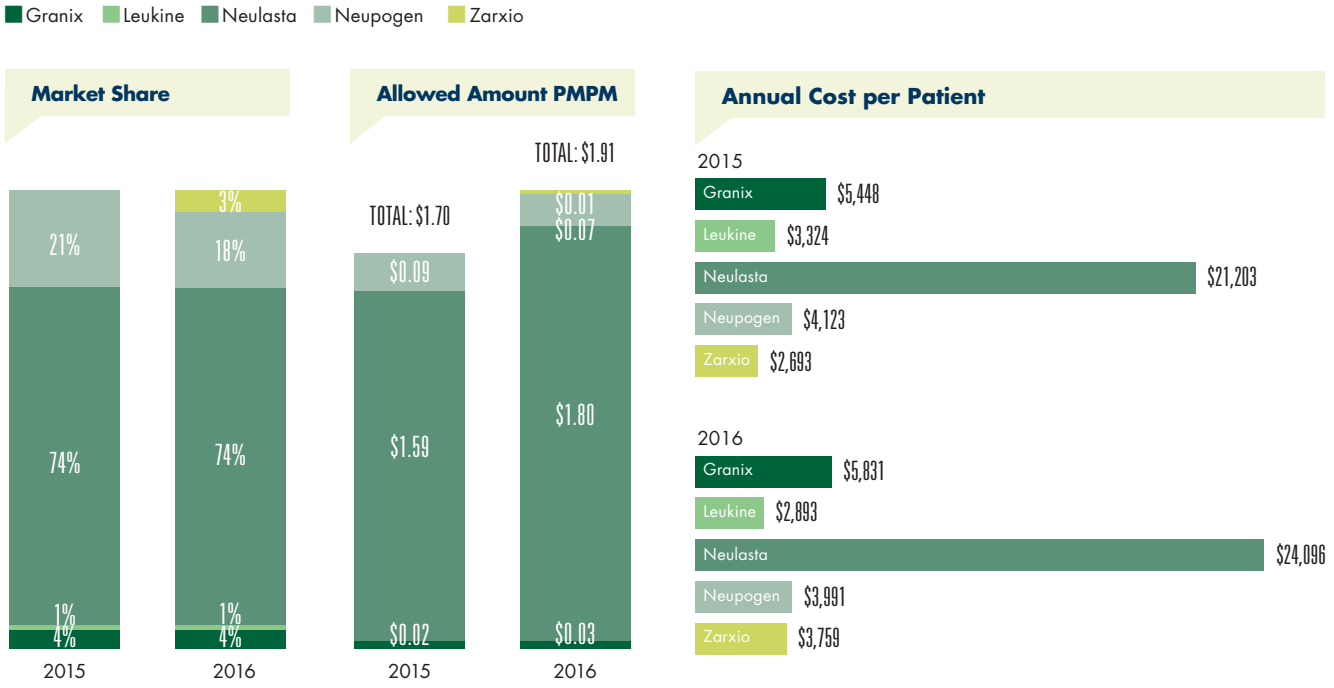
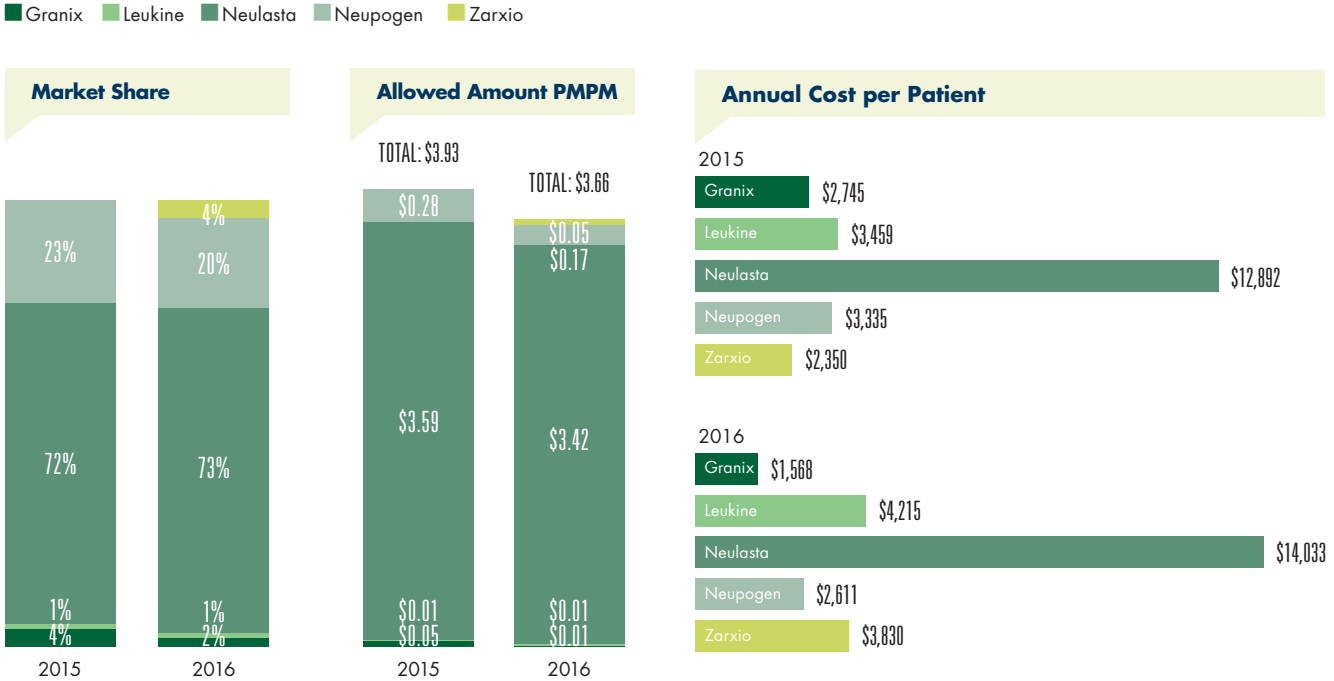


FIGURE 39

Medicare Oncology Support Colony-Stimulating Factors Market Share, Spend, and Cost per Patient



Please note: Oncology Support: CSF will not match **figure 6** as it is limited to oncology ICD-10 diagnoses.

Ophthalmic Injections

For Medicare, ophthalmic injections is not only the second highest category by PMPM spend, but it is also the sixth largest by utilization.

- Commercial PMPM trend remains high, above 30%, while Medicare trend has steadied at 2%. Commercial trend was driven by long-term microvascular complications from uncontrolled diabetes (e.g., diabetic macular edema), whereas Medicare utilization was largely comprised of age-related wet macular degeneration.
- Medicare has seen increased utilization of off-label Avastin for retina diseases, which contributed to a stabilization in trend (**see figure 43**).

2016 BY THE NUMBERS

2015-2016 CATEGORY TREND

31% Commercial

2% Medicare

CATEGORY PMPM

$0.42 Commercial

$4.57 Medicare

% OF MEDICAL RX SPEND

2% Commercial

10% Medicare

MEMBERS PER 1,000

0.9 Commercial

14.4 Medicare

AVERAGE COST PER CLAIM

$1,008 Commercial

$745 Medicare

HIGHEST SOS UTILIZATION BY MEMBERS

97% Commercial

97% Medicare

FIGURE 40

Commercial Ophthalmic Injection Drugs in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM		COST PER UNIT		MEMBER UTILIZATION	
Rank	HCPCS	Brand	Physician	Hospital OP	Physician	Hospital OP	Physician	Hospital OP
22	J0178	Eylea	$2,187	$3,571	$1,038	$1,668	97%	3%

FIGURE 41

Medicare Ophthalmic Injection Drugs in the Top 25 by Cost per Claim, Cost per Unit, and Member Utilization

			COST PER CLAIM		COST PER UNIT		MEMBER UTILIZATION	
Rank	HCPCS	Brand	Physician	Hospital OP	Physician	Hospital OP	Physician	Hospital OP
5	J0178	Eylea	$2,150	$2,185	$1,001	$1,026	95%	5%
6	J2778	Lucentis	$1,935	$1,961	$392	$405	98%	2%

Please note: Avastin utilization can be found in the oncology section.

FIGURE 42

Commercial Anti-Vascular Endothelial Growth Factor (Anti-VEGF) Market Share, Spend, and Cost per Patient

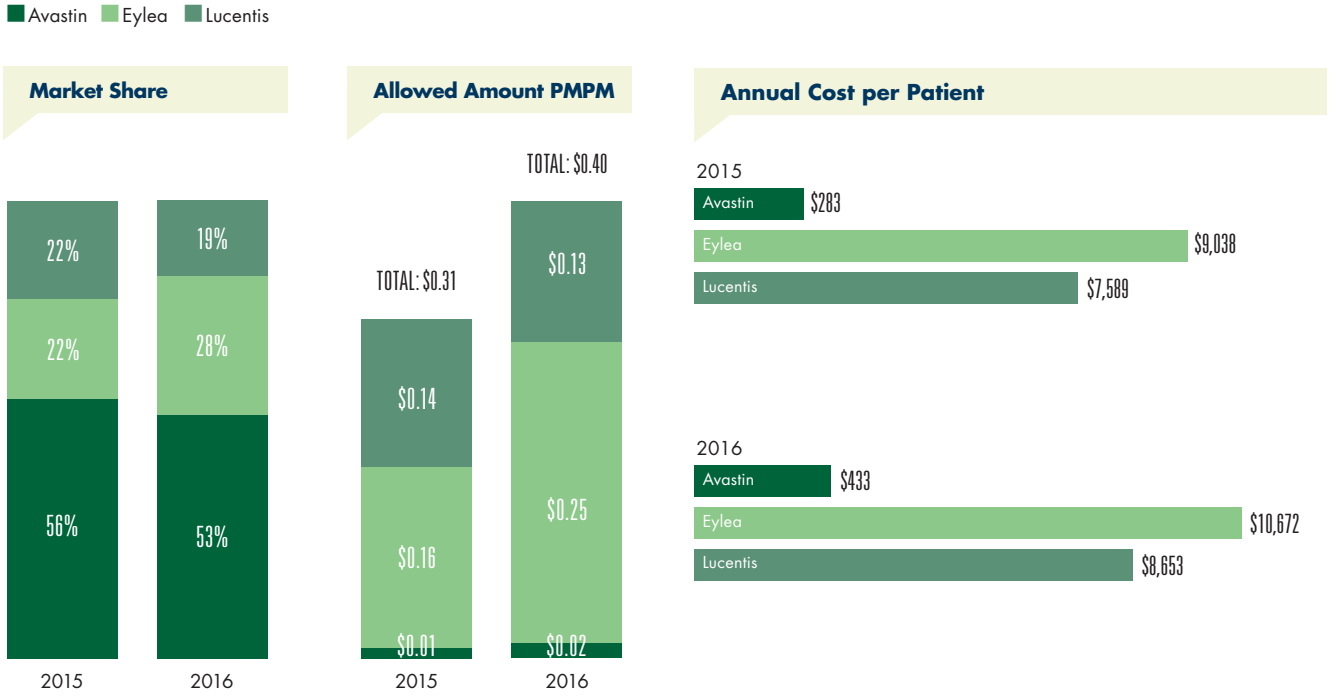
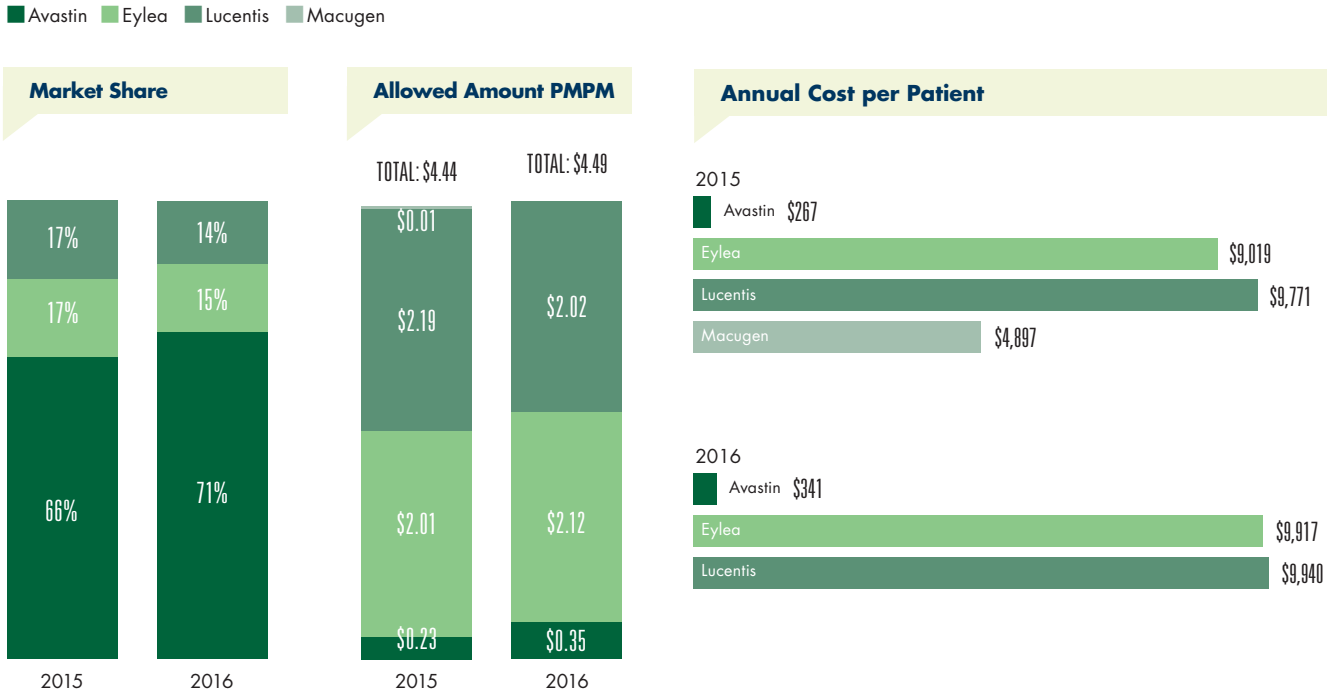


FIGURE 43

Medicare Anti-VEGF Market Share, Spend, and Cost per Patient



Viscosupplementation

After the 2013 release of the American Academy of Orthopaedic Surgeons revised clinical guidelines for treatment of osteoarthritis in the knee, some payers excluded coverage of these hyaluronic acid products for a period of time. However, based on the results of our 2016 analysis, we saw an increase in category spend, suggesting the limited coverage of this category had not impacted its overall growth.

Viscosupplementation agents fell outside of both the commercial and Medicare top 25 drugs by PMPM.

2016 BY THE NUMBERS

2015-2016 CATEGORY TREND

22% Commercial

7% Medicare

MEMBERS PER 1,000

2.6 Commercial

12.0 Medicare

CATEGORY PMPM

$0.25 Commercial

$0.80 Medicare

AVERAGE COST PER CLAIM

$341 Commercial

$286 Medicare

HIGHEST SOS UTILIZATION BY MEMBERS

90% Commercial

96% Medicare

% OF MEDICAL RX SPEND

1% Commercial

2% Medicare

FIGURE 44

Commercial Viscosupplementation Market Share, Spend, and Cost per Patient

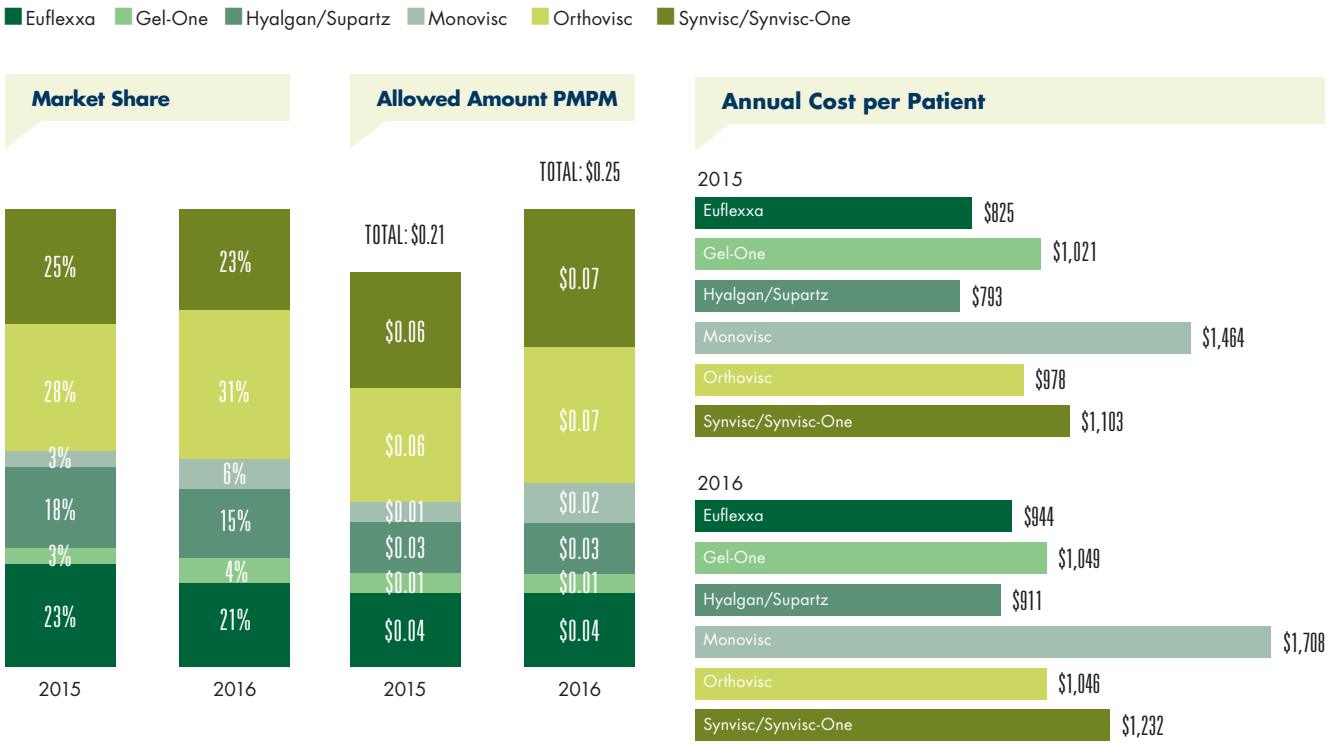
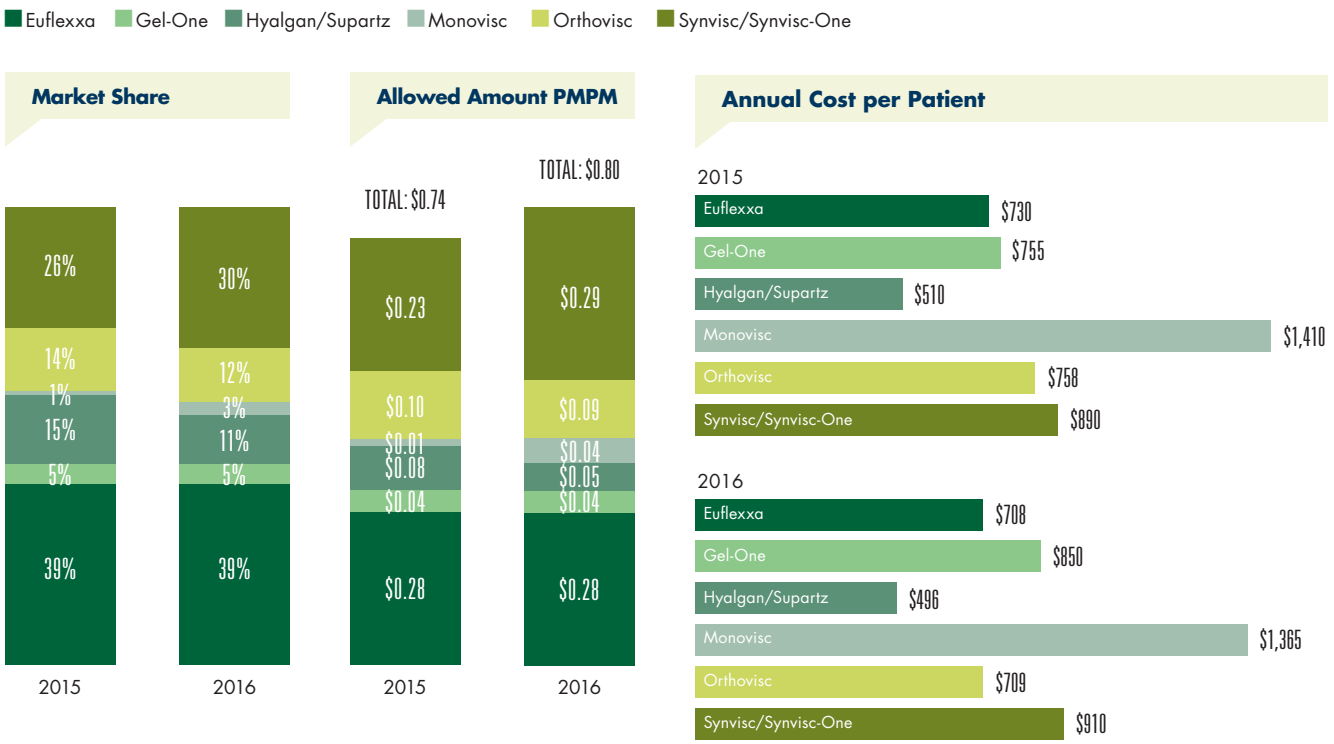


FIGURE 45

Medicare Viscosupplementation Market Share, Spend, and Cost per Patient



Medical Pharmacy Management

With the introduction of biosimilar agents covered on the medical benefit, payers have greater ability to implement management strategies to drive to a lowest net cost product in key therapy classes. Even so, medical benefit spend is more costly than ever and continues to grow. As with the pharmacy benefit, product preferencing, rebating, and other utilization management tools are used on the medical benefit where possible to control costs.

Product Preferencing and Rebating

- In 2017, 85% of payers and 86% of lives implemented some sort of product preferencing for medical benefit drugs (**see figure 46**).
  - 50% of payers always or usually require a rebate to employ a product preferencing strategy (**see figure 47**).
  - In 2017, payers reported that they require a 21% discount to preference a medical benefit drug compared to 18% in 2016.

21% Valuable discount to prefer a medical benefit drug

FIGURE 46

2017 Product Preferencing

n=46; 128 million lives

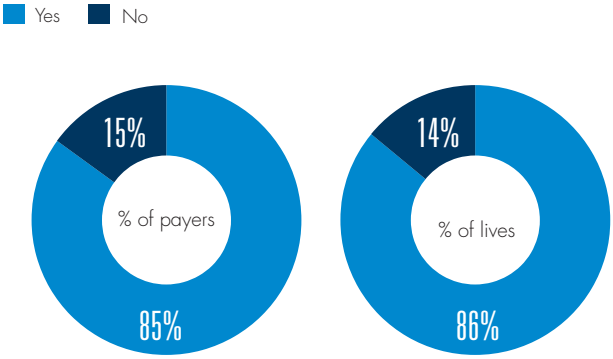
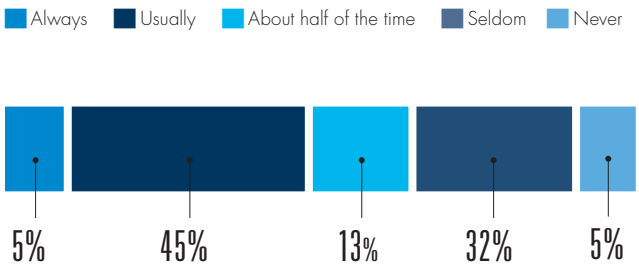


FIGURE 47

2017 Rebate Required for Medical Pharmacy Product Preferencing (% of payers)

n=38



Utilization Management

- Prior authorization (PA) requirements to support appropriate use of medical benefit drugs continued to be the most utilized management tool for 75% of commercial and 64% of Medicare payers (**see figure 48**).
  - » Step edits are a component of commercial payer prior authorization strategies, whereas they are not permissible in Medicare Advantage.
- Almost one-quarter of commercial payers (24%) and 19% of Medicare payers used post-service claim edits as a secondary management tool.
- Prior authorization denial rates (all types, including clinical and administrative) were similar across lines of business with both commercial and Medicare having an 18% denial rate (**see figure 49**).
  - » In commercial, close to one-third of PA appeals are overtuned.
- Post-service claim edits were similar, with a 15% denial rate across both lines of business (**see figure 50**).

FIGURE 48

2017 Utilization Management Tools (% of payers)

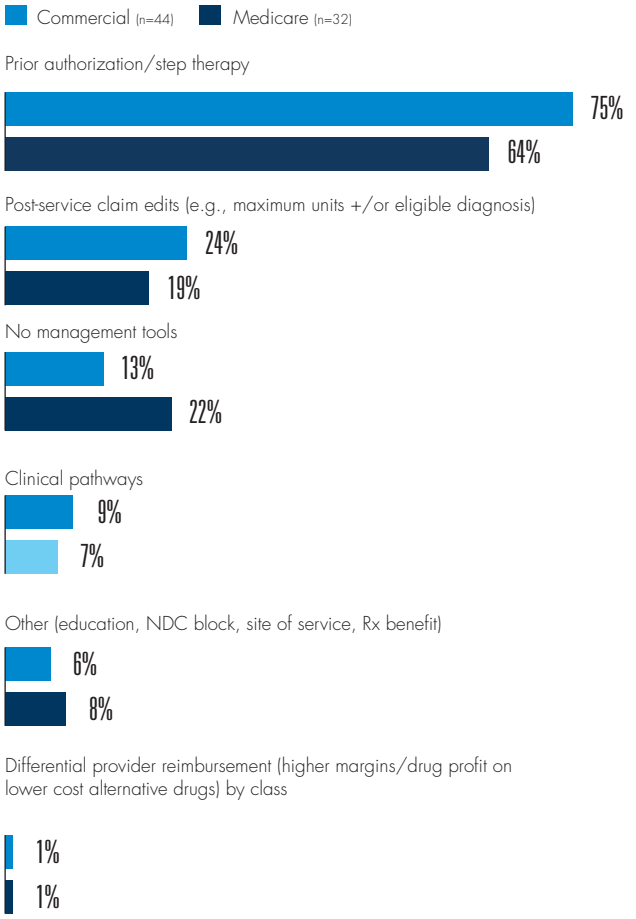


FIGURE 49

2017 Prior Authorization Weighted Determination Rates (rates %)

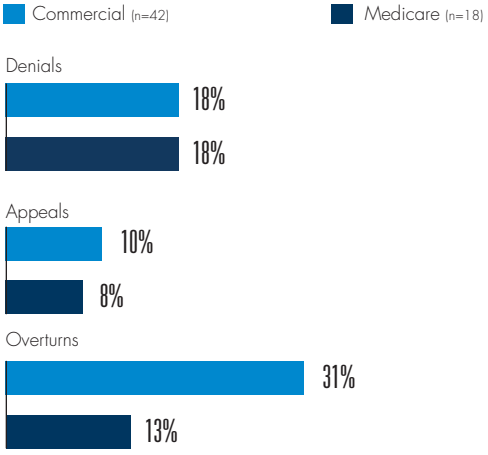
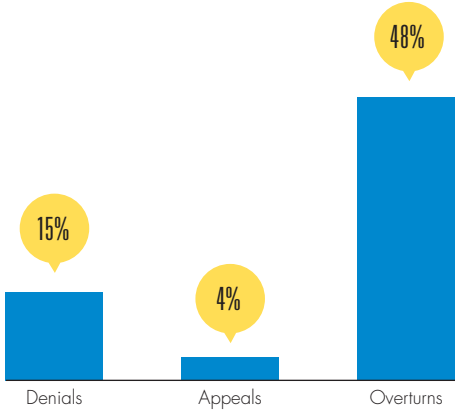


FIGURE 50

2017 Post-Service Claim Edit Weighted Determination Rates (rates %)

n=17

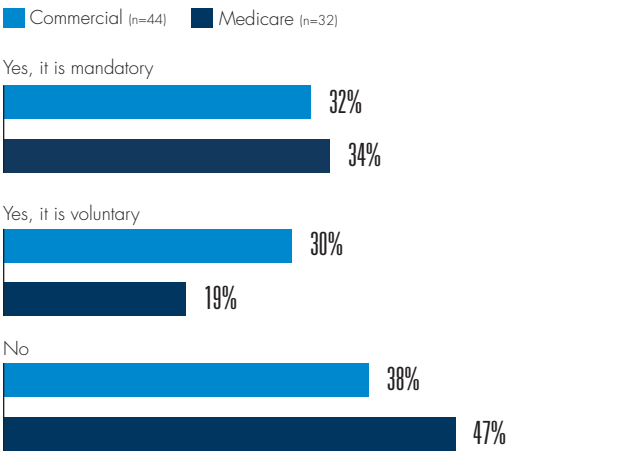


- More than half of payers have some form of dose optimization program. More commercial payers utilize this strategy than Medicare; 62% vs. 53%, respectively (**see figure 51**).
  - 48% of commercial payers employing a dose optimization strategy have seen, on average, a 13% savings.
  - 32% of Medicare payers employing a dose optimization strategy have seen an average of 11% savings.
- 43% and 41% of commercial and Medicare payers, respectively, are practicing vial rounding (**see figure 52**).
  - Vial rounding tends to be evenly split, whether using 5% or 10% limits of the prescribed dose.

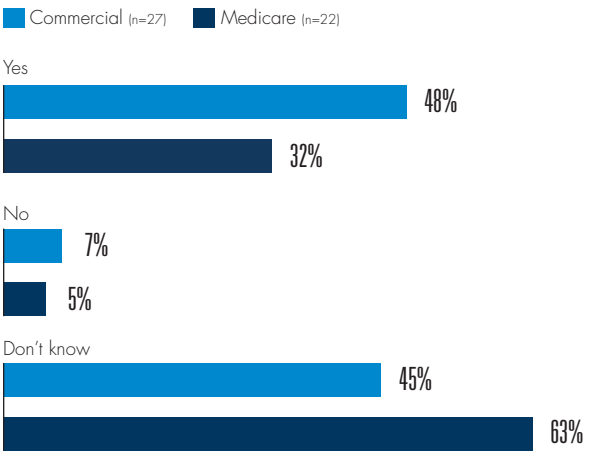
FIGURE 51

2017 Dose Optimization Procedure (% of payers)

Dose Optimization



Dose Optimization Savings



Average Savings from Dose Optimization Protocol

Commercial (n=27); Medicare (n=22)

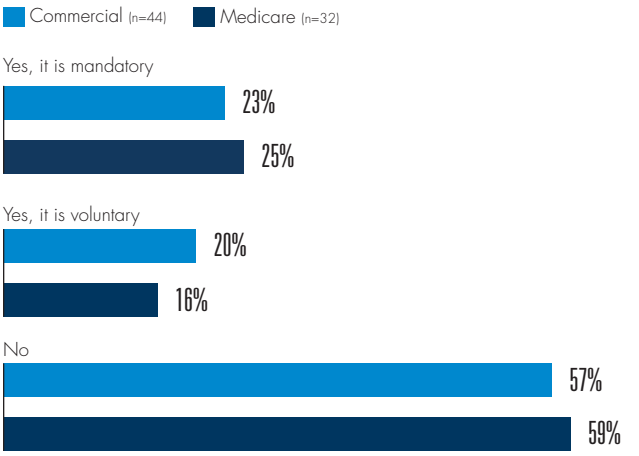
13% Commercial

11% Medicare

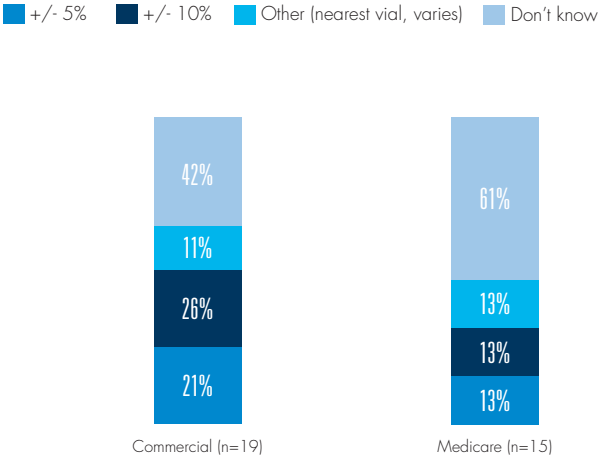
FIGURE 52

2017 Vial Rounding Procedure

Vial Rounding



Vial Rounding Limits



New Specialty Drugs: Coverage and Management

- Due to the absence of real-time claims adjudication and a traditional formulary process on the medical benefit, payers are unable to implement edits to manage utilization of new specialty drugs to market as they can on the pharmacy benefit. In absence of these tools, payers are turning toward unclassified code prior authorization requirements for new medical specialty drugs immediately after FDA approval.
- Most payers (93%) implemented a PA for newly released medical benefit drugs billed with an unclassified code (**see figure 53**).
  - 54% implemented the PA after FDA approval, and 81% of those payers did so within three months.
  - 36% implemented after the NDC was available, and 58% of those payers implemented within three months.
- 41% of payers implemented a post-service claim edit (PSCE) for newly released medical benefit drugs billed with an unclassified code, most likely to include the claim to authorization match for unclassified codes managed through PA.
  - 43% based their timing of implementation of the PSCE after FDA approval versus the 57% who implemented after the NDC was available (**see figure 54**).

FIGURE 54

2017 PSCE for Newly Released Medical Specialty Drugs (% of payers)

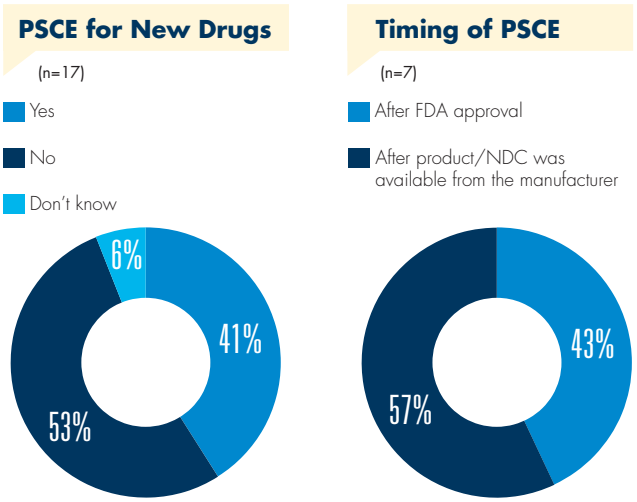
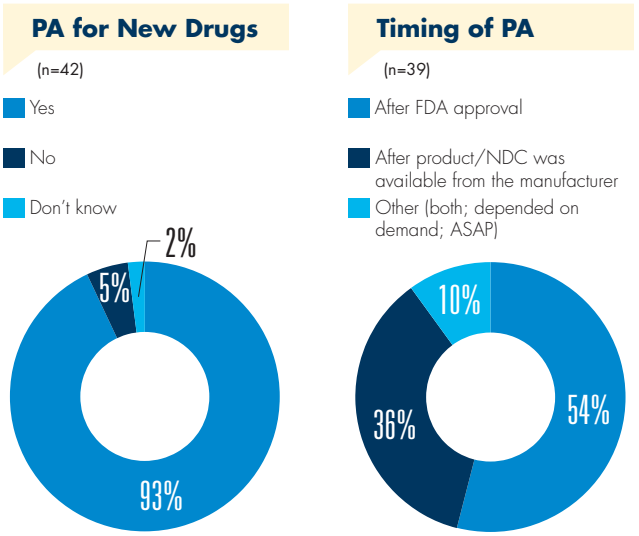
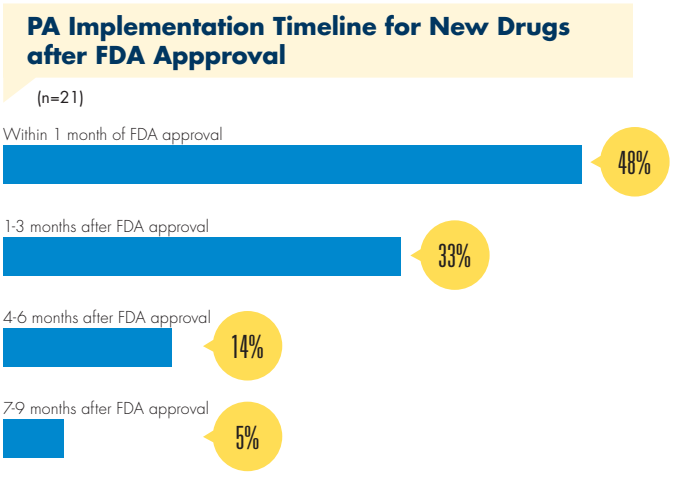
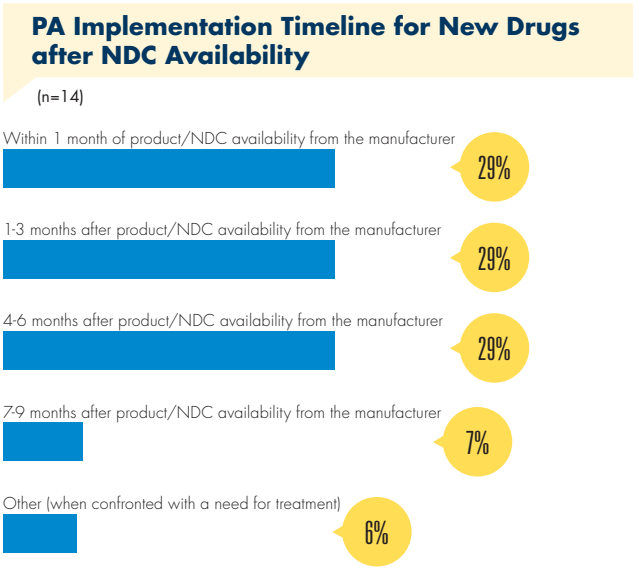


FIGURE 53

2017 PA for Newly Released Medical Specialty Drugs (% of payers)





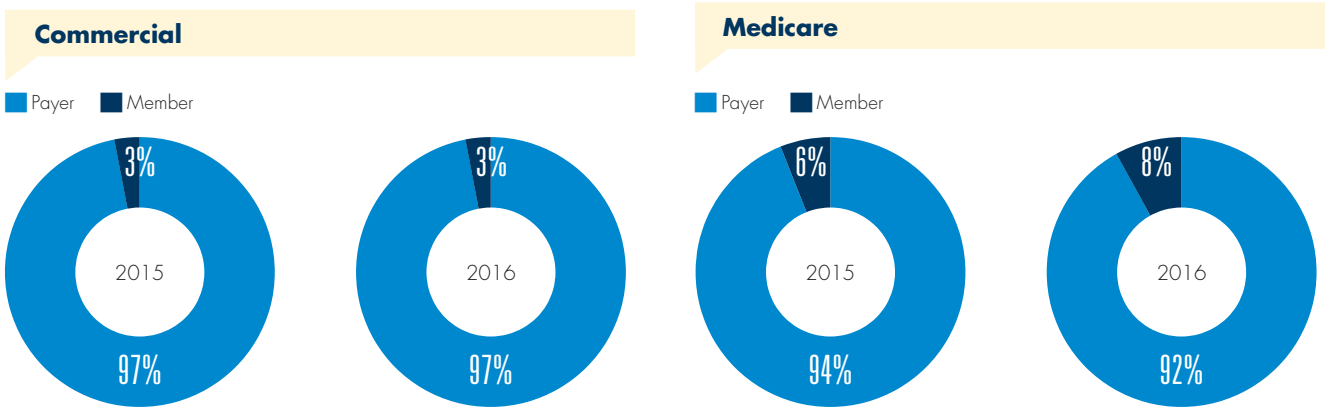


Medical Benefit Cost Share

- Although patients treated with medical specialty drugs reach their out-of-pocket maximums quickly, and have a costly condition to manage, the majority of drug costs on the medical benefit are covered by health insurance carriers.
  - In 2016, commercial payers were responsible for 97% of medical benefit drug costs.
  - Medicare payers were responsible for 92% of medical benefit drug costs, a decrease from 94% in 2015 (**see figure 55**).
- In 2017, for both commercial and Medicare, payers moved away from cost share in the form of copayment. Surprisingly, 30% of commercial and 28% of Medicare payers required neither coinsurance nor copay, a stark contrast from previous reports (**see figure 56**).

FIGURE 55

Medical Pharmacy Percentage of Spend for Member versus Payer 2015-2016*

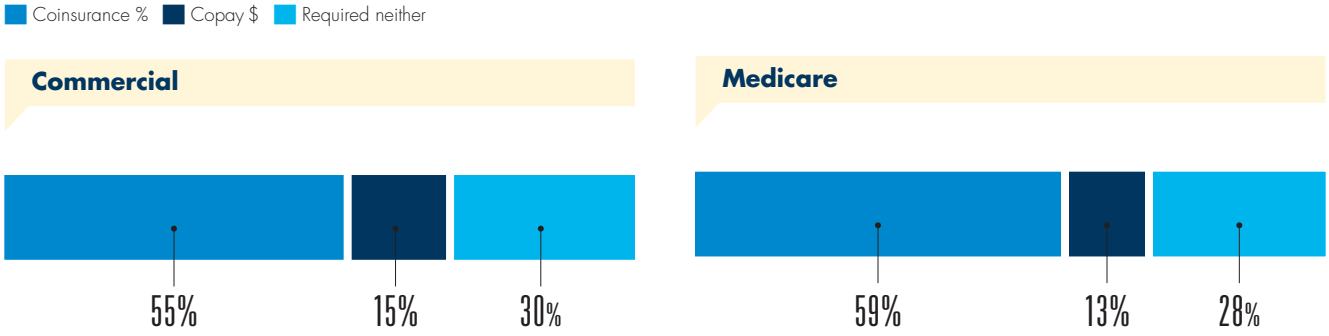


*Includes deductible, copay, and coinsurance.

FIGURE 56

2017 Medical Benefit Member Cost Share Type (% of payers)

Commercial (n=44); Medicare (n=32)



- Only 14% of payers varied cost share by drug, and 18% varied cost share by site of service (SOS). 47% of payers had the capability to vary cost share by drug, and 45% had the ability to vary cost share by site of service. Almost no payers (2%) varied cost share by indication, and very few (16%) had the capability (**see figures 57, 58, and 59**).
- For those few payers who implemented these strategies, 67% experienced positive outcomes from varying by drug, and 38% experienced positive outcomes from varying by site of service.
  - » Outcomes included cost savings and increased utilization of preferred products or site of service.

FIGURE 57

2017 Landscape of Varying Cost Share by Drug (% of payers)

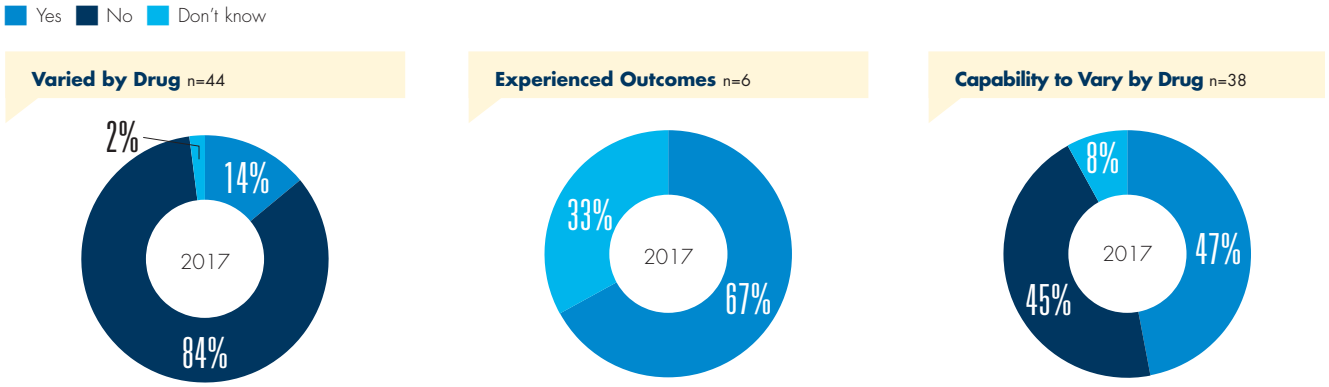


FIGURE 58

2017 Landscape of Varying Cost Share by Site of Service (% of payers)

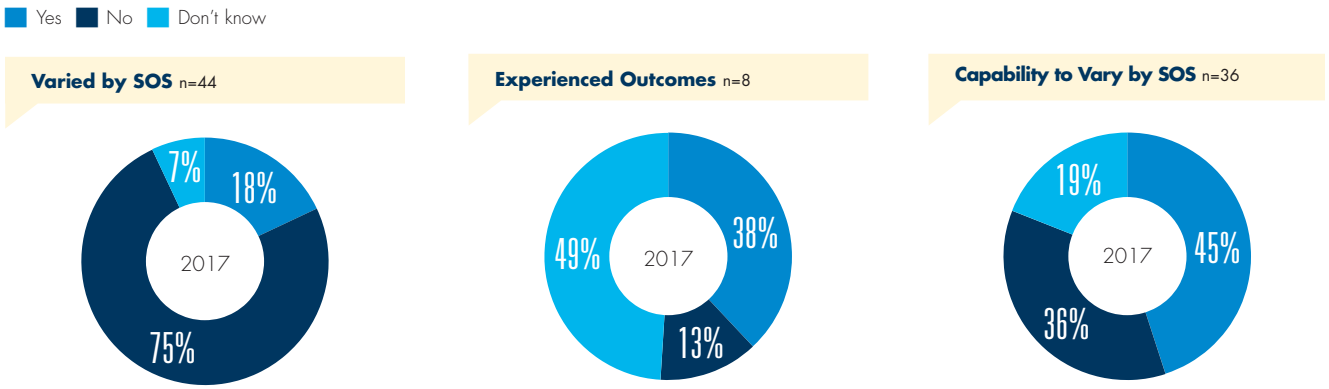
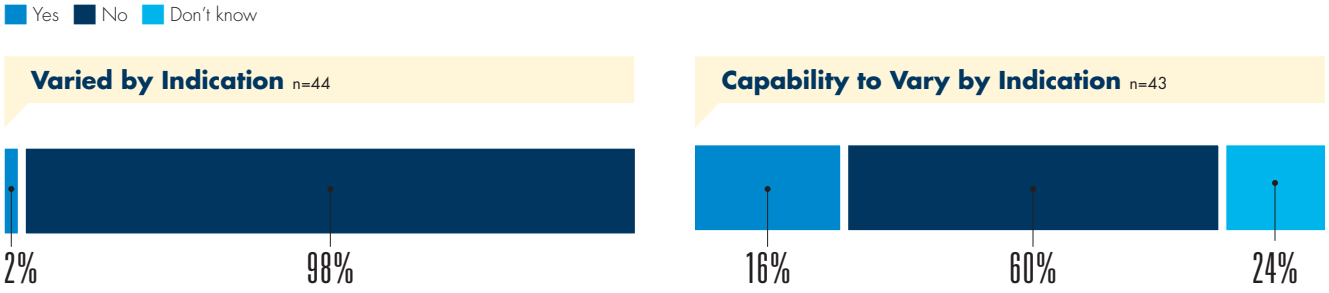


FIGURE 59

2017 Landscape of Varying Cost Share by Indication (% of payers)



Provider Network and Reimbursement Management

- Two-thirds of commercial payers (68%) had a site of service program, while 44% of Medicare payers had this program (**see figure 60**).
  - » Reimbursement across sites of service in the Medicare space tends to be similar, which is why fewer Medicare plans employ this strategy.
  - » Under commercial plans, 80% experienced an average of 26% savings, while 50% of Medicare plans experienced 13% savings, on average, with their site of service programs.
- In the last 12 months, one-third of payers implemented a narrow network of specialists that administer medical benefit drugs as a cost-management strategy for both commercial and Medicare. Few payers are looking to implement this approach in the next 12 months if they have not already (**see figure 61**).

Average Savings from SOS Program

Commercial (n=30); Medicare (n=20)

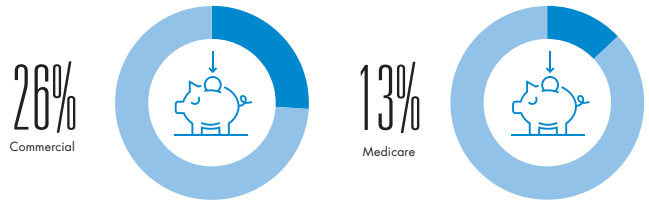


FIGURE 60

2017 Site of Service Program (% of payers)

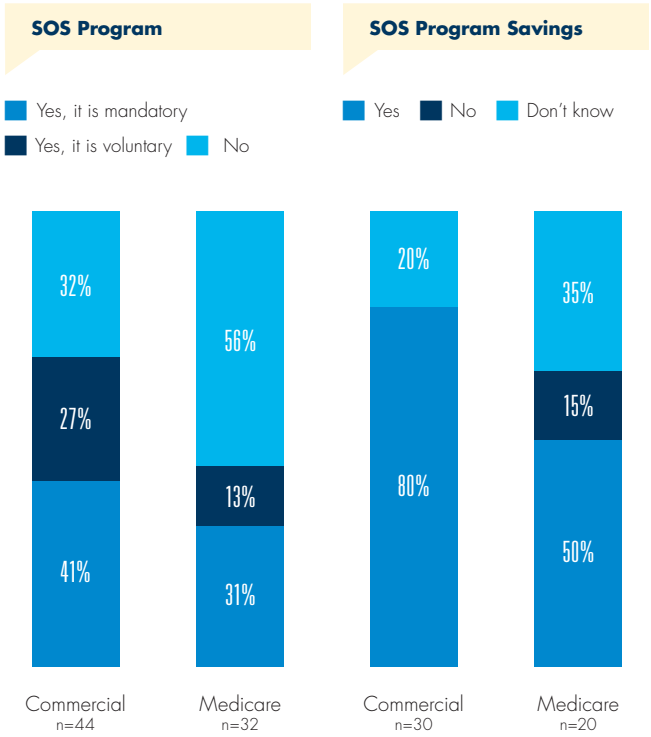
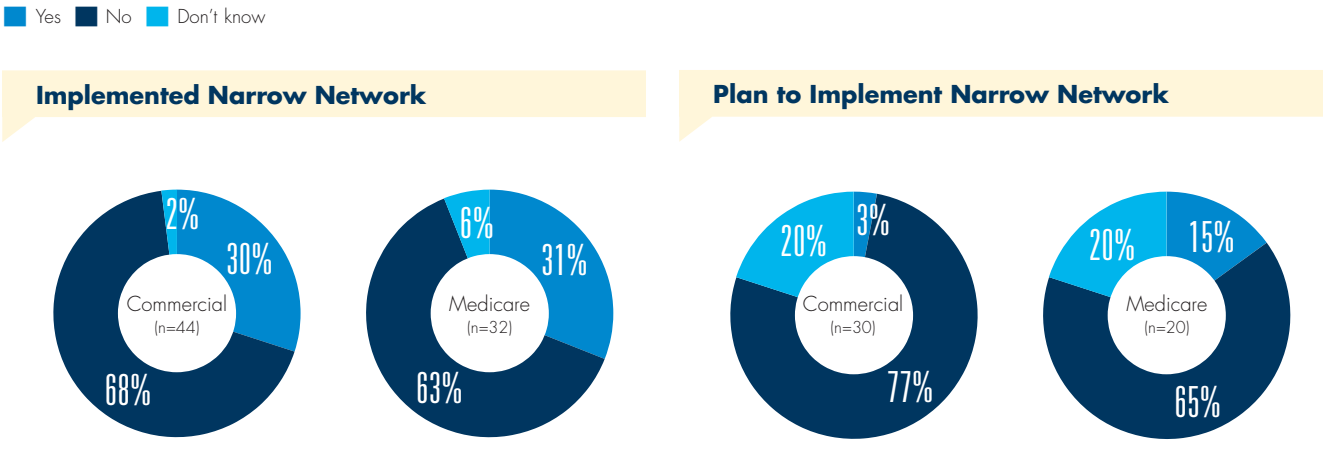


FIGURE 61

2017 Current and Anticipated Narrow Network Approach (% of payers)



Biosimilar Reimbursement

- In 2017, for biosimilars on the market, commercial payers used an ASP Plus x% or the Medicare reimbursement model (WAC + 6% then ASP + 6% of reference product) for 53% of lives. Although 67% of plans that manage both commercial and Medicare lines of business utilized the same models, suggesting ASP plus x% would be the dominate model in Medicare, 41% of Medicare lives were under a Medicare reimbursement model (**see figure 62**).
- One-third of payers (32%) preferenced biosimilars over their reference product.
- More than one-quarter of payers (27%) required members to step through a biosimilar before utilizing its reference product. Of payers who did not require a step therapy, only 31% planned to implement step therapy in the future (**see figure 64**).
  - » Payers indicated that a significant cost differential of 27% would be necessary for them to implement a step therapy protocol. FDA designation of interchangeability or provider network acceptance/support of strategy would be other prompts for implementation of step therapy protocols (**see figure 63**).

32% of payers preferenced biosimilars over the reference product

FIGURE 62

2017 Biosimilar Reimbursement Strategy (% of lives)

Commercial (n=44; 66 million covered lives); Medicare (n=28; 7 million covered lives)

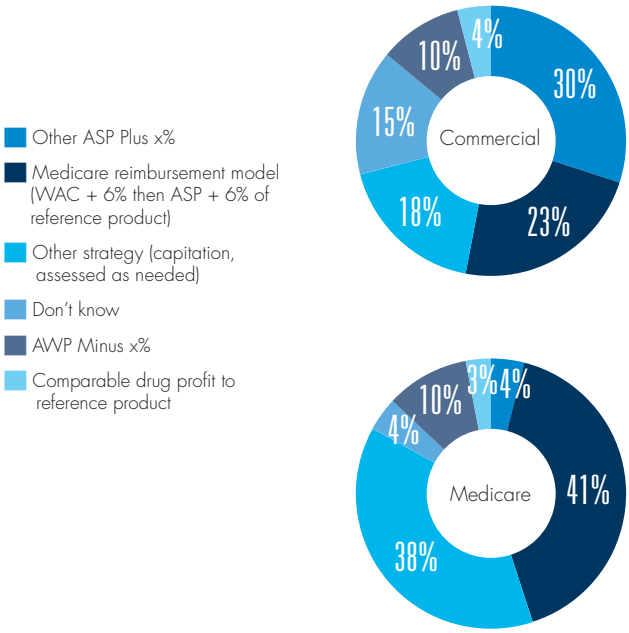
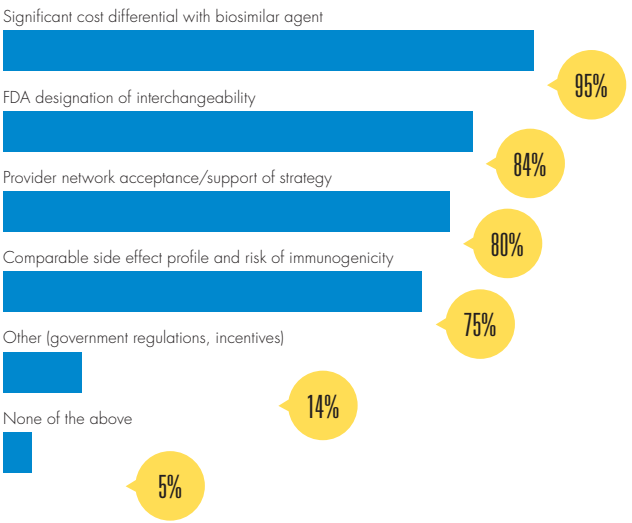


FIGURE 63

2017 Biosimilar Step Therapy Protocol Considerations (% of payers)

n=44



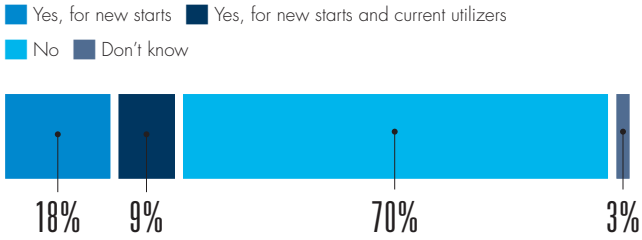
27% Cost differential to implement step therapy

FIGURE 64

2017 Biosimilar Step Therapy Protocol (% of payers)

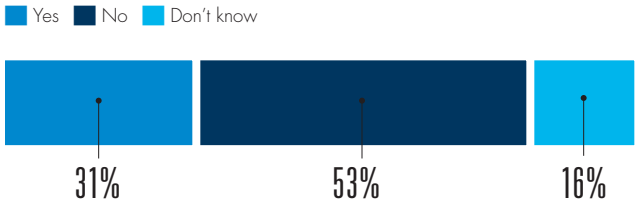
Current Step for Biosimilars

(n=44)



Plan to Implement Step

(n=32)



Accountable Care Organizations

- In 2017, 32% of payers had accountable care organization (ACO) models in their networks. For these plans with ACO models, approximately 10% of their health plan members were enrolled (**see figure 65**).
  - Of those payers who implemented an ACO model, most (79%) had plans to expand this population over the next 12 months.

For health plans with ACO models, 10% of members were enrolled in ACOs

FIGURE 65

2017 Payers with ACO Models (% of payers)

n=44

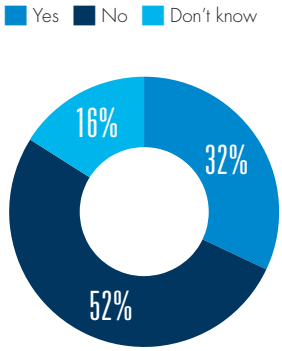
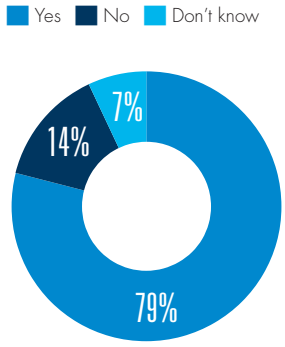


FIGURE 66

Payers Planning to Expand ACOs in Next Year (% of payers)

n=14



Alternative Payment Models

In 2017, 45% of payers implemented an alternative payment model (APM).

- 27% of payers employed bundled payment methodologies, and 23% were engaged in value-based contracting opportunities (**see figure 67**).
  - Surprisingly, the majority (80%) of value-based contracts did not include partnership with pharmaceutical manufacturers, inferring value-based agreements were established between plans and their network providers.
- The most frequently reported disease state associated with APMs was breast cancer (30%) (**see figure 68**).
- 30% of payers experienced savings from their APMs, and 50% of those payers experienced more savings than through traditional reimbursement programs (**see figures 69 and 70**).
- 35% of payers with APMs saw a positive impact on their quality measures, most often reporting improvement in utilization trends/prescribing patterns and the American Society of Clinical Oncology (ASCO) Quality Oncology Practice Initiative (QOPI) measures (**see figures 71 and 72**).

For plans with APMs, 19% of providers utilized an APM in 2017

FIGURE 67

2017 Piloted APM Programs (% of payers)

n=44

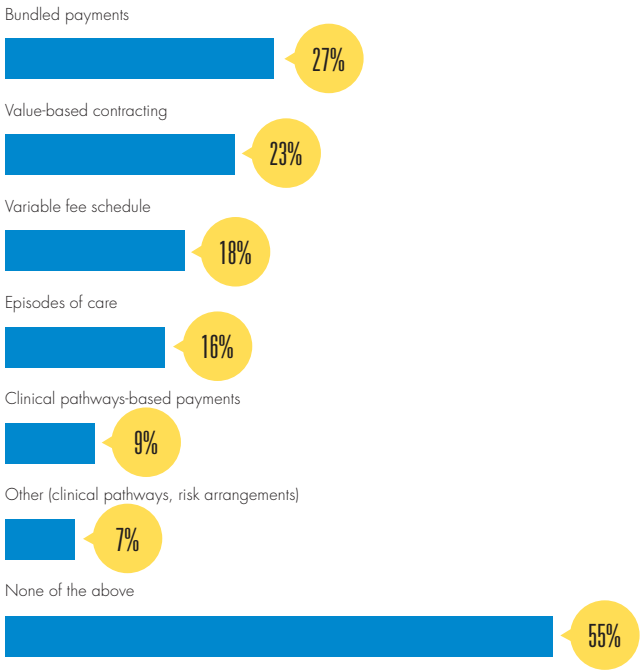


FIGURE 68

2017 Disease-State-Specific APM Programs

(% of payers)

n=20

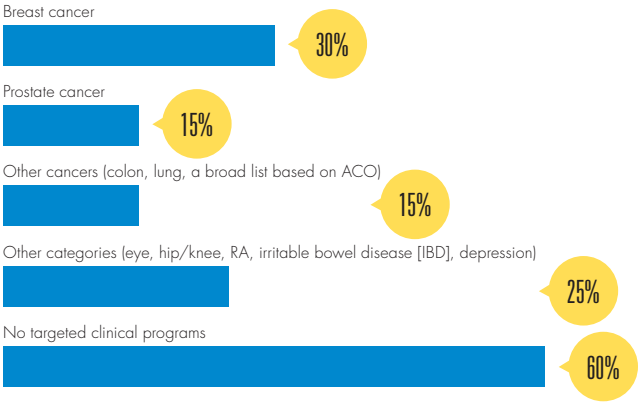


FIGURE 69

2017 Payers with Savings from APM Programs

(% of payers)

n=20

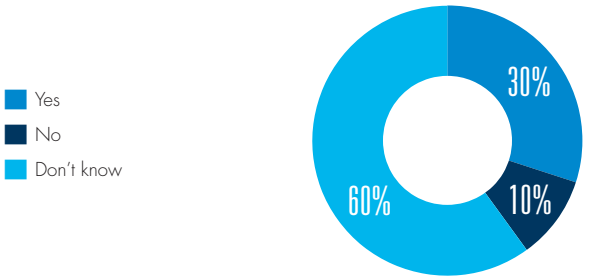


FIGURE 70

2017 Savings for APM Programs vs. Traditional Program

(% of payers)

n=6

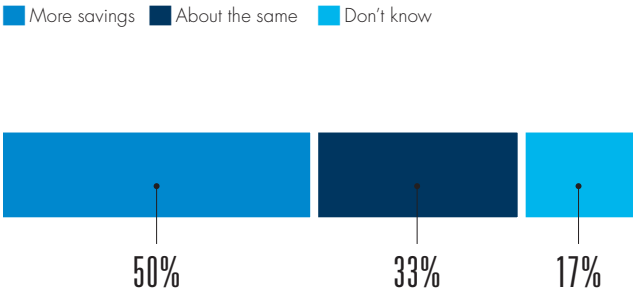


FIGURE 71

2017 APM Impact on Quality Measures

(% of payers)

n=20

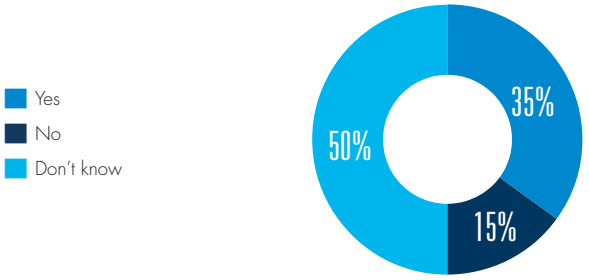
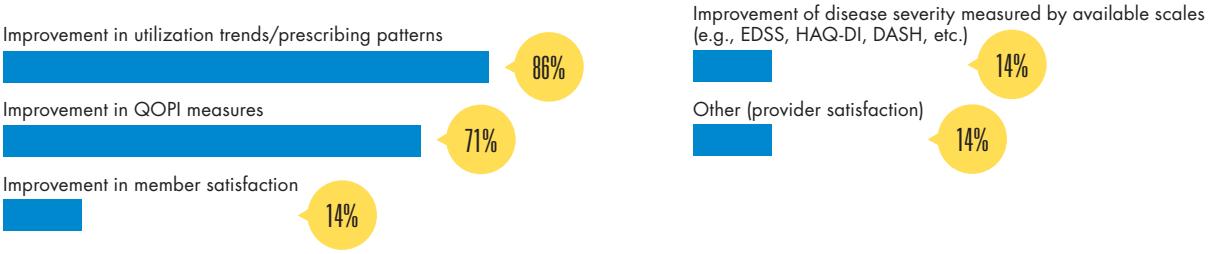


FIGURE 72

2017 APM Improvement in Quality Measures (% of payers)

n=7



Health Information Data

Only one-third (35%) of payers had providers in their network collecting and sharing quality and outcomes data with the plan. One-quarter (27%) of these plans saw a positive result from the collection of this data, such as increased adherence to programs, changes to dosing guidelines, product preferencing, and service delivery planning (**see figures 73 and 74**).

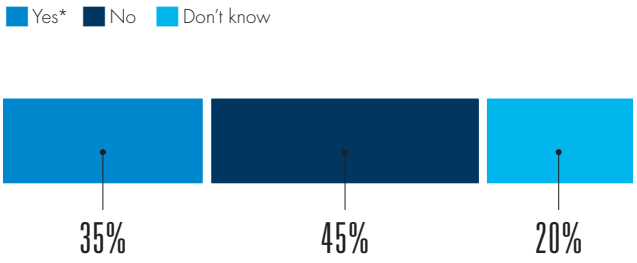
Medical benefit claims systems were not originally designed to manage drugs; therefore, legacy systems do not have a designated field to capture NDC information. We evaluated if payers collected NDC information for commercial and Medicare lines of business.

- In 2017, 61% of commercial plans and 47% of Medicare plans were capturing, storing, and/or reporting NDC data (**see figure 75**).
  - Of plans that did not collect NDC data, 35% of commercial and 41% of Medicare payers planned to start collecting in the next 12-18 months (**see figures 76 and 77**).

FIGURE 73

2017 Providers Collecting and Reporting Outcomes Data (% of payers)

n=44



*Types of data: Healthcare Effectiveness Data and Information Set (HEDIS) elements, biometric, QOPI, other medical records

FIGURE 74

2017 Changes Based on Outcomes of Data Collection

n=15

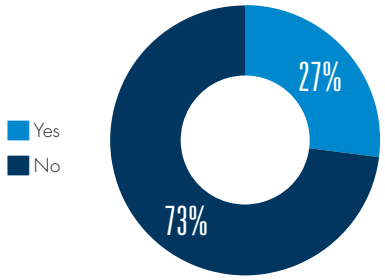


FIGURE 75

2017 Payers Collecting NDC Data

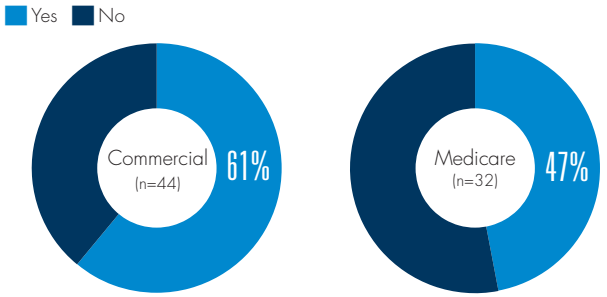


FIGURE 76

2017 Current NDC Data Collection

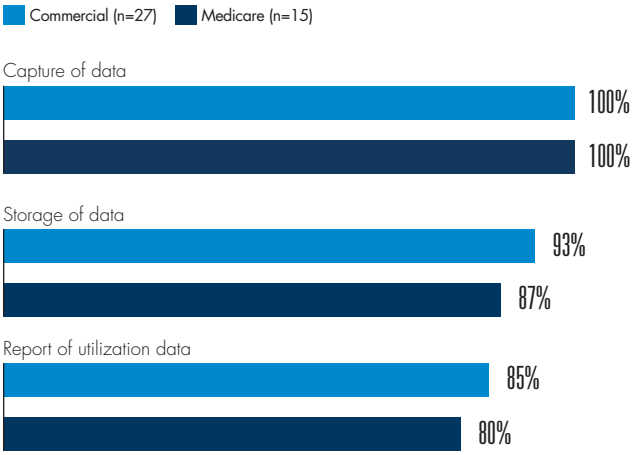
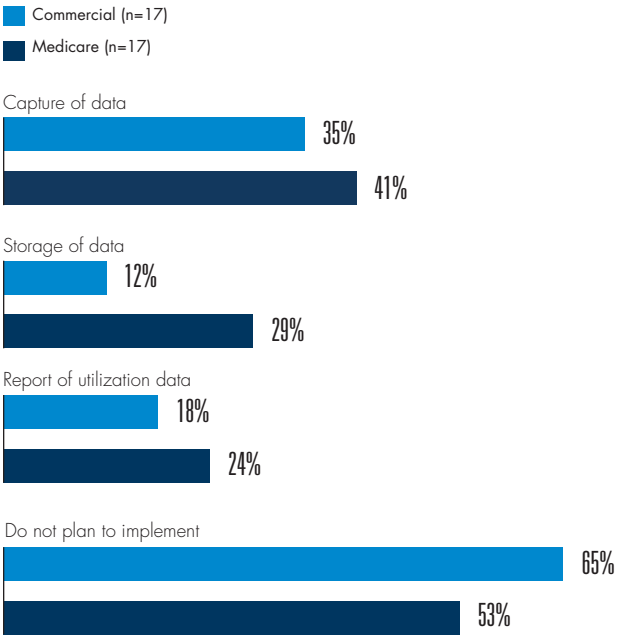


FIGURE 77

2017 NDC Data Collection in the Next 12-18 Months



Administration Code Reimbursement

- In commercial and Medicare, the administration code associated with the highest spend was for IV chemotherapy infusion for up to one hour (**see figures 78 and 79**).
  - For commercial members in the hospital outpatient setting, administration code unit cost increased an average of 14% from 2015 to 2016.
  - For commercial members in the physician office, administration code unit costs saw an average decrease of 3%.
- Administration codes in Medicare saw an all-around decrease across both sites of service settings.
  - For Medicare members in hospital outpatient setting, administration code unit cost decreased an average of 2% from 2015 to 2016.
  - For Medicare members in physician office, administration code unit costs saw an average decrease of 3% from 2015 to 2016.
- As described in previous reports, administration code unit costs in the hospital outpatient setting are typically four times higher than the physician off setting for commercial, and double for Medicare.

FIGURE 78

2016 Top Five Commercial Administration Codes by Total PMPM for Hospital Outpatient and Physician Office

CPT Code	CPT Description	Hospital OP Unit Cost	Physician Office Unit Cost	Total PMPM
96413	Chemotherapy administration, IV infusion technique; up to one hour, single or initial substance/drug	$651.90	$200.09	$1.65
96372	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); subcutaneous or intramuscular	$104.50	$27.41	$0.71
96365	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); initial, up to one hour	$415.00	$91.06	$0.69
20610	Arthrocentesis, aspiration, and/or injection, major joint or bursa without ultrasound guidance	$400.75	$103.09	$0.67
96375	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); each additional sequential IV push of a new substance/drug	$122.50	$34.52	$0.65

FIGURE 79

2016 Top Five Medicare Administration Codes by Total PMPM for Hospital Outpatient and Physician Office

CPT Code	CPT Description	Hospital OP Unit Cost	Physician Office Unit Cost	Total PMPM
96413	Chemotherapy administration, IV infusion technique; up to one hour, single or initial substance/drug	$294.43	$142.54	$2.64
20610	Arthrocentesis, aspiration, and/or injection, major joint or bursa without ultrasound guidance	$112.41	$58.98	$1.50
96372	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); subcutaneous or intramuscular	$43.15	$23.26	$1.25
96365	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); initial, up to one hour	$164.38	$71.18	$1.03
67028	Intravitreal injection of a pharmacologic agent (separate procedure)	$279.56	$101.22	$0.90

Legislative Update

The Trump administration entered the White House with an ambitious agenda. First on the agenda was repealing and replacing the Affordable Care Act (ACA) of 2010[1]. Much of the president's first year in office was dominated by this unsuccessful effort, but Congress did repeal the individual mandate in legislative action in its 2017 tax reform bill, and the president – through executive action – eliminated the ACA's premium tax credits and cost-sharing reduction payments for the cost of insurance purchased through the Health Insurance Marketplace. The legislative calendar also included efforts to begin taking steps to address high drug prices, as well as to find ways to tackle the opioid crisis gripping the nation. Healthcare and health policy were a constant focus in 2017—a trend we do not anticipate to wane in the near future.

Concern for High Drug Prices

A draft executive order on drug prices was leaked in summer 2017, suggesting the administration was interested in taking steps to reduce regulatory barriers to speed the drug-approval process and revise trade policies to protect intellectual property rights. That draft executive order, however, has not been finalized or issued. The administration has had difficulty charting a path forward on this issue and, instead, has deferred to executive-branch agencies, including the new commissioner of the FDA, who has taken a variety of preliminary regulatory steps to improve competition in the generic and biosimilar markets.[2]

Congress also has struggled to find a path forward. The Senate Committee on Health, Education, Labor, and Pensions (HELP) announced a series of hearings over the summer to begin to address the challenges surrounding high drug prices. During the first hearing, Democrats chose to focus the debate on repealing and replacing the ACA, rather than drug prices, and the Republican chairman postponed future hearings given the partisan nature of the first. When a second hearing was scheduled, witnesses included the pharmaceutical industry, pharmacy benefit management (PBM) industry, and drug distributors who debated the causes for high drug prices — with little consensus over possible policy responses. Much of the debate centered on list prices and rebates. The executive and legislative processes, thus far, suggest there are sharply different views on what to do and little political consensus within the White House or Congress.

The judicial branch also has been involved in the dialogue on high drug prices, including 2017 court decisions which may have the effect of speeding biosimilars to market. The remanded decision included a finding that biosimilar manufacturers are not required to give reference drugmakers 180 days' advance notice following FDA approval and prior to launch.[3] The executive branch and the courts likely will face these critical drug issues in the coming years.

> MedPAC's June 2017 annual report to Congress... encouraged Congress to establish, by 2022, a Drug Value Program (DVP) for Medicare Part B drugs, which would be voluntary for providers.

Physician Payment and Payment Reform Updates

Administration Withdraws Medicare Part B Payment Reform Demonstration

On Oct. 4, 2017, the Centers for Medicare & Medicaid Services (CMS) published a notice[4] announcing it was officially withdrawing a proposed rule[5], issued in March 2016 under the previous administration, for implementation of a Medicare Part B Drug Payment Reform Demonstration. Under this demonstration, CMS had proposed a two-phase model to test whether alternative drug payment designs in Medicare Part B would help reduce Medicare expenditures, while preserving or enhancing beneficiary care. The October 4 notice stated the proposed rule was being withdrawn to "ensure agency flexibility in re-examining these important issues and exploring new options and alternatives with stakeholders as [CMS] develop[s] potential payment models that support innovative approaches to improve quality, accessibility, and affordability, reduce Medicare program expenditures, and empower patients and doctors to make decisions about their healthcare." It remains to be seen whether CMS will revisit the model.

MedPAC Recommends Drug Value Program for Part B

Within MedPAC's June 2017 annual report to Congress, the commission finalized its recommendation encouraging Congress to establish, by 2022, a Drug Value Program (DVP) for Medicare Part B drugs, which would be voluntary for providers.[6] Under the DVP, private vendors would negotiate drug prices with manufacturers; providers would then buy the drugs at the vendor-negotiated rate, and Medicare would pay providers that rate plus an administration fee based on either the physician fee schedule or the outpatient prospective payment system. Providers also would have a chance to share in any cost savings generated by the DVP. The DVP incorporates aspects of CMS' withdrawn Medicare Part B Payment Reform Demonstration with that agency's former Competitive Acquisition Program, which

1. Office of the Press Secretary, the White House, "Executive order: minimizing the economic burden of the patient protection and affordable care act pending repeal" (Jan. 20, 2017). https://www.federalregister.gov/documents/2017/01/24/2017-01799/minimizing-the-economic-burden-of-the-patient-protection-and-affordable-care-act-pending-repeal (Dec 2017).
2. U.S. Food and Drug Administration, "Statement from FDA Commissioner Scott Gottlieb, M.D. on new steps to improve FDA review of shared Risk Evaluation and Mitigation Strategies to improve generic drug access" (Nov. 8, 2017), https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm584259.htm.
3. U.S. Court of Appeals for the Federal Circuit, Amgen Inc., Amgen Manufacturing Limited v. Sandoz Inc., 2015-1499 (Dec. 14, 2017), http://www.cafc.uscourts.gov/sites/default/files/opinions-orders/15-1499.Opinion.12-13-2017.1.PDF.
4. CMS, "Medicare Program; Part B Drug Payment Model; Withdrawal," Federal Register, vol. 82, no. 191 (Oct. 4, 2017): 46182, agency/docket no. CMS-1670-WN (RIN 0938-AS85), https://www.gpo.gov/fdsys/pkg/FR-2017-10-04/pdf/2017-21420.pdf.
5. CMS Proposed rule, "Medicare Program; Part B Drug Payment Model," Federal Register, vol. 81, no. 48 (March 11, 2016): 13230-13261. agency/docket no. CMS-1670-P (RIN 0938-AS85), https://www.gpo.gov/fdsys/pkg/FR-2016-03-11/pdf/2016-05459.pdf.
6. Medicare Payment Advisory Commission, "Report to the Congress: Medicare and the Health Care Delivery System" (June 2017), http://medpac.gov/docs/default-source/reports/jun17_reporttocongress_sec.pdf?sfvrsn=0.

involved purchasing Part B drugs from lowest-cost suppliers.

The MedPAC annual report also includes several other recommended changes to the reimbursement model for drugs paid for under Part B: improving ASP data reporting, modifying the payment rate, limiting payment rate increases, and instituting consolidated billing codes. MedPAC endorsed these recommendations at its spring 2017 meeting. While there is no legislative vehicle at this time, if one emerges, MedPAC's support may provide added momentum.

340B Drug Pricing Program

The 340B Drug Pricing Program requires drug manufacturers to provide substantial discounts (of up to 50 percent) on outpatient drugs as a condition of receiving Medicaid and Medicare Part B payments.[7] Though the program was established in 1992 with bipartisan support and still enjoys such support today, Congress has begun revisiting this program out of concern it is drifting from its initial mission. Of particular concern has been hospitals may not always be using the savings to serve disadvantaged patients[8,9].

CMS Finalizes 2018 Payment Rule for Part B Reimbursable Drugs and Biologics

Partly in response, on Nov. 13, 2017, CMS published the 2018 Medicare hospital outpatient payment final rule,[10] under which CMS finalized a reduction in Part B reimbursement for most separately payable drugs and biologics acquired by hospitals under the 340B program. Beginning Jan. 1, 2018, instead of ASP plus 6 percent (i.e., 106 percent ASP) for Part B-covered drugs, CMS has reduced the payment for Part B-covered drugs acquired under 340B to ASP minus 22.5 percent (i.e., 77.5 percent ASP). The payment change sparked significant reaction by hospital associations, three of whom filed a lawsuit in November 2017 to block the final rule. The 340B program is likely to continue to be the focus of increased oversight and focus by federal policymakers and regulators.

> In November, the CMS 2018 Medicare hospital outpatient payment final rule... finalized a reduction in Part B reimbursement for most separately payable drugs and biologics acquired by hospitals under the 340B program.

House Committee Recommends Increased Oversight of 340B Program

On January 10, 2018, the House Energy and Commerce Committee issued a new report with recommendations for improving the administration of the 340B Drug Discount Program, primarily through changes in the federal Health Resources & Services Administration's (HRSA) regulatory authority and requiring transparency and accountability from covered entities (CE)[11].

The report recommends Congress provide the HRSA with additional resources and staff to conduct more rigorous oversight of 340B, including the ability to improve program integrity, clarify program requirements, monitor and track program use, and ensure low-income and uninsured patients directly benefit from the program. The report further indicates that the absence of reporting requirements in the 340B statute has resulted in a lack of data and transparency on how CEs use the program and its value. In the opinion of the committee, reforming 340B to promote transparency and accountability will allow for an accurate accounting of the full scope of the use of the program and will help promote program integrity and oversight.

Another recommendation suggests a possible change to the metric used to determine whether hospitals and clinics are eligible to partake in 340B. The report comes as hospitals are in the midst of suing the Trump administration over a CMS rule effectively reducing $1.6 billion in 340B payments.

Biosimilar Payment Policy Update

Biosimilars are biological products approved on the basis of comparability to a biologic previously approved by the FDA. Due to the nature of the complex molecules used to produce biosimilars, the regulatory pathway for biosimilars is different from that for generic drugs, and their treatment within drug benefit programs also often differs.

In the 2016 Medicare Physician Fee Schedule final rule, CMS updated the payment rule for biosimilars to clarify the payment amount for a biosimilar is based on the ASP of all national drug codes assigned to the biosimilar biological products included within the same billing and payment code, with CMS grouping biosimilar products to the same reference product into the same payment calculation.[12] However, on Nov. 15, 2017, CMS published a reversal of this policy.[13]

In the 2018 Medicare Physician Fee Schedule final rule, CMS again reversed course on grouping biosimilars for Part B payment. No longer will the federal agency group biosimilars common to one reference product in the same HCPCS code; rather, each biosimilar will henceforth receive its own unique HCPCS code effective Jan. 1, 2018. Given their significance, CMS anticipates these changes will be completed by mid-2018.

On Jan. 11, 2018, MedPAC voted to recommend requiring discounts on biosimilars in the Part D coverage gap manufacturer discount program (which already are required for brand biologics). The Medicare Payment Advisory Commission's MedPAC recommendations also would exclude biosimilars from counting toward out-of-pocket spending; MedPAC made a similar recommendation in 2016 for brand biologics. This latter recommendation (to count the undiscounted price of biosimilars toward out-of-pocket spending) may have the effect of speeding Part D beneficiaries through the coverage gap and into catastrophic coverage.

7. Public Health Service Act, Pub. L. 78-410, 58 Stat. 682/42 U.S.C. Sec. 256b. https://www.ssa.gov/OP_Home/comp2/F078-410.html
8. Office of the Inspector General, Department of Health & Human Services, "Part B payments for 340B-purchased drugs," report no. OEI-12-14-00030 (November 2015), https://oig.hhs.gov/oei/reports/oei-12-14-00030.pdf.
9. Conti RM, Bach PB. The 340B Drug Discount Program: hospitals generate profits by expanding to reach more affluent communities. Health Affairs 2014 Oct; 33(10): 1786-1792. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4591849.
10. CMS Final Rule with Comment Period, "Medicare program: hospital outpatient prospective payment and ambulatory surgical center payment systems and quality reporting programs," Federal Register, vol. 82, no. 217: 52356-52637 (Nov. 13, 2017), agency/docket no. CMS-1678-FC (RIN 0938-AT03), https://www.federalregister.gov/documents/2017/11/13/2017-23932/medicare-program-hospital-outpatient-prospective-payment-and-ambulatory-surgical-center-payment.
11. House Energy and Commerce Committee, "Review of the 340B Drug Pricing Program", (January 2018) https://energycommerce.house.gov/wp-content/uploads/2018/01/20180110Review_of_the_340B_Drug_Pricing_Program.pdf.
12. CMS, "Part B biosimilar biological product payment and required modifiers," (Dec. 21, 2017), http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Part-B-Drugs/McrPartBDrugAvgSalesPrice/Part-B-Biosimilar-Biological-Product-Payment.html.
13. CMS Final Rule, "Medicare program; revisions to payment policies under the Physician Fee Schedule and other revisions to Part B for CY 2018; Medicare shared savings program requirements; and Medicare Diabetes Prevention Program," Federal Register, vol. 82, no. 219 (Nov. 15, 2017), agency/docket no. CMS-1676-F (RIN 0938-AT02), https://www.federalregister.gov/documents/2017/11/15/2017-23953/medicare-programs-revisions-to-payment-policies-under-the-physician-fee-schedule-and-other-revisions.

Specialty Drug Pipeline

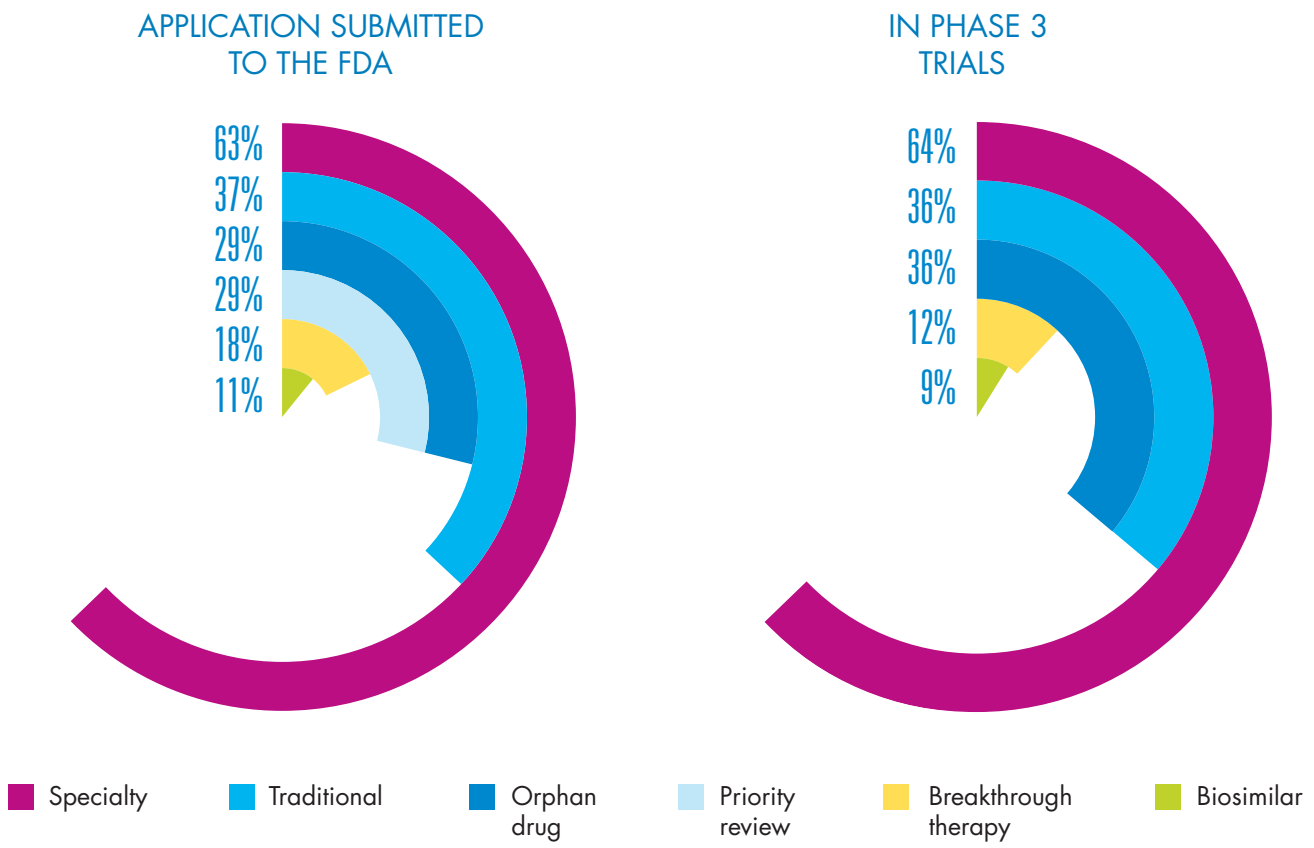
As first reported in the MRx Pipeline report from January 2018, below is an aerial outline of drugs with anticipated FDA approval through 2019 (**see figure 80**). It is not intended to be a comprehensive inventory of all drugs in the pipeline; emphasis is placed on drugs in high-impact categories.

Over the last 12 months, newly approved specialty drugs within the medical benefit were led by breakthrough therapies for oncology. 2017 also brought the landmark approval of gene therapy with two oncology CAR-T therapy agents, axicabtagene ciloleucel and tisagenlecleucel, forever changing cancer treatments moving forward. The FDA has approved 9 biosimilar agents, as of early 2018, however only 3 of these biosimilars are currently available. There are 5 biosimilars in the near-term pipeline, 2 oncologic, 2 blood modifiers and one BDAID.

For more detailed drug pipeline information, see the 2018 MRx Pipeline report referenced below.

FIGURE 80

Pipeline Drug Outlook Through 2018[3]



3. MRx Pipeline. January 2018. https://www1.magellanrx.com/magellan-rx/publications/mrx-pipeline.aspx. Accessed January 2018.

Appendix

2017 Report Methodology and Demographics

The methodology for the eighth edition of the Magellan Rx Management Medical Pharmacy Trend Report™ was developed with original guidance from our payer advisory board as well as reader feedback on our previous trend reports.

This report includes a combination of primary and secondary research methodologies to deliver a comprehensive view of payer perceptions and health plan actions related to provider-administered infused or injected drugs paid under the medical benefit, also referred to as medical benefit drugs. These medical benefit drugs are commonly used to treat cancer, autoimmune disorders, and immunodeficiencies.

The results of this study were a combination of findings from a survey of medical, pharmacy, and network directors at commercial health plans as well as medical benefit paid claims data across key lines of business (i.e., commercial and Medicare Advantage) and outpatient sites of service (i.e., physician offices, homes via home infusion, specialty pharmacies, and hospital outpatient facilities). Payer survey responses and paid claims data are distributed throughout all sections of the report. In light of this shift in reporting, full reports and exhibits are available in the appendix.

Payer Survey

The 2017 Magellan Rx Management Medical Pharmacy Trend Report™ payer survey included insights from U.S. health plans representing more than 128 million medical pharmacy lives. Data collection took place over two months in summer 2017 through a custom market research survey consisting of topics ranging from utilization and management trends to benefit design and provider network landscape. Validated results were analyzed based on percentage of payers or lives. Methodology for survey data analyses included stratification of payer sample by covered lives, small versus large plans, geographic dispersion, and respondent type (e.g., medical, pharmacy, or network directors).

Survey Respondent Sample

The payer survey included insights from a total of 46 U.S. payers representing more than 128 million medical pharmacy lives. Of the total number of respondents, 34 payers indicated they were responsible for managing Medicare Advantage lives in addition to their commercial population. Throughout the survey, these respondents were asked questions for their Medicare line of business in addition to their commercial lines of business.

Respondents represented an array of plan sizes as defined in **figure A1**. The respondent sample was split between plans with less than 1 million covered lives representing close to half (48%) of the respondent sample, and larger plans representing the remaining 52%. Health plan respondents were mainly pharmacy directors (76%) and medical directors (17%). The remaining respondents were provider network directors and consultants (7%).

Survey participants represented all major lines of business beyond commercial and Medicare Advantage, including managed Medicaid and health insurance exchanges. Overall, the largest line of business was commercial, representing 55% of the lives, while 10% of lives were attributed to Medicare Advantage (**see figure A2**).

A1

2017 Respondent Sample

PAYERS	Total count	Total count (%)	Total lives	Total lives (%)
Less than 500,000	20	44%	4,303,940	3%
500,000 to 999,999	2	4%	1,389,000	1%
1,000,000 to 4,999,999	18	39%	40,454,779	32%
5,000,000 or more	6	13%	82,166,485	64%
Total	**46**	**100%**	**128,314,204**	**100%**

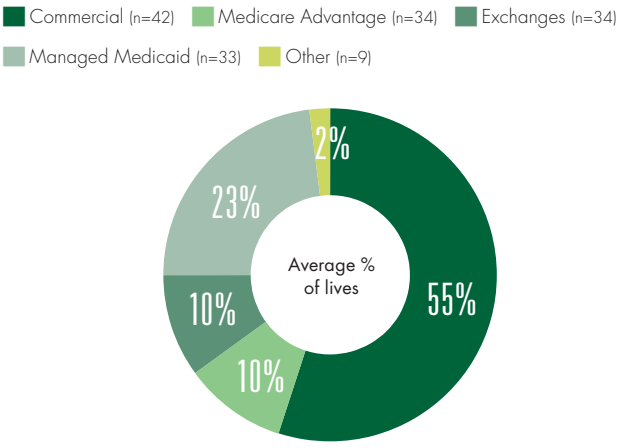
For the analysis on the following page, the individual proportion of lives reported by line of business was taken into consideration. For example, Health Plan A has 1 million covered lives where 50% are commercial and 50% are Medicare. In the analysis, their lives would represent 500,000 in commercial and 500,000 in Medicare (**see figure A2**).

Survey respondents from national plans constituted 13% of payers, but represented 50% of total lives. Regional plans accounted for the other 50% of covered lives. The following map illustrates the geographic distribution of regional plan lives, showing half of participants on the West Coast, 31% located in the East, and 19% of lives located in the central region. National plans represented across all 50 states and Washington, D.C. were not included in this analysis (**see figure A3**).

A2

2017 Lives by Line of Business

n=46; 128 million covered lives



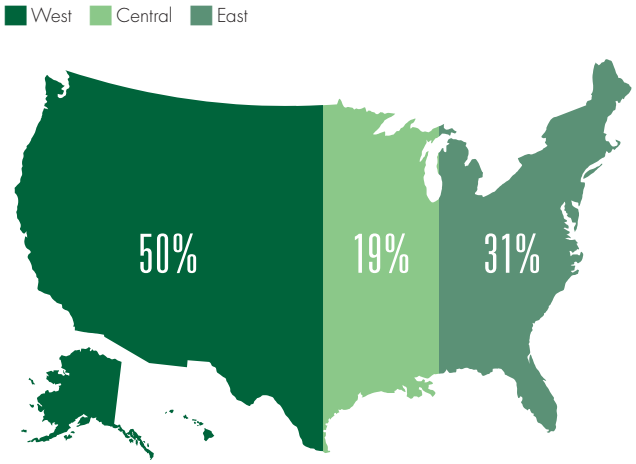
REPRESENTED LIVES n=82,963,276

Commercial	Medicare Advantage
70,554,299	12,408,977

A3

2017 Regional Plans – Geographic Dispersion of Lives

(n=40; 64 million lives) National plans represented across all 50 states and Washington D.C., were not included in this analysis.



Therapeutic Classes Represented

Therapeutic classes represented in the survey were inclusive of current medical benefit drugs. To ensure accuracy of responses, payer respondents were provided with examples of drugs for each of the categories presented (**see figure A4**).

Health Plan Claims Data

Medical benefit drug utilization and trend data were collected through secondary analyses of commercial and Medicare Advantage health plan medical paid claims data for the most recent calendar years. Claims data were analyzed for medical pharmacy utilization across 925 HCPCS codes and several outpatient sites of service, including the physician office, home, and hospital outpatient facility. Claims billed from participating and nonparticipating providers were included. Vaccines and radiopharmaceuticals were excluded from the analyses. Administration codes were analyzed separately in only one analysis (**see figures 78 and 79**); their utilization was not included in any other analysis. Most analyses compared calendar years 2015 and 2016. In some cases, the past five years were analyzed to show a longer period of year-over-year spend and trend. Year over year, shifts in claims data information have occurred due to adjustments.

A4

Medical Benefit Drug Examples for Therapeutic Classes in Payer Survey

Drug Category	Example Drugs
Antihemophilic Factors	Advate, Xyntha, Recombinate
Biologic Drugs for Autoimmune Disorders	Remicade, Orencia, Cimzia, Actemra, Simponi ARIA, Stelara, Entyvio
Oncology	Avastin, Cyramza, Vectibix, Erbitux
Oncology Support	CSFs, ESAs, antiemetics, folinic acids
Immune Globulin	IV: Gamunex-C, Gammagard Liquid; subcutaneous (SubQ): Hizentra, HyQvia
Multiple Sclerosis	Tysabri, Lemtrada
Ophthalmic Injections	Lucentis, Eylea, Macugen, bevacizumab
Viscosupplementation	Orthovisc, Synvisc, Supartz, Hyalgan, Euflexxa, Gel-One, Monovisc

PMPM Trends

A5

Medical Pharmacy Allowed Amount PMPM and Annual Trend by LOB by Site of Service 2012-2016

COMMERCIAL									
	2012	2013	% Change ('12-'13)	2014	% Change ('13-'14)	2015	% Change ('14-'15)	2016	% Change ('15-'16)
Home	$2.49	$2.86	15%	$3.02	6%	$3.59	19%	$4.43	23%
Hospital OP	$8.14	$9.50	17%	$10.47	10%	$10.68	2%	$13.38	25%
Physician office	$5.53	$5.76	4%	$6.56	14%	$7.38	12%	$8.45	15%
Total/Average	**$16.16**	**$18.12**	**12%**	**$20.06**	**11%**	**$21.65**	**8%**	**$26.26**	**21%**
MEDICARE									
Home	$2.55	$3.44	35%	$4.12	20%	$3.02	-27%	$3.39	12%
Hospital OP	$15.55	$17.09	10%	$19.02	11%	$17.97	-6%	$19.34	8%
Physician office	$21.54	$23.49	9%	$21.74	-7%	$24.69	14%	$24.24	-2%
Total/Average	**$39.64**	**$44.02**	**11%**	**$44.88**	**2%**	**$45.69**	**2%**	**$46.97**	**3%**

Therapeutic Class Trends

A6

Commercial Top 25 Trends by Disease States or Drug Categories by 2016 PMPM Spend

Rank	Therapy	2015 PMPM	2016 PMPM	2015-2016 % Change	% of Total PMPM	Cost per Claim	Members per 1,000	ASP Trend	AWP Trend
1	Oncology	$7.46	$9.17	23%	35%	$2,194	4.44	4%	7%
2	BDAID: Crohn's Disease/Ulcerative Colitis	$1.54	$2.38	55%	9%	$7,159	0.67	–	–
3	Immune Globulin	$1.73	$2.00	16%	8%	$4,154	0.41	0%	3%
4	Colony-Stimulating Factors	$1.77	$1.99	12%	8%	$3,916	1.08	-17%	1%
5	BDAID: Rheumatoid Arthritis	$0.94	$1.17	25%	4%	$4,819	0.43	11%	12%
6	Antihemophilic Factor	$0.98	$1.09	11%	4%	$20,960	0.06	2%	2%
7	Multiple Sclerosis	$0.52	$0.77	48%	3%	$8,610	0.13	6%	5%
8	BDAID: Psoriasis/Psoriatic Arthritis	$0.29	$0.57	99%	2%	$7,883	0.18	–	0%
9	Enzyme Replacement Therapy	$0.50	$0.54	7%	2%	$20,428	0.02	4%	3%
10	Antiemetics	$0.42	$0.48	14%	2%	$144	19.30	70%	8%
11	Hematology	$0.40	$0.48	18%	2%	$9,602	0.03	-4%	4%
12	Other	$0.57	$0.44	-24%	2%	$83	26.35	12%	12%
13	Infectious Disease	$0.38	$0.43	14%	2%	$94	22.52	5%	8%
14	Ophthalmic Injections	$0.32	$0.42	31%	2%	$1,008	0.89	0%	0%
15	Asthma/COPD	$0.28	$0.36	28%	1%	$335	6.11	–	–
16	Botulinum Toxins	$0.29	$0.35	18%	1%	$1,077	1.56	1%	4%
17	Contraceptives	$0.29	$0.32	9%	1%	$525	5.16	24%	5%
18	Unclassified	$0.42	$0.27	-35%	1%	$290	4.42	–	–
19	Gastrointestinal: Chemoprotectant/Hormonal	$0.23	$0.25	13%	1%	$6,564	0.07	4%	8%
20	Pain Management	$0.18	$0.25	40%	1%	$41	32.96	13%	3%
21	Viscosupplementation	$0.21	$0.25	22%	1%	$341	2.62	-1%	6%
22	Iron, IV	$0.13	$0.20	52%	1%	$390	1.55	0%	3%
23	Hereditary Angioedema	$0.20	$0.19	-4%	1%	$24,156	0.01	2%	4%
24	BDAID: Systemic Lupus Erythematosus	$0.14	$0.19	37%	1%	$4,237	0.05	1%	2%
25	BDAID: Other	$0.11	$0.16	41%	1%	$6,125	0.08	–	–

A7

Medicare Top 25 Disease States or Drug Categories by 2016 PMPM Spend

Rank	Therapy	2015 PMPM	2016 PMPM	2015-2016 % Change	% of Total PMPM	Cost per Claim	Members per 1,000	ASP Trend	AWP Trend
1	Oncology	$19.90	$21.99	11%	47%	$1,615	21.2	4%	7%
2	Ophthalmic Injections	$4.49	$4.57	2%	10%	$745	14.4	0%	0%
3	Colony-Stimulating Factors	$4.13	$3.75	-9%	8%	$2,553	3.8	-17%	1%
4	Immune Globulin	$2.79	$2.82	1%	6%	$3,282	0.97	0%	3%
5	BDAID: Rheumatoid Arthritis	$1.95	$1.65	-15%	4%	$3,411	1.0	11%	12%
6	Erythropoiesis-Stimulating Agents	$1.36	$1.14	-16%	2%	$689	2.9	-4%	3%
7	Hematology	$0.70	$0.91	29%	2%	$3,924	0.1	-4%	4%
8	Multiple Sclerosis	$0.85	$0.86	1%	2%	$5,838	0.2	6%	5%
9	Viscosupplementation	$0.74	$0.80	7%	2%	$286	12.0	-1%	6%
10	Gastrointestinal: Chemoprotectant/Hormonal	$0.79	$0.70	-12%	1%	$4,467	0.3	4%	8%
11	Antiemetics	$0.82	$0.70	-15%	1%	$155	11.4	70%	8%
12	BDAID: Crohn's Disease/Ulcerative Colitis	$0.60	$0.67	12%	1%	$4,177	0.4	–	–
13	Unclassified	$0.74	$0.66	-11%	1%	$613	5.3	–	–
14	Infectious Disease	$0.65	$0.64	-2%	1%	$99	26.3	5%	8%
15	Asthma/COPD	$0.64	$0.62	-4%	1%	$226	11.4	–	–
16	Other	$0.81	$0.58	-28%	1%	$49	47.6	12%	12%
17	Bone Resorption Inhibitors (Osteoporosis)	$0.37	$0.52	38%	1%	$742	6.6	-11%	6%
18	Antihemophilic Factor	$0.42	$0.43	2%	1%	$25,375	0.02	2%	2%
19	Botulinum Toxins	$0.34	$0.42	21%	1%	$900	2.5	1%	4%
20	Pulmonary Arterial Hypertension	$0.37	$0.33	-11%	1%	$9,042	0.0	4%	3%
21	Iron, IV	$0.29	$0.33	15%	1%	$308	4.1	0%	3%
22	Cardiovascular Agent	$0.19	$0.25	34%	1%	$115	9.4	–	–
23	BDAID: Psoriasis/Psoriatic Arthritis	$0.25	$0.24	-4%	1%	$5,013	0.1	–	0%
24	Alpha 1-Proteinase Inhibitor (for Emphysema)	$0.15	$0.24	57%	1%	$3,186	0.0	4%	2%
25	Corticosteroids	$0.19	$0.22	13%	0.5%	$9	137.8	–	–

Medical Benefit Top Drug Trends

A8

Commercial Top 25 Drugs by 2016 PMPM Spend

			PMPM			COST PER PATIENT			COST PER CLAIM			COST PER UNIT			MEMBERS PER 1000		
Rank	**HCPCS**	**Brand**	**2015**	**2016**	**% Change**	**2015**	**2016**	**% Change**	**2015**	**2016**	**% Change**	**2015**	**2016**	**% Change**	**2015**	**2016**	**% Change**
1	J1745	Remicade	$2.23	$2.81	26%	$31,707	$37,413	18%	$5,999	$6,547	9%	$119	$129	9%	0.3	0.3	5%
2	J2505	Neulasta	$1.64	$1.86	13%	$21,513	$24,417	14%	$5,726	$6,128	7%	$4,855	$4,902	1%	0.3	0.3	2%
3	J9355	Herceptin	$1.06	$1.26	19%	$46,604	$53,397	15%	$4,858	$5,358	10%	$120	$130	8%	0.1	0.1	4%
4	J9310	Rituxan	$1.02	$1.26	23%	$32,174	$36,234	13%	$8,186	$8,781	7%	$990	$1,087	10%	0.1	0.2	11%
5	J9035	Avastin	$1.14	$1.22	7%	$21,447	$23,658	10%	$4,490	$4,494	0%	$109	$111	2%	0.2	0.2	-2%
6	J2323	Tysabri	$0.51	$0.69	33%	$51,968	$64,375	24%	$7,123	$7,893	11%	$24	$27	11%	0.0	0.0	7%
7	J1561	Gamunex-C/ Gammaked	$0.61	$0.65	6%	$55,481	$59,910	8%	$5,272	$5,035	-4%	$68	$71	4%	0.0	0.0	-9%
8	J9299	Opdivo	–	$0.64	–	–	$59,632	–	–	$7,303	–	–	$38	–	–	0.0	–
9	J7192	Factor VIII (recombinant)	$0.47	$0.53	13%	$180,283	$202,074	12%	$16,482	$18,348	11%	$2	$3	26%	0.0	0.0	-6%
10	J1569	Gammagard Liquid	$0.55	$0.52	-5%	$48,201	$48,038	0%	$4,687	$4,385	-6%	$63	$61	-3%	0.0	0.0	-8%
11	J9306	Perjeta	$0.37	$0.46	27%	$41,155	$48,102	17%	$7,062	$7,547	7%	$15	$17	7%	0.0	0.0	9%
12	J0897	Xgeva/Prolia	$0.33	$0.41	22%	$4,650	$4,905	5%	$1,925	$1,996	4%	$21	$22	4%	0.3	0.4	18%
13	J3380	Entyvio	–	$0.41	–	–	$35,412	–	–	$7,629	–	–	$26	–	–	0.0	–
14	J3357	Stelara	$0.25	$0.38	53%	$31,944	$42,116	32%	$12,707	$15,026	18%	$193	$218	13%	0.0	0.0	11%
15	J1300	Soliris	$0.30	$0.36	21%	$440,328	$462,725	5%	$28,466	$28,490	0%	$286	$282	-1%	0.0	0.0	18%
16	J9305	Alimta	$0.31	$0.35	12%	$36,074	$38,265	6%	$7,319	$7,494	2%	$85	$89	5%	0.0	0.0	6%
17	J2357	Xolair	$0.27	$0.35	27%	$15,870	$17,743	12%	$2,299	$2,426	6%	$31	$35	11%	0.1	0.1	5%
18	J0585	Botox	$0.28	$0.33	17%	$2,561	$2,623	2%	$1,136	$1,093	-4%	$7	$6	-3%	0.5	0.6	16%
19	J9228	Yervoy	$0.22	$0.33	54%	$149,609	$180,143	20%	$48,273	$52,049	8%	$197	$201	2%	0.0	0.0	27%
20	J0129	Orencia	$0.21	$0.29	35%	$25,369	$31,139	23%	$3,392	$4,016	18%	$44	$51	16%	0.0	0.0	13%
21	J9264	Abraxane	$0.22	$0.27	20%	$25,664	$30,140	17%	$3,184	$3,252	2%	$16	$16	1%	0.0	0.0	3%
22	J0178	Eylea	$0.16	$0.25	60%	$9,038	$10,672	18%	$2,177	$2,172	0%	$1,045	$1,037	-1%	0.1	0.1	44%
23	J2353	Sandostatin LAR	$0.22	$0.25	14%	$45,347	$52,440	16%	$6,414	$7,179	12%	$218	$247	13%	0.0	0.0	-1%
24	J9041	Velcade	$0.21	$0.23	9%	$30,137	$30,335	1%	$2,019	$2,047	1%	$64	$67	4%	0.0	0.0	9%
25	J2469	Aloxi	$0.22	$0.22	-1%	$2,333	$2,442	5%	$423	$425	0%	$42	$43	1%	0.4	0.4	0%
	Top 25		**$12.82**	**$16.33**	**27%**	**$23,461**	**$26,674**	**14%**	**$3,998**	**$4,358**	**9%**	**$34**	**$39**	**16%**	**2.3**	**2.6**	**12%**
	Total Commercial		**$21.65**	**$26.26**	**21%**	**$1,763**	**$2,068**	**17%**	**$434**	**$493**	**13%**	**$11**	**$13**	**25%**	**50.5**	**52.2**	**3%**

Please note that due to rounding, some column totals do not add up accurately.

A9

Medicare Top 25 Drugs by 2016 PMPM Spend

			PMPM			COST PER PATIENT			COST PER CLAIM			COST PER UNIT			MEMBERS PER 1000		
Rank	HCPCS	Brand	2015	2016	% Change	2015	2016	% Change	2015	2016	% Change	2015	2016	% Change	2015	2016	% Change
1	J2505	Neulasta	$3.75	$3.50	-7%	$13,275	$14,091	6%	$3,786	$4,134	9%	$3,777	$4,131	9%	1.2	1.0	-9%
2	J9310	Rituxan	$3.28	$3.30	1%	$22,635	$23,880	6%	$5,086	$5,456	7%	$738	$813	10%	0.9	0.8	-7%
3	J9299	Opdivo	-	$2.90	-	-	$43,000	-	-	$4,918	-	-	$27	-	-	0.4	-
4	J9035	Avastin	$2.77	$2.43	-12%	$3,790	$2,726	-28%	$871	$635	-27%	$70	$75	7%	3.1	5.4	75%
5	J0178	Eylea	$2.01	$2.12	5%	$9,019	$9,917	10%	$2,043	$2,114	3%	$967	$993	3%	1.6	1.5	-6%
6	J2778	Lucentis	$2.19	$2.02	-8%	$9,771	$9,940	2%	$1,906	$1,932	1%	$398	$392	-2%	1.6	1.4	-11%
7	J0897	Xgeva/Prolia	$1.60	$1.80	12%	$2,861	$2,941	3%	$1,302	$1,388	7%	$15	$16	7%	3.6	2.7	-24%
8	J9355	Herceptin	$1.44	$1.62	13%	$32,113	$33,748	5%	$3,407	$3,767	11%	$88	$95	8%	0.3	0.3	8%
9	J1745	Remicade	$1.77	$1.48	-17%	$20,767	$21,225	2%	$3,809	$3,979	4%	$80	$85	7%	0.4	0.3	-15%
10	J9305	Alimta	$1.47	$1.18	-20%	$26,116	$24,895	-5%	$5,146	$4,818	-6%	$63	$65	3%	0.3	0.3	-18%
11	J9041	Velcade	$1.10	$1.16	6%	$22,048	$22,684	3%	$1,548	$1,422	-8%	$49	$52	6%	0.3	0.3	-1%
12	J1569	Gammagard Liquid	$1.02	$1.14	11%	$31,511	$34,923	11%	$3,647	$3,624	-1%	$47	$47	0%	0.1	0.1	-6%
13	J2323	Tysabri	$0.85	$0.75	-12%	$45,106	$41,662	-8%	$5,020	$5,262	5%	$17	$18	1%	0.1	0.1	2%
14	J2353	Sandostatin LAR	$0.79	$0.68	-13%	$34,609	$34,658	0%	$4,653	$4,932	6%	$156	$170	9%	0.1	0.1	-38%
15	J9264	Abraxane	$0.75	$0.68	-10%	$15,305	$15,420	1%	$1,907	$1,934	1%	$10	$10	4%	0.3	0.3	-14%
16	J0881	Aranesp	$0.79	$0.65	-19%	$5,693	$5,559	-2%	$1,052	$1,033	-2%	$4	$5	2%	0.9	0.7	-18%
17	J9217	Eligard/Lupron Depot	$0.61	$0.64	5%	$1,911	$1,926	1%	$937	$953	2%	$236	$245	4%	1.4	2.2	52%
18	J9033	Treanda	$0.88	$0.63	-29%	$26,737	$22,800	-15%	$3,912	$3,948	1%	$24	$27	11%	0.2	0.2	-18%
19	J1561	Gamunex-C/ Gammaked	$0.56	$0.62	11%	$32,266	$32,448	1%	$4,242	$3,856	-9%	$45	$46	2%	0.1	0.1	7%
20	J1300	Soliris	$0.46	$0.61	34%	$350,538	$360,247	3%	$19,889	$21,305	7%	$213	$221	4%	0.0	0.0	31%
21	J9271	Keytruda	-	$0.55	-	-	$43,146	-	-	$7,555	-	-	$47	-	-	0.1	-
22	J9306	Perjeta	$0.36	$0.49	36%	$26,505	$29,714	12%	$4,957	$4,952	0%	$11	$11	0%	0.1	0.1	24%
23	J0885	Procrit	$0.57	$0.49	-13%	$3,812	$3,934	3%	$483	$480	-1%	$13	$14	2%	1.0	0.8	-16%
24	J9047	Kyprolis	$0.50	$0.47	-5%	$42,668	$42,422	-1%	$1,873	$1,882	0%	$34	$34	1%	0.1	0.1	-1%
25	J9395	Faslodex	$0.44	$0.47	7%	$12,365	$13,460	9%	$1,758	$1,766	0%	$99	$98	-1%	0.2	0.2	-1%
	Top 25		**$29.96**	**$32.36**	**11%**	**$10,536**	**$10,829**	**3%**	**$2,015**	**$2,070**	**3%**	**$42**	**$42**	**1%**	**12.0**	**12.9**	**8%**
	Total Medicare		**$45.96**	**$46.97**	**3%**	**$1,975**	**$2,078**	**5%**	**$431**	**$472**	**10%**	**$12**	**$13**	**9%**	**96.1**	**96.9**	**1%**

Please note that due to rounding, some column totals do not add up accurately.

Utilization Management Tools

A10

2017 Commercial Medical Benefit Utilization Management Tools by Disease State or Drug Category

(% of payers) n=44

	Clinical Pathways	Differential Provider Reimbursement by Class (higher margins/ drug profit on lower cost alt. drugs)	Post-Service Claim Edits (e.g., maximum units and eligible diagnosis)	Prior Authorization/ Step Therapy	Other	No management tools
Antihemophilic Factors	5%	0%	23%	55%	14%	27%
Biologic Drugs for Autoimmune Disorders	16%	0%	23%	91%	9%	2%
Oncology	16%	0%	25%	75%	2%	16%
Oncology Support	14%	2%	27%	73%	2%	11%
Immune Globulin (IV/SubQ)	9%	0%	23%	84%	5%	9%
Multiple Sclerosis	5%	0%	23%	89%	9%	5%
Ophthalmic Injections	7%	5%	23%	70%	2%	14%
Viscosupplementation	2%	2%	23%	66%	5%	20%
Average	**9%**	**1%**	**24%**	**75%**	**6%**	**13%**

A11

2017 Medicare Medical Benefit Utilization Management Tools by Disease State or Drug Category

(% of payers) n=32

	Clinical Pathways	Differential Provider Reimbursement by Class (higher margins/ drug profit on lower cost alt. drugs)	Post-Service Claim Edits (e.g., maximum units and eligible diagnosis)	Prior Authorization/ Step Therapy	Other	No management tools
Antihemophilic Factors	6%	0%	13%	44%	9%	41%
Biologic Drugs for Autoimmune Disorders	13%	0%	22%	75%	9%	13%
Oncology	6%	0%	22%	66%	6%	22%
Oncology Support	9%	3%	22%	66%	6%	19%
Immune Globulin (IV/SubQ)	9%	0%	19%	66%	9%	19%
Multiple Sclerosis	3%	0%	19%	78%	9%	13%
Ophthalmic Injections	6%	3%	19%	59%	6%	25%
Viscosupplementation	3%	0%	19%	63%	9%	25%
Average	**7%**	**1%**	**19%**	**64%**	**8%**	**22%**

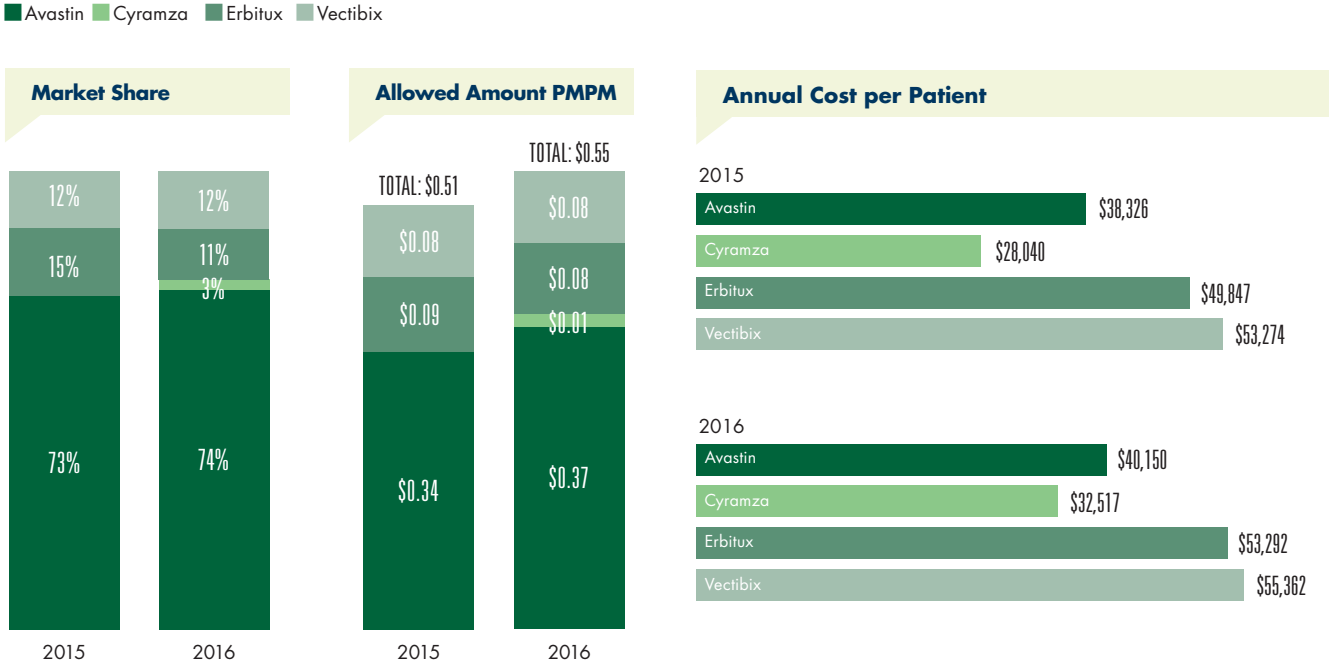
Medical Benefit Market Share and Member Utilization by Category

Note: Market share analyses were run at diagnosis level (ICD-9 and ICD-10) but did not take into consideration the disease stage or line of therapy.

Oncology

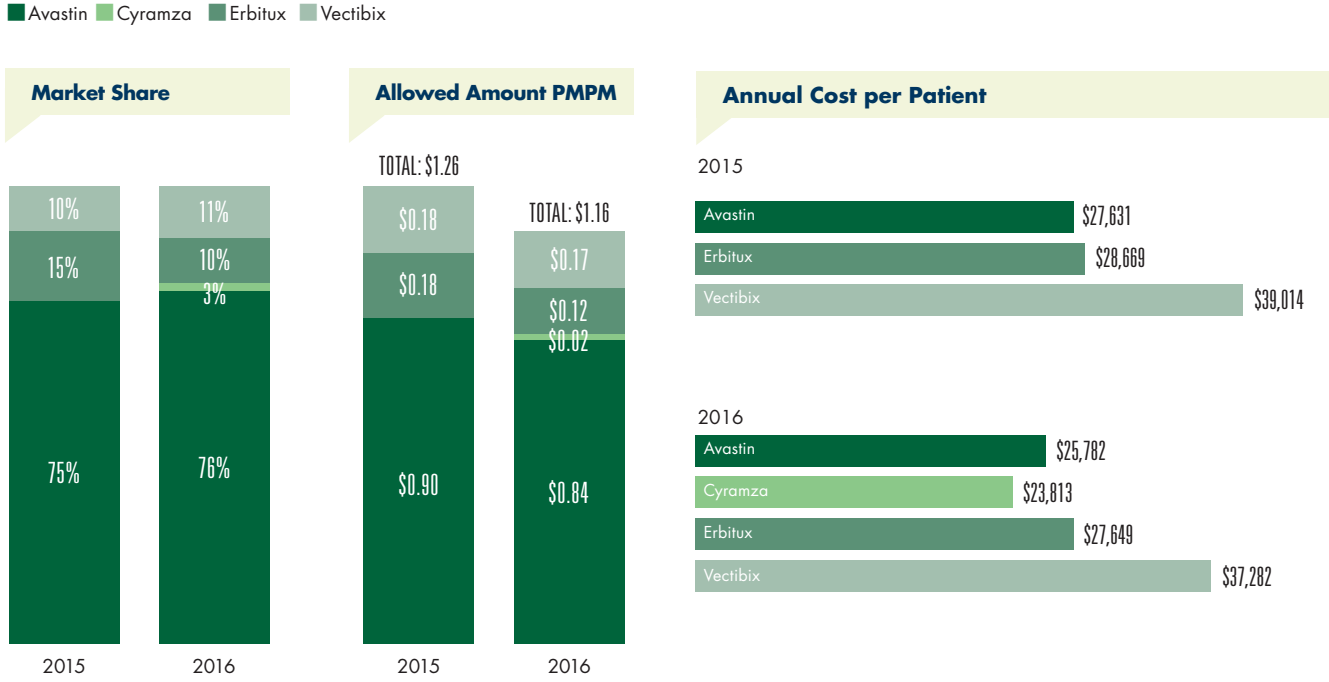
A12

Commercial Branded Colorectal Agents Market Share, Spend, and Cost per Patient



A13

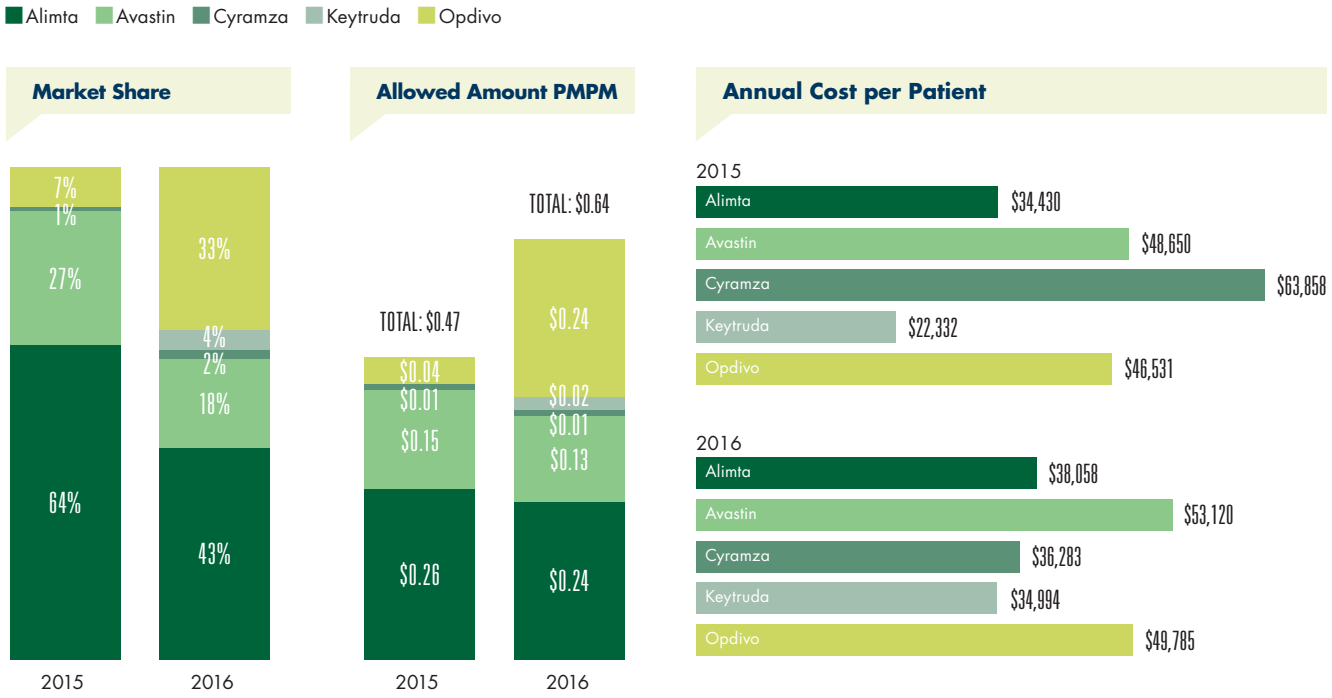
Medicare Branded Colorectal Agents Market Share, Spend, and Cost per Patient



Please note that due to rounding, some column totals do not add up accurately.

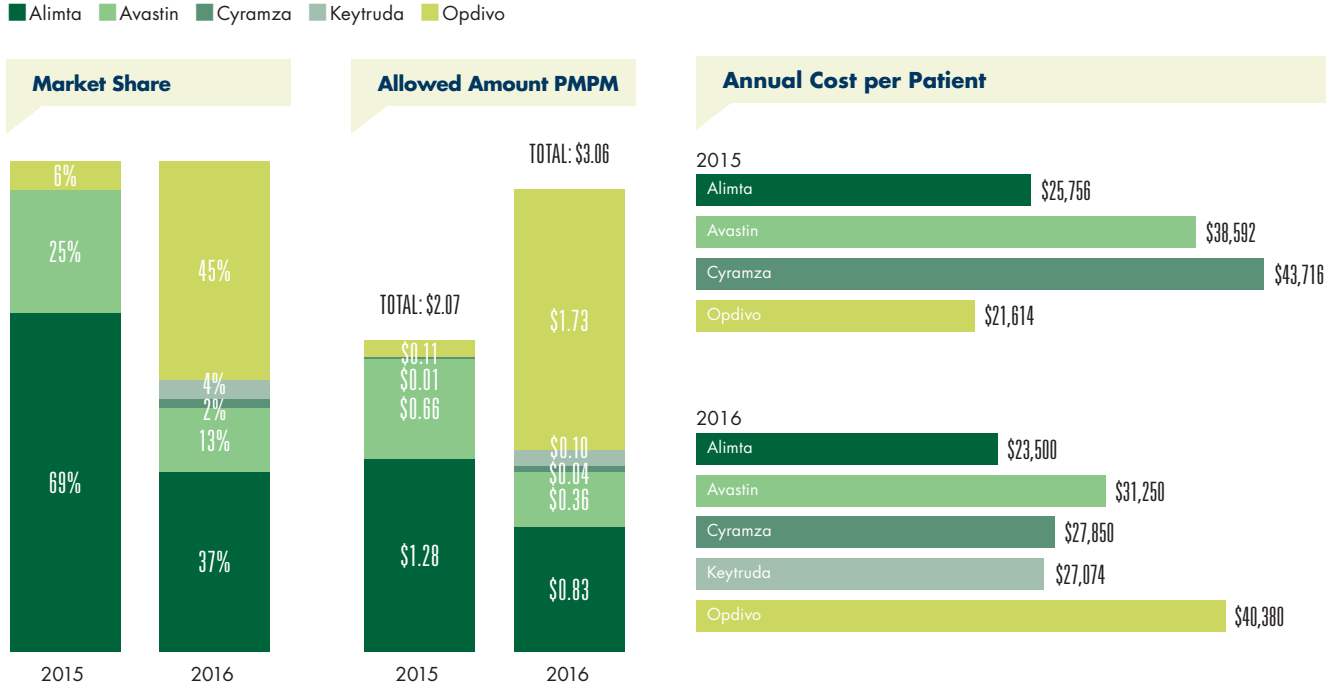
A14

Commercial Branded Non-Small Cell Lung Cancer Agents Market Share, Spend, and Cost per Patient



A15

Medicare Branded Non-Small Cell Lung Cancer Agents Market Share, Spend, and Cost per Patient



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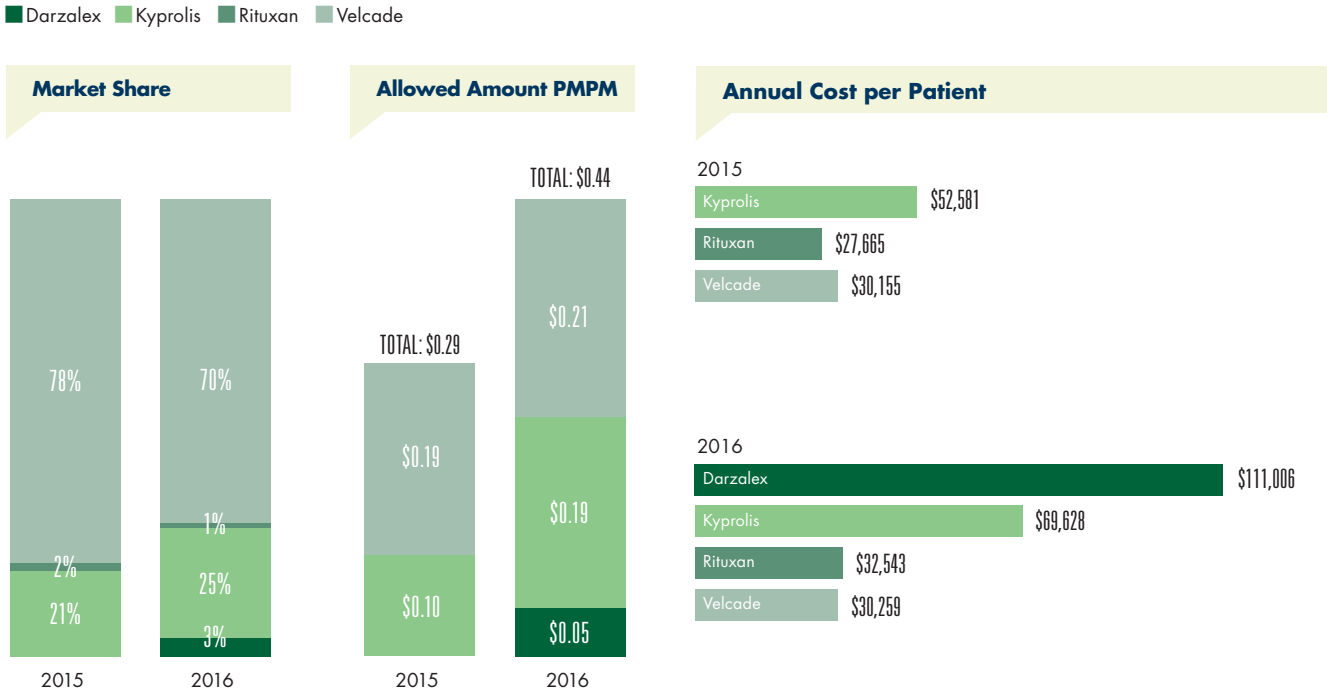
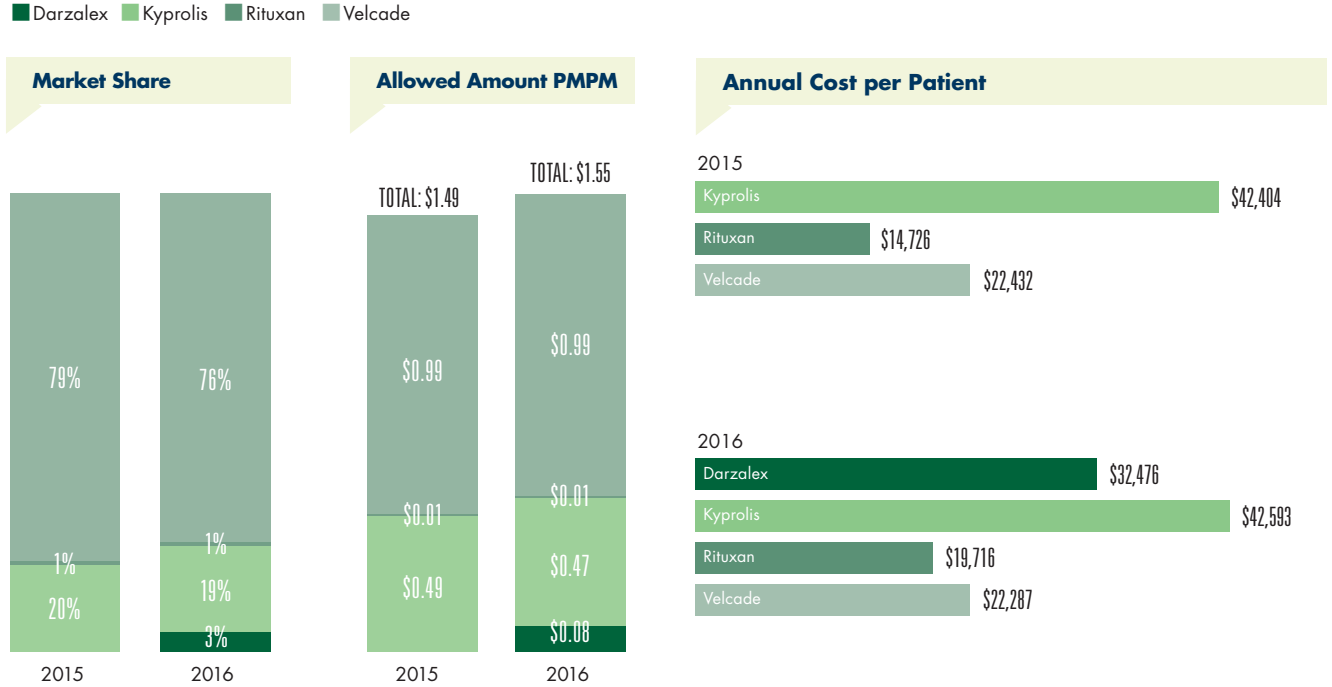
A16

Commercial Branded Multiple Myeloma Cancer Agents Market Share, Spend, and Cost per Patient



A17

Medicare Branded Multiple Myeloma Cancer Agents Market Share, Spend, and Cost per Patient

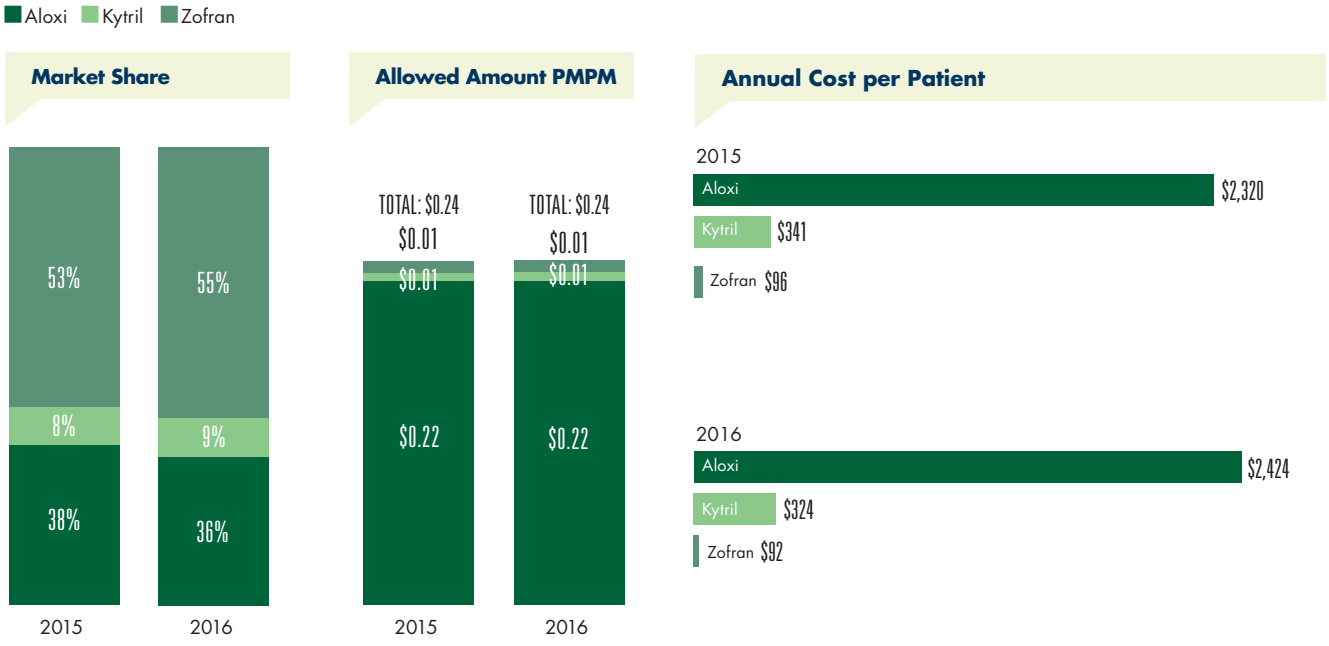


Please note that due to rounding, some column totals do not add up accurately.

Oncology Support

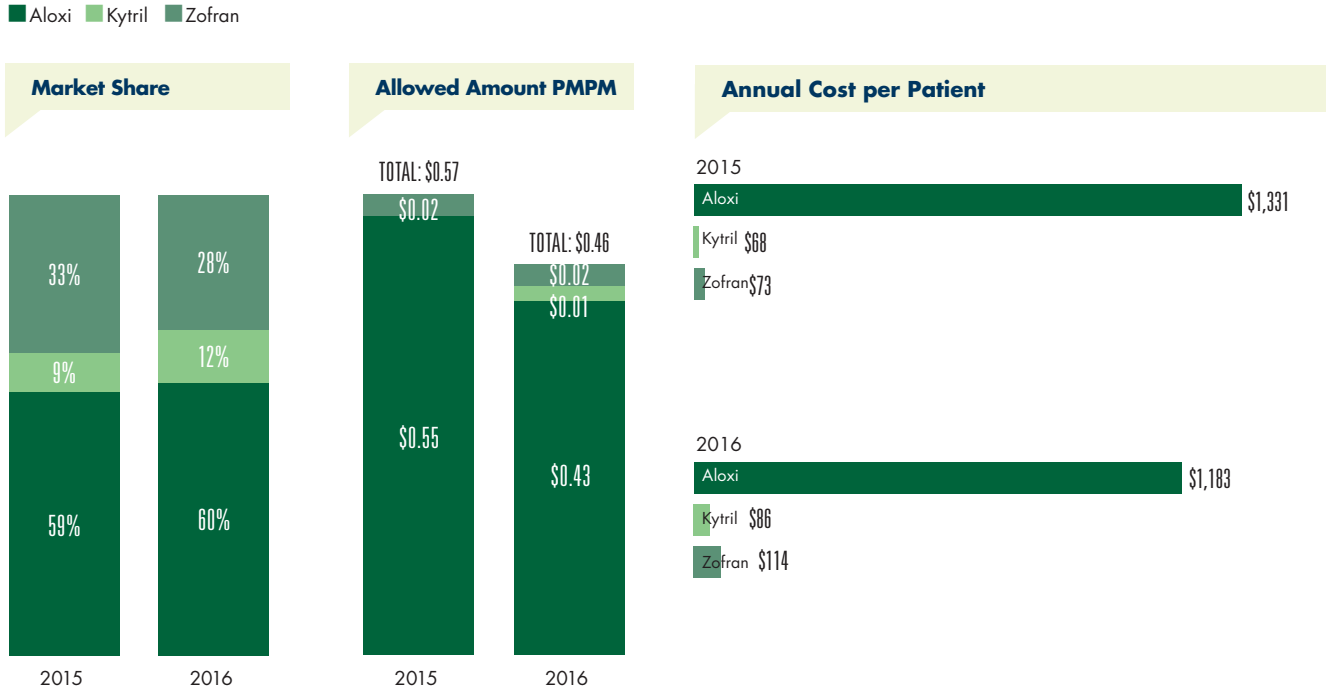
A18

Commercial Antiemetic Market Share, Spend, and Cost per Patient



A19

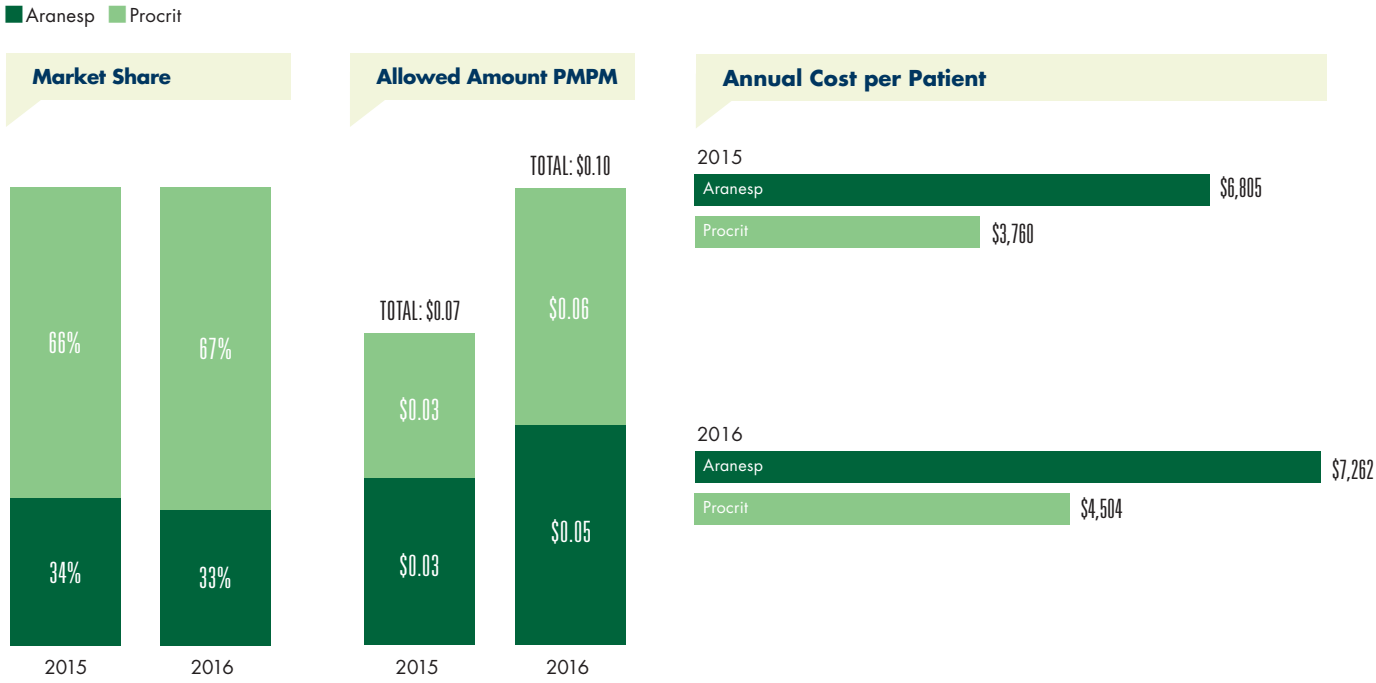
Medicare Antiemetic Market Share, Spend, and Cost per Patient



Please note that due to rounding, some column totals do not add up accurately.

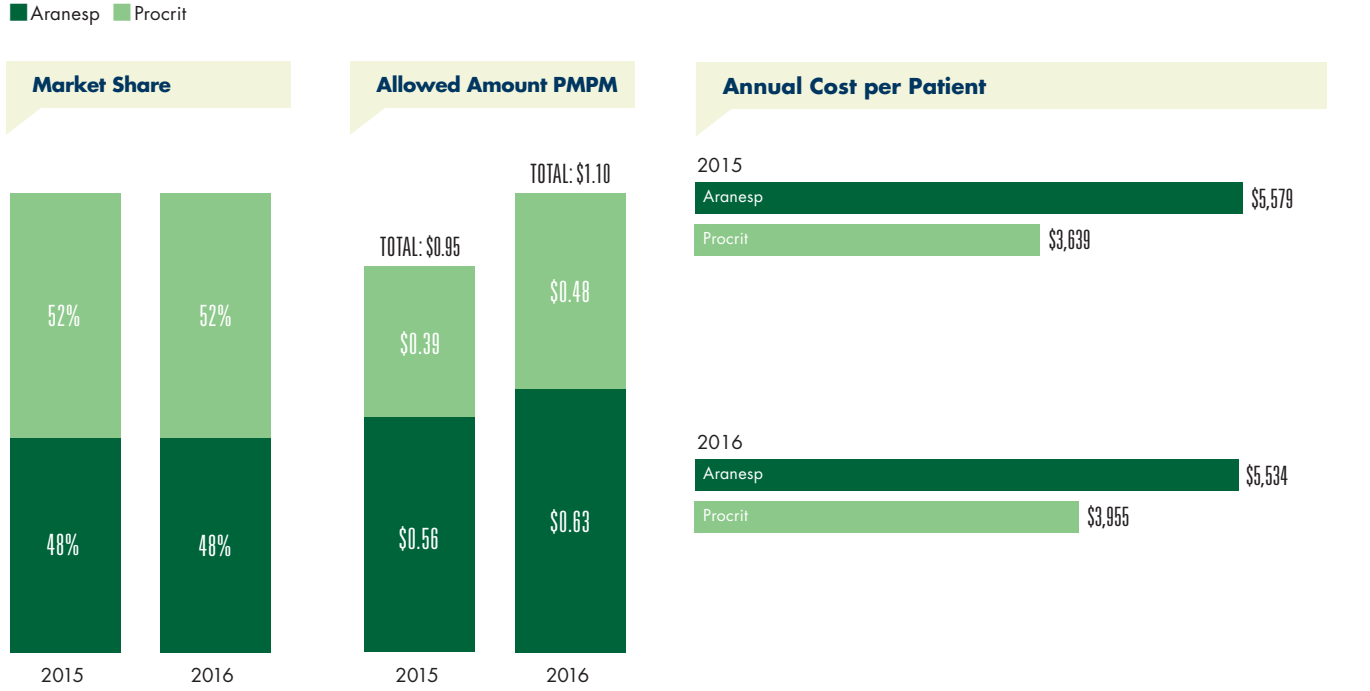
A20

Commercial Erythropoiesis-Stimulating Agents Market Share, Spend, and Cost per Patient



A21

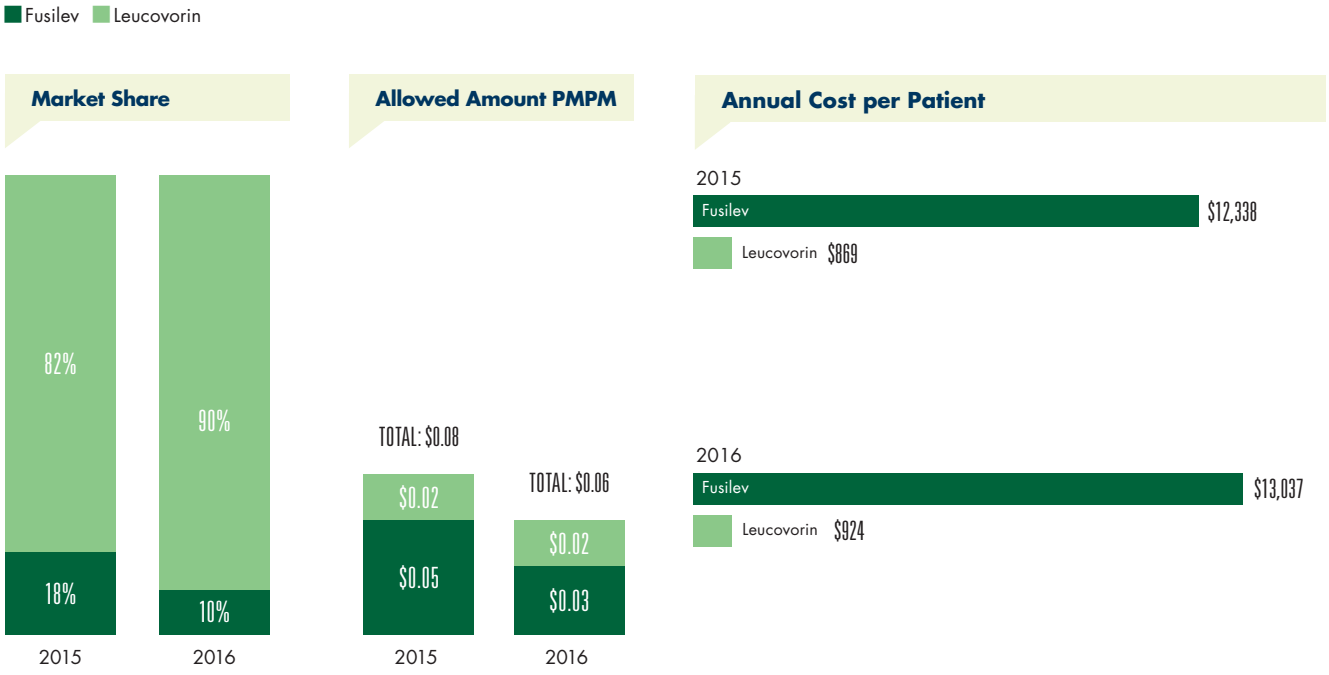
Medicare Erythropoiesis-Stimulating Agents Market Share, Spend, and Cost per Patient



Please note that due to rounding, some column totals do not add up accurately.

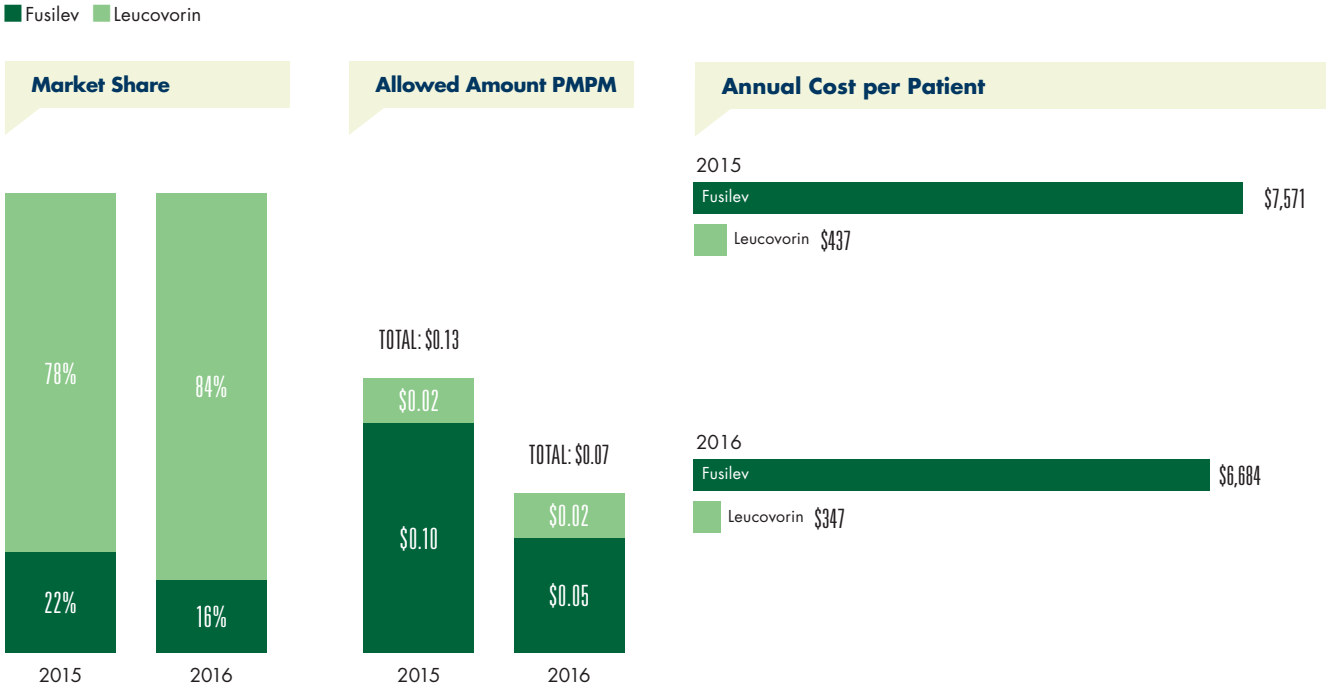
A22

Commercial Folinic Acids Market Share, Spend, and Cost per Patient



A23

Medicare Folinic Acids Market Share, Spend, and Cost per Patient



Please note that due to rounding, some column totals do not add up accurately.

Site of Service Trends

A24

Commercial Drugs in the Top 25 Not Included in Category Trends by Cost per Claim, Cost per Unit, and Member Utilization

				COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Category	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
6	J2323	Tysabri	Multiple Sclerosis, BDAID	$5,620	$10,657	$5,698	$19	$37	$19	47%	45%	8%
15	J1300	Soliris	Rare Diseases	$25,040	$37,124	$23,272	$227	$416	$226	36%	48%	16%
17	J2357	Xolair	Asthma/COPD	$2,031	$3,937	$2,715	$32	$87	$32	62%	6%	32%
18	J0585	Botox	Botulinum Toxins	$1,025	$1,126	$1,126	$6	$12	$6	68%	12%	20%

A25

Medicare Drugs in the Top 25 Not Included in Category Trends by Cost per Claim, Cost per Unit, and Member Utilization

				COST PER CLAIM			COST PER UNIT			MEMBER UTILIZATION		
Rank	HCPCS	Brand	Category	Physician	Hospital OP	Home	Physician	Hospital OP	Home	Physician	Hospital OP	Home
13	J2323	Tysabri	Multiple Sclerosis, BDAID	$5,105	$5,462	$4,979	$17	$18	$7	50%	49%	1%
20	J1300	Soliris	Rare Diseases	-	$21,490	-	-	$222	-	-	100%	-

Administration Code Trends

A26

2016 Commercial and Medicare Top Hospital Outpatient Administration Codes by PMPM Spend

		COMMERCIAL		MEDICARE	
CPT Code	DESCRIPTION	2016 PMPM	2016 Unit Cost	2016 PMPM	2016 Unit Cost
96413	Chemotherapy administration, IV infusion technique; up to one hour, single or initial substance/drug	$0.65	$651.90	$0.75	$294.43
96375	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); each additional sequential IV push of a new substance/drug	$0.32	$122.50	$0.20	$37.66
96365	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); initial, up to one hour	$0.28	$415.00	$0.31	$164.38
96374	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); IV push, single or initial substance/drug	$0.20	$220.00	$0.21	$92.39
96361	IV infusion, hydration; each additional hour	$0.16	$127.87	$0.10	$33.57
96372	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); subcutaneous or intramuscular	$0.12	$104.50	$0.17	$43.15
96415	Chemotherapy administration, IV infusion technique; each additional hour	$0.11	$236.85	$0.06	$47.42
96367	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); each additional sequential infusion of a new drug/substance, up to one hour	$0.09	$195.88	$0.11	$45.77
96417	Chemotherapy administration, IV infusion technique; each additional sequential infusion (different substance/drug), up to one hour	$0.09	$325.57	$0.04	$49.27
96360	IV infusion, hydration; initial, 31 minutes to one hour	$0.07	$321.02	$0.04	$106.17
96366	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); each additional hour	$0.06	$153.59	$0.05	$33.06
96411	Chemotherapy administration; IV, push technique, each additional substance/drug	$0.05	$314.82	$0.03	$93.55
96416	Chemotherapy administration, IV infusion technique; initiation of prolonged chemotherapy infusion (more than eight hours), requiring use of a portable or implantable pump	$0.04	$588.78	$0.04	$281.71
96409	Chemotherapy administration; IV, push technique, single or initial substance/drug	$0.04	$433.39	$0.03	$189.70
20610	Arthrocentesis, aspiration, and/or injection, major joint or bursa without ultrasound guidance	$0.03	$400.75	$0.07	$112.41
96401	Chemotherapy administration, subcutaneous or intramuscular; nonhormonal antineoplastic	$0.03	$289.36	$0.05	$114.76
96376	IV push, single or initial substance/drug; each additional sequential IV push of the same substance/drug provided in a facility	$0.02	$98.31	$0.01	$53.95
96402	Chemotherapy administration, subcutaneous or intramuscular; hormonal antineoplastic	$0.02	$243.76	$0.01	$57.32
96368	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); concurrent infusion	$0.01	$170.90	--	--
96523	Irrigation of implanted venous access device for drug delivery systems	$0.01	$152.17	$0.02	$65.42
96450	Chemotherapy administration, into CNS (e.g., intrathecal), requiring and including spinal puncture	$0.01	$769.40	-	-

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2016 Commercial and Medicare Top Physician Office Administration Codes by PMPM Spend

		COMMERCIAL		MEDICARE	
CPT Code	DESCRIPTION	2016 PMPM	2016 Unit Cost	2016 PMPM	2016 Unit Cost
20610	Arthrocentesis, aspiration, and/or injection, major joint or bursa without ultrasound guidance	$0.32	$103.09	$0.58	$58.98
96413	Chemotherapy administration, IV infusion technique; up to one hour, single or initial substance/drug	$0.24	$200.09	$0.42	$142.54
96372	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); subcutaneous or intramuscular	$0.24	$27.41	$0.38	$23.26
96365	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); initial, up to one hour	$0.08	$91.06	$0.13	$71.18
67028	Intravitreal injection of a pharmacologic agent (separate procedure)	$0.07	$185.03	$0.45	$101.22
96367	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); additional sequential infusion of a new drug/substance, up to one hour	$0.06	$42.61	$0.12	$31.72
96401	Chemotherapy administration, subcutaneous or intramuscular; nonhormonal antineoplastic	$0.04	$86.06	$0.09	$72.14
96417	Chemotherapy administration, IV infusion technique; each additional sequential infusion (different substance/drug), up to one hour	$0.03	$98.59	$0.05	$63.87
96415	Chemotherapy administration, IV infusion technique; each additional hour	$0.03	$43.63	$0.04	$30.61
96375	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); each additional sequential IV push of a new substance/drug	$0.03	$34.52	$0.04	$22.81
96416	Chemotherapy administration, IV infusion technique; initiation of prolonged chemotherapy infusion (more than eight hours), requiring use of a portable or implantable pump	$0.02	$211.66	$0.04	$154.96
96411	Chemotherapy administration; IV, push technique, each additional substance/drug	$0.02	$87.13	$0.03	$62.42
96366	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); each additional hour	$0.01	$31.73	$0.02	$26.04
96374	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); IV push, single or initial substance/drug	$0.01	$74.94	$0.02	$55.35
96360	IV infusion, hydration; initial, 31 minutes to one hour	$0.01	$78.68	$0.02	$58.95
96409	Chemotherapy administration; IV, push technique, single or initial substance/drug	$0.01	$158.29	$0.03	$115.04
96361	IV infusion, hydration; each additional hour	$0.01	$21.58	$0.01	$16.23
96420	Chemotherapy intra-arterial push technique	$0.01	$239.75	–	–
96402	Chemotherapy administration, subcutaneous or intramuscular; hormonal antineoplastic	$0.01	$50.79	$0.02	$34.45
96368	IV infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); concurrent infusion	–	–	$0.01	$21.94
96521	Refilling and maintenance of portable pump	–	–	$0.01	$121.03
96523	Irrigation of implanted venous access device for drug delivery systems	–	–	$0.01	$25.40

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2016 Commercial and Medicare Top Home Infusion Administration Codes by PMPM Spend

		COMMERCIAL		MEDICARE	
CPT Code	DESCRIPTION	2016 PMPM	2016 Unit Cost	2016 PMPM	2016 Unit Cost
99601	Home infusion/specialty drug administration, per visit (up to two hours)	$0.10	$120.02	$0.05	$110.83
99602	Home infusion/specialty drug administration, per visit (up to two hours); each additional hour	$0.04	$63.60	$0.02	$54.53

Glossary

ACA ..... Affordable Care Act

ACO ..... accountable care organization

APM ..... alternative payment model

ASCO ..... American Society of Clinical Oncology

ASP ..... average sales price

AWP ..... average wholesale price

BDAIDs ..... biologic drugs for autoimmune disorders

CBO ..... Congressional Budget Office

CMS ..... Centers for Medicare & Medicaid Services

CPT ..... current procedural terminology

CSF ..... colony-stimulating factor

ESA ..... erythropoiesis-stimulating agent

FDA ..... U.S. Food and Drug Administration

HAE ..... hereditary angioedema

HCPCS ..... Healthcare Common Procedure Coding System

HHS ..... U.S. Department of Health & Human Services

Hospital OP ..... hospital outpatient

HRSA ..... Health Resources & Services Administration

ICD ..... International Classification of Diseases

IG ..... immune globulin

IV ..... intravenous

IVIG ..... Intravenous immune globulin

LOB ..... line of business

MedPAC ..... Medicare Payment Advisory Commission

MOA ..... mechanism of action

NDC ..... National Drug Code

NSCLC ..... non-small cell lung cancer

PA ..... prior authorization

Part D ..... Medicare Prescription Drug Program

PD1 ..... programmed cell death 1

PD-L1 ..... programmed death-ligand 1

PMPM ..... per member per month

PPPY ..... per patient per year

PSCE ..... post-service claim edit

SOS ..... site of service

VEGF ..... vascular endothelial growth factor

WAC ..... wholesale acquisition cost