

2018 ANNUAL TREND REPORT



Mediimpact

Strong & Independent
For the long run.

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LEADING THE WAY TOGETHER

30 YEARS STRONG AND INDEPENDENT

At MedImpact, we are the PBM that puts clients and members first. For 30 years, we have had a single mission: To help make pharmacy benefits affordable, understandable, and transparent. Today, our team and technology serve many large employers and plans and more than 29 million members in the U.S. and around the world. We are an independent company that answers to our clients, members, pharmacy partners and employees, not Wall Street. And we have never lost sight of who the benefits are for.

CLIENTS AND CONSUMERS FIRST. ALWAYS.

Our focus on transparency, low-net cost, and oversight allows us to put clients and consumers first. In an era focused on drug costs and pricing transparency, MedImpact understands the importance of drug cost management, member access to clinically appropriate medications and personalized information to make informed decisions.

We are dedicated to promoting the interests of our plan and pharmacy partners, not competing against them. That is why we don't own mail-order or specialty pharmacies that can put a PBM's interest in conflict with those of its clients.

We believe in transparency, oversight, and take a conservative approach to fulfillment by:

- Directing consumers toward high-value care
- Driving low-net cost with medically appropriate drugs at the most appropriate pharmacy
- Managing appropriate utilization without driving up utilization and costs
- Reducing waste – no overfills, early refills or auto-refills

FLEXIBLE AND FORWARD-THINKING.

We believe that every client has different needs, and every need matters. For 30 years, we've built consultative, collaborative partnerships that meet the unique goals of each client. We offer highly customized benefit designs, formularies, clinical programs, and reporting to meet our clients' needs, not our own convenience.

Due to our advanced clinical programs and client-first approach, plan sponsors who switched to **MedImpact save an average of \$3.55 per member per month.**

We set aside legacy technology to reimagine member tools. As a result, they deliver a better member experience, higher levels of engagement, which results in better member health.

Our forward-thinking approach and unique business model aligns us with your goals – it's what differentiates us from other PBM's.

STRONG AND INDEPENDENT FOR THE LONG RUN.

Founded 30 years ago, MedImpact today serves many large health plans, employer groups and government programs across the U.S.

Today, MedImpact provides pharmacy benefits for more than 29 million members in the U.S. and around the world and manages \$30 billion in drug spend annually.

For 30 years, MedImpact has been committed to remaining an independent PBM. Merger integration can have a disruptive impact on healthcare. Member service and access to affordable medications can decline — something we work very hard to prevent every day.

Our client- and member-first approach to pharmacy benefits and focus on clinical quality and rigorous utilization management — rather than chasing rebate dollars — allows us to align with our clients and members to deliver lower-cost, quality care.



TREND

COMPONENTS BY LINE OF BUSINESS

COMMERCIAL TREND DRIVERS

- Decrease in trend from previous year
- Traditional (non-specialty) drug spend decreased
 - Lower utilization
 - Lower unit cost

MEDICARE TREND DRIVERS

- Increase in trend from previous year
- Trend increase driven by:
 - Higher specialty spend
 - Higher utilization

MEDICAID TREND DRIVERS

- Increase in trend from previous year
- Trend increase driven by:
 - Higher specialty trend
 - Higher unit cost increases in traditional and specialty

MEDIMPACT 2018 COMPONENTS OF TREND BY LINE OF BUSINESS*

| | COMMERCIAL | | | MEDICARE | | | MEDICAID | | |
|--------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Utilization | Unit Cost* | Total | Utilization | Unit Cost* | Total | Utilization | Unit Cost* | Total |
| Traditional | -1.6% | -0.7% | -2.3% | 1.0% | -0.6% | 0.4% | 4.1% | 0.6% | 4.8% |
| Specialty | 4.3% | 3.5% | 8.0% | 1.6% | 8.1% | 9.8% | 7.2% | 0.4% | 7.6% |
| Total | -1.5% | 3.0% | 1.5% | 1.0% | 1.9% | 2.9% | 4.2% | 1.6% | 5.9% |

*All cost analyses are compiled net of rebate and measured on a PMPM basis.

We saw a double-digit unit cost increase in the inflammatory disease and oncology therapeutic classes.

COMMERCIAL LINE OF BUSINESS†

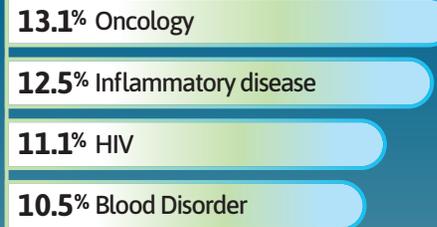
Top Therapeutic Classes by Cost Increase†



Top Therapeutic Classes by Utilization Increase†



Top Therapeutic Classes by Total Trend†





SPOTLIGHT ON SPECIALTY

Spending on specialty medicines will continue to increase, rising from \$336 billion in 2018 to a predicted \$475 billion to \$505 billion by 2023 across developed markets¹ In the United States, the median list price for oncology and orphan drugs could potentially reach above \$200,000 per year by 2023.²

SAVING IN SPECIALTY

Specialty medications are saving and improving lives. A delicate balance is required to provide access to clinically appropriate drugs and effectively manage costs. This balance requires technology to monitor prescribing and dispensing, as well as follow-up care. Care requires specialized expertise that puts patients first, understanding that specialty medications treat some of the most complex conditions.

The Most Unique Business Model in Specialty Management

MedImpact delivers specialty cost reductions of up to 9% of specialty spend through its MedImpact Direct Specialty® Program. Our program provides access to fulfillment pharmacies that offer expert, specialized clinical services, and takes a conservative approach to fulfillment.

Focused Oversight

Effective management, both clinically and financially, requires focused oversight, innovative thinking, and a business model that:

- Guarantees market-competitive specialty pharmacy rates
- Drives appropriate utilization through point-of-sale edits, prior authorizations, and implementation of plan design rules
- Reduces medication waste linked with stockpiling from excessive refills
- Improves adherence by increasing medication possession ratios
- Offers copay assistance to plan sponsors and members
- Delivers outstanding member experience: 95.4% of our members report good experience with the program and receive medication on time
- Provides high-performing pharmacies: 100% of MedImpact Direct Specialty preferred dispensing pharmacies support performance guarantees and audits

This combination of oversight and plan-specific, prescription-level utilization management before drugs are dispensed through a tightly managed and competitive network of pharmacies culminates in **reduced specialty drug costs by up to 9%**. Each component of the service model delivers incremental value to plan sponsors and their members.



MedImpact Direct Specialty® Program

REDUCES SPECIALTY DRUG COSTS BY UP TO **9%**



Commercial Specialty Drugs accounted for



Medicare Specialty Drugs accounted for



Medicaid Specialty Drugs accounted for



¹IQVIA Therapy Prognosis Global, Jun 2018, IQVIA Institute, Dec 2018; Report: The Global Use of Medicine in 2019 and Outlook to 2023. IQVIA Institute for Human Data Science. Jan 2019 https://www.iqvia.com/-/media/iqvia/images/body/institute/the-global-use-of-medicine-in-2019-and-outlook-to-2023/image-carousel/chart-22-specialty-medicines-spending-and-growth-in-developed-markets.png?download=1&_=1554987037607

²Source IQVIA National Sales Perspectives, Dec 2017; IQVIA Institute, Dec 2018; Note: Annual costs based on invoice prices, with overall invoice-level spending divided by estimated numbers of patients. Patient estimates are based on audited volumes assuming all patients use the drug according to the approved label. Products are included in medians based on segment assignments. Oncology includes both orphan and non-orphan products. All other products that have orphan indications are grouped together and some products have both orphan and non-orphan indications in this group. Specialty and traditional products exclude orphan or oncology products but are otherwise defined according to IQVIA definitions. Projected median costs are based on simple extrapolations of the medians in the prior ten years. Report: The Global Use of Medicine in 2019 and Outlook to 2023. IQVIA Institute for Human Data Science. Jan 2019



TOP THERAPEUTIC CLASSES COMMERCIAL PLANS

The top 10 therapeutic classes remained relatively the same in 2018. Utilization was down for most therapeutic classes, but unit cost increases drove trend. The top 10 therapeutic classes accounted for 68% of total PMPY spend in 2018.

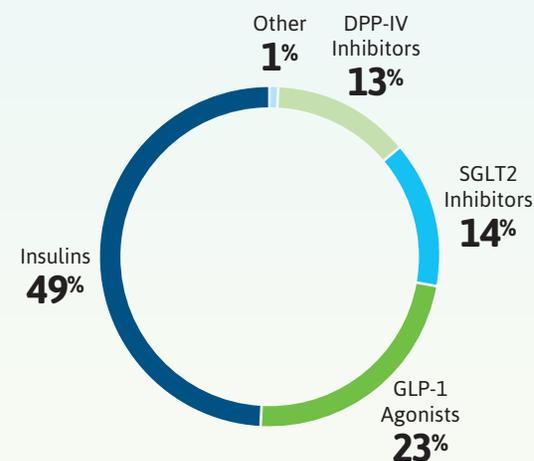
Inflammatory disease continues to hold the #1 therapeutic class rank in the commercial line of business, with the majority of utilization of Humira and Enbrel. Other drugs driving trend in this category include Stelara, Otezla, and Xeljanz. Expanded indications for these agents and price increases contribute to significant increases in trend for these individual agents.

| 2018 RANK | 2017 RANK | THERAPEUTIC CLASS | PMPY SPEND | TREND COMPONENTS | | | |
|--|-----------|---------------------------|--------------|-------------------|--------------|-------------|-------------|
| | | | | UTILIZATION | UNIT COST | TOTAL | |
| 1 | 1 | Inflammatory disease | \$189.40 | -1.9% | 14.8% | 12.5% | |
| 2 | 2 | Diabetes | \$157.39 | 0.7% | 8.9% | 9.7% | |
| 3 | 4 | Oncology | \$72.62 | -0.9% | 14.2% | 13.1% | |
| 4 | 3 | Multiple sclerosis | \$61.87 | -9.6% | 4.0% | -6.0% | |
| 5 | 6 | Asthma/COPD | \$59.31 | -0.2% | 5.7% | 5.5% | |
| 6 | 5 | Behavioral health | \$58.69 | -2.9% | -0.4% | -3.3% | |
| 7 | 7 | HIV | \$42.61 | 2.1% | 8.9% | 11.2% | |
| 8 | 9 | Blood disorder | \$35.39 | 1.7% | 8.7% | 10.5% | |
| 9 | 8 | High blood pressure | \$31.99 | -1.1% | -3.8% | -4.9% | |
| 10 | 11 | Seizures | \$26.58 | -0.7% | 7.3% | 6.5% | |
| | | Other therapeutic classes | \$342.77 | -3.5% | -3.6% | -6.9% | |
| Source: MedImpact Book of Business 2018 | | | Total | \$1,078.63 | -1.5% | 3.0% | 1.5% |

FOCUS ON DIABETES

As predicted in our 2016 *Trend Report*, GLP-1 agonist and SGLT2 inhibitors have gained more market share than DPP-IV inhibitors due to their ability to reduce HbA1C levels to a greater degree, and because of positive morbidity and mortality studies. Insulin still leads market share in the diabetes therapeutic class accounting for 49% of market share. New pipeline agents within this area will likely increase spend in 2020.

DIABETES BRAND MARKET SHARE BY PRODUCT TYPE



HIGHLIGHTS ON MULTIPLE SCLEROSIS

Decrease in utilization for Tecfidera, Copaxone, and all of the interferons accounted for the negative trend in multiple sclerosis. As expected, and mentioned in previous *Trend Reports*, utilization shifted to a significant increase in utilization of glatiramer acetate, the generic for Copaxone. The overall utilization in multiple sclerosis is down and potentially could be shifting to the medical benefit to newer medications like Ocrevus.



TOP THERAPEUTIC CLASSES MEDICARE PLANS

Diabetes and oncology remained in the top therapeutic classes in 2018, accounting for 29% of the total Medicare spend. We saw trend increases of more than 20% in the oncology and blood disorder therapeutic classes. In oncology, Revlimid, Imbruvica, and Zytiga accounted for 44% of the 2018 oncology spend. Expanded labeling for Zytiga in early 2018 likely drove utilization. However, generic competition will decrease use of the brand in 2019/2020. Revlimid may face generic competition in 2020, but could be delayed further. For blood disorders, as predicted in 2017, trend increased significantly, and it was driven by Eliquis and Xarelto, which combined accounted for 78% of the spend in this therapeutic class. In 2015, these two medications accounted for 51% of the Medicare blood disorder spend. **Noteworthy: Hepatitis C is no longer in the top 10 due to a decrease in both utilization and cost.**

| 2018 RANK | 2017 RANK | THERAPEUTIC CLASS | PMPY SPEND | TREND COMPONENTS | | |
|-----------|-----------|---------------------------|------------|------------------|--------------|--------------|
| | | | | UTILIZATION | UNIT COST | TOTAL |
| 1 | 1 | Diabetes | \$603.67 | 2.0% | 5.9% | 8.1% |
| 2 | 2 | Oncology* | \$347.69 | 2.2% | 19.0% | 21.6% |
| 3 | 3 | Asthma/COPD | \$259.29 | -0.1% | 3.5% | 3.5% |
| 4 | 4 | HIV | \$218.69 | -8.4% | 13.4% | 3.9% |
| 5 | 6 | Blood disorder | \$218.33 | 1.5% | 26.0% | 27.9% |
| 6 | 7 | Inflammatory disease | \$167.53 | -0.2% | 11.7% | 11.5% |
| 7 | 5 | High blood pressure | \$156.56 | 1.3% | -9.5% | -8.3% |
| 8 | 8 | Behavioral health | \$112.87 | -2.8% | 8.2% | 5.1% |
| 9 | 9 | Multiple sclerosis | \$104.32 | -4.5% | 2.8% | -1.9% |
| 10 | 11 | Seizures | \$94.97 | 3.5% | 3.1% | 6.7% |
| | | Other therapeutic classes | \$1,000.45 | -5.6% | -0.8% | -6.3% |

Source: MedImpact Book of Business 2018

Total \$3,284.38 1.0% 1.9% 2.9%

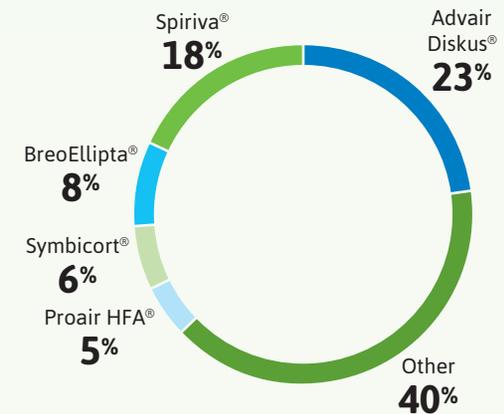
*Oncology costs are increasing. See pipeline update for more information on page 16.

ASTHMA/COPD

A long-awaited launch of an Advair Diskus Generic

With multiple delays for a generic version of GlaxoSmithKline's Advair, the top-selling respiratory drug in the U.S., the first generic was finally approved in early 2019. Mylan's Wixela Inhub launched in February along with an authorized generic by GSK. While Wixela Inhub has a list price 70% below branded Advair, there may be some concern initially among patients and providers with switching due to differences in the drug delivery device. However, analysts have reported rapid erosion of brand market share. In the last week of February 2019, Wixela Inhub accounted for 24% of prescriptions; the authorized generic 15%; and the remainder was for the branded product. Two additional Advair generics are anticipated in 2020.

ASTHMA/COPD MEDICARE MARKET SHARE





TOP THERAPEUTIC CLASSES

MEDICAID PLANS

Many of 2017's therapeutic classes remained the same in 2018, with the exception of pain management, which dropped out of the top 10 therapeutic class rankings. Medicaid was the only line of business in which Hepatitis C remained in the top 10 therapeutic classes, though a significant decrease in unit cost and slight decrease in utilization accounts for shifts from #5 to #7 in 2018.

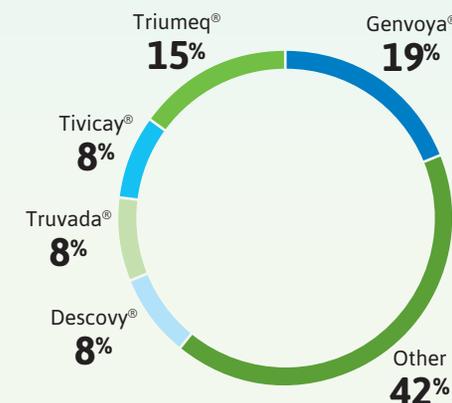
The majority of spend within behavioral health is for attention deficit hyperactivity disorder (ADHD), which has high generic utilization. Vyvanse, one of a few branded products to remain in this category, is the costliest agent for this therapeutic class. The atypical antipsychotic branded agent Latuda, a product approved for schizophrenia and depression associated with bipolar 1 disorder, accounted for 10% of the spend in behavioral health. Generic competition has been delayed until patent litigation is settled. **Noteworthy: Pain management has fallen off the top 10 in Medicaid to increased oversight on controlled substances.**

| 2018 RANK | 2017 RANK | THERAPEUTIC CLASS | PMPY SPEND | TREND COMPONENTS | | | |
|---|-----------|---------------------------|--------------|------------------|-------------|-------------|-------------|
| | | | | UTILIZATION | UNIT COST | TOTAL | |
| 1 | 1 | Diabetes | \$107.01 | 6.9% | 4.1% | 11.2% | |
| 2 | 3 | Inflammatory disease | \$65.31 | -0.3% | 21.4% | 21.1% | |
| 3 | 2 | Asthma/COPD | \$62.06 | 1.1% | 1.4% | 2.5% | |
| 4 | 4 | HIV | \$52.17 | -3.4% | 9.1% | 5.4% | |
| 5 | 7 | Oncology | \$42.92 | 6.1% | 12.9% | 19.8% | |
| 6 | 6 | Behavioral health | \$41.18 | -0.3% | 2.0% | 1.6% | |
| 7 | 5 | Hepatitis C | \$29.71 | -3.0% | -35.7% | -37.6% | |
| 8 | 8 | Seizures | \$27.24 | 3.2% | 10.1% | 13.6% | |
| 9 | 9 | High blood pressure | \$22.30 | 4.0% | 6.3% | 10.5% | |
| 10 | 11 | Blood disorder | \$20.45 | 7.6% | 12.2% | 20.7% | |
| | | Other therapeutic classes | \$219.49 | 4.5% | 1.8% | 6.4% | |
| Source: MedImpact Book of Business 2018 | | | Total | \$689.84 | 4.2% | 1.6% | 5.9% |

HIV

Genvoya and Triumeq, single tablet regimens that include two non-nucleoside reverse transcriptase inhibitors (NRTI)s and an integrase inhibitor (INSTI) account for 24% of the HIV market share in Medicaid. A new agent, Biktarvy, approved in February of 2018, competes for first line therapy in HIV, and it saw significant utilization in 2018. In 2016, industry analysts predicted that tenofovir alafenamide (TAF) products like Biktarvy and Genvoya would increase in utilization and replace tenofovir disoproxil fumarate (TDF) agents like Stribild, which no longer is in our top 5 agents in HIV.

HIV MEDICAID MARKET SHARE





TOP 10 TRADITIONAL DRUGS

COMMERCIAL LINE OF BUSINESS

In 2018, 5 out of the top 10 branded agents, based on per member per year spend, are agents to treat diabetes. Insulin drugs Humalog and Lantus remained in the top 10 and unit cost was held to less than 2% for both agents. With increasing pressure on pricing of insulin, we could see these agents' ranking decrease in 2019. The highest trend increase in the commercial traditional branded drugs for the second year was

Trulicity, a GLP-1 receptor agonist for diabetes, which moved from 8 to number 3. With generics for Advair Diskus introduced in 2019, we expect a significant trend decrease for 2019 and into 2020. Lyrica, a medication approved for seizures, fibromyalgia, and nerve pain (typically caused by diabetes, spinal cord injury, and shingles) will likely face generic competition in mid-2019.

| 2018 RANK | 2017 RANK | DRUG NAME | THERAPEUTIC CLASS | PMPY SPEND | % of Total Spend | TREND COMPONENTS | | |
|-----------|-----------|---|-------------------|------------|------------------|------------------|-----------|--------|
| | | | | | | UTILIZATION | UNIT COST | TOTAL |
| 1 | 1 | Humalog® (insulin lispro) | Diabetes | \$23.79 | 2.2% | 3.9% | 1.3% | 5.2% |
| 2 | 2 | Lantus® (insulin glargine) | Diabetes | \$15.68 | 1.5% | -17.5% | 1.9% | -15.9% |
| 3 | 8 | Trulicity® (dulaglutide) | Diabetes | \$13.57 | 1.3% | 53.7% | 8.3% | 66.5% |
| 4 | 4 | Victoza® 3-Pak (liraglutide) | Diabetes | \$11.81 | 1.1% | 8.2% | 6.1% | 14.8% |
| 5 | 3 | Advair Diskus® (fluticasone propionate) | Asthma/ COPD | \$11.74 | 1.1% | -11.4% | 7.2% | -5.0% |
| 6 | 5 | Vyvanse® (lisdexamfetamine) | Behavioral health | \$10.84 | 1.0% | 1.8% | 8.0% | 10.0% |
| 7 | 10 | Eliquis® (apixaban) | Anticoagulant | \$10.23 | 0.9% | 33.7% | 7.2% | 43.3% |
| 8 | 7 | Lyrica® (pregabalin) | Seizure/pain | \$9.12 | 0.8% | -3.9% | 10.1% | 5.8% |
| 9 | 6 | Januvia® (sitagliptin) | Diabetes | \$8.44 | 0.8% | -8.8% | 6.6% | -2.9% |
| 10 | 11 | Xarelto® (rivaroxaban) | Anticoagulant | \$7.80 | 0.7% | 6.6% | 6.9% | 13.9% |

Source: MedImpact Commercial Book of Business 2018



TOP 10 SPECIALTY DRUGS

COMMERCIAL LINE OF BUSINESS

Humira and Enbrel held the number 1 and 2 positions respectively for commercial specialty brand spend in 2018. With no biosimilars expected for these agents until at least 2023, these brands will likely hold these spots for the next several years. We continue to see significant trend increases in the inflammatory disease therapeutic class with agents like Stelara and Cosentyx driven by increased utilization and unit cost. This is the first year Cosentyx has reached the top 10 for the specialty commercial specialty brand spend.

Tecfidera and Gilenya continue to represent agents to treat multiple sclerosis, but Copaxone dropped out of the top 10 list due to generic competition. The multiple sclerosis therapeutic class will continue to see changes in the next several years with a shifting of spend to generics and newer branded agents. Oncology drugs Revlimid and Ibrance saw double digit-trend in 2018, which will continue in 2019. Truvada and Genvoya are the HIV agents in the top 10 list for commercial specialty brand spend. Truvada is still the only HIV Pre-Exposure Prophylaxis (PrEP) medication approved in the United States, but Gilead is also seeking FDA approval for Descovy for HIV (PrEP).

| 2018 RANK | 2017 RANK | DRUG NAME | THERAPEUTIC CLASS | PMPY SPEND | % of Total Spend | TREND COMPONENTS | | |
|-----------|-----------|--|----------------------|------------|------------------|------------------|-----------|-------|
| | | | | | | UTILIZATION | UNIT COST | TOTAL |
| 1 | 1 | Humira® (adalimumab) | Inflammatory disease | \$90.29 | 8.4% | 5.1% | 9.0% | 14.6% |
| 2 | 2 | Enbrel® (etanercept) | Inflammatory disease | \$38.70 | 3.6% | -5.4% | 7.8% | 2.0% |
| 3 | 6 | Stelara® (ustekinumab) | Inflammatory disease | \$16.93 | 1.6% | 15.6% | 11.4% | 28.8% |
| 4 | 3 | Tecfidera® (dimethyl fumarate) | Multiple Sclerosis | \$15.66 | 1.5% | -6.5% | 7.1% | 0.2% |
| 5 | 7 | Revlimid® (lenalidomide) | Oncology | \$13.19 | 1.2% | 3.6% | 11.9% | 16.0% |
| 6 | 9 | Truvada® (emtricitabine/tenofovir disoproxil fumarate) | HIV | \$10.70 | 1.0% | 14.9% | 6.8% | 22.7% |
| 7 | 8 | Gilenya® (fingolimod) | Multiple Sclerosis | \$10.01 | 0.9% | 5.0% | 7.2% | 12.5% |
| 8 | 18 | Cosentyx® Pen (secukinumab) | Inflammatory disease | \$7.88 | 0.7% | 66.2% | 2.7% | 70.7% |
| 9 | 10 | Ibrance® (palbociclib) | Oncology | \$7.63 | 0.7% | 17.1% | 2.8% | 20.4% |
| 10 | 12 | Genvoya® (elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide) | HIV | \$7.58 | 0.7% | 23.3% | 5.6% | -2.2% |

Source: MedImpact Commercial Book of Business 2018



TOP 10 TRADITIONAL DRUGS

MEDICARE LINE OF BUSINESS

In 2018, Lantus claimed the top ranking drug for PMPY spend for the Medicare traditional brand spend. Anti-coagulant agents Eliquis and Xarelto experienced a dramatic increase in both utilization and unit cost that accounted for high double-digit trend in 2018. Five different agents to treat diabetes reached the top 10, accounting for 43% of the total PMPY spend in diabetes in Medicare. With increasing pressure on pricing of insulin, we could

see these agent's ranking decrease in 2019. With generics for Advair Diskus introduced in 2019, we expect a significant trend decrease for 2019 and into 2020. Lyrica, a medication approved for seizures, fibromyalgia, and nerve pain (typically caused by diabetes, spinal cord injury, and shingles), ranked number 6 on the list will, and likely face generic competition in mid-2019.

| 2018 RANK | 2017 RANK | DRUG NAME | THERAPEUTIC CLASS | PMPY SPEND | % of Total Spend | TREND COMPONENTS | | |
|-----------|-----------|---|-------------------|------------|------------------|------------------|--------------|---------------|
| | | | | | | UTILIZATION | UNIT COST | TOTAL |
| 1 | 1 | Lantus® (insulin glargine) | Diabetes | \$109.44 | 3.3% | -9.3% | 3.0% | -6.6% |
| 2 | 2 | Eliquis® (apixaban) | Anti-coagulant | \$104.30 | 3.2% | 36.8% | 7.1% | 46.6% |
| 3 | 3 | Januvia® (sitagliptin) | Diabetes | \$75.92 | 2.3% | 0.7% | 8.5% | 9.2% |
| 4 | 5 | Xarelto® (rivaroxaban) | Anti-coagulant | \$66.72 | 2.0% | 17.1% | 7.3% | 25.7% |
| 5 | 4 | Advair Diskus® (fluticasone propionate) | Asthma/ COPD | \$59.12 | 1.8% | -16.3% | 8.2% | -9.4% |
| 6 | 6 | Lyrica® (pregabalin) | Seizure/pain | \$52.15 | 1.6% | -0.4% | 11.5% | 11.0% |
| 7 | 9 | NovoLog® FLEXPEN (insulin aspart) | Diabetes | \$43.02 | 1.3% | 13.6% | -0.2% | 13.4% |
| 8 | 7 | Spiriva® (tiotropium bromide) | Asthma/ COPD | \$34.95 | 1.1% | -26.0% | 6.7% | -21.0% |
| 9 | 10 | Humalog® (insulin lispro) | Diabetes | \$30.87 | 0.9% | -19.3% | 2.9% | -17.0% |
| 10 | 12 | Victoza® 3-Pak (liraglutide) | Diabetes | \$29.78 | 0.9% | 28.1% | 5.3% | 34.8% |

Source: MedImpact Medicare Book of Business 2018



TOP 10 SPECIALTY DRUGS

MEDICARE LINE OF BUSINESS

In Medicare Specialty spend, four oncology agents, Revlimid, Imbruvica, Zytiga, and Ibrance, made the top 10 list. Expanded labeling for Zytiga in early 2018 likely increased utilization, but the introduction of a generic will decrease use of the brand in 2019/2020. Revlimid may potentially face generic competition in 2020, but patent litigation may postpone generics. Hepatitis C treatments Harvoni and Epcalsa fell out of the top 10 list due to significant decreases in utilization.

Humira and Enbrel held the number 2 and 4 spots respectively for Medicare specialty spend in 2018. With no biosimilars expected for these agents until at least 2023, these brands will likely continue to be major components of spend and trend. Four agents, Genvoya, Trimeq, Descovy, and Tivicay used for the treatment of HIV, made the top 10 list for Medicare Specialty in 2018 with double-digit increases in trend.

| 2018 RANK | 2017 RANK | DRUG NAME | THERAPEUTIC CLASS | PMPY SPEND | % of Total Spend | TREND COMPONENTS | | |
|-----------|-----------|--|----------------------|------------|------------------|------------------|-----------|-------|
| | | | | | | UTILIZATION | UNIT COST | TOTAL |
| 1 | 1 | Revlimid® (lenalidomide) | Oncology | \$80.27 | 2.4% | 4.6% | 10.3% | 15.4% |
| 2 | 2 | Humira® (adalimumab) | Inflammatory disease | \$61.89 | 1.9% | 6.8% | 8.9% | 16.3% |
| 3 | 5 | Imbruvica® (ibrutinib) | Oncology | \$39.74 | 1.2% | 19.1% | 13.1% | 34.6% |
| 4 | 4 | Enbrel® (etanercept) | Inflammatory disease | \$35.29 | 1.1% | -6.0% | 9.6% | 3.0% |
| 5 | 6 | Genvoya® (elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide) | HIV | \$32.54 | 1.0% | 4.2% | 6.8% | 11.3% |
| 6 | 13 | Zytiga® (abiraterone) | Oncology | \$31.69 | 1.0% | 38.6% | 11.2% | 54.2% |
| 7 | 7 | Triumeq® (abacavir/dolutegravir/ lamivudine) | HIV | \$31.62 | 1.0% | 2.3% | 8.3% | 10.8% |
| 8 | 9 | Ibrance® (palbociclib) | Oncology | \$30.16 | 0.9% | 9.4% | 1.9% | 11.5% |
| 9 | 12 | Descovy® (emtricitabine/ tenofovir alafenamide) | HIV | \$27.86 | 0.8% | 14.5% | 5.3% | 20.6% |
| 10 | 11 | Tivicay® (dolutegravir) | HIV | \$26.31 | 0.8% | 4.2% | 6.5% | 10.9% |

Source: MedImpact Medicare Book of Business 2018



TOP 10 TRADITIONAL DRUGS

MEDICAID LINE OF BUSINESS

In 2018, 5 diabetes agents appeared in the top 10, with Lantus continuing to remain as the top ranked drug. The manufacturer of Humalog announced they would offer a less expensive version of the drug, basically decreasing the price in 2019. With increasing pressure on pricing of insulin, we could see these agent's ranking decrease in 2019. Basaglar, the first follow-on insulin product approved in 2015, was number 3 in the top 10 list for Medicaid Traditional Drug Spend after being ranked number 20 in 2017. Two respiratory agents, Ventolin and Flovent, made the top 10 list in 2018, but Ventolin should see significant decrease in trend in 2019 due to generic competition. Lyrica, a medication approved for seizures, fibromyalgia, and

nerve pain (typically caused by diabetes, spinal cord injury, and shingles) ranked number 7 on the list, and it will likely face generic competition in mid-2019.

Two agents to treat Attention-Deficit/Hyperactivity Disorder (ADHD) were in the top 10 for the Medicaid line of business. Vyvanse, an agent available since 2007, moved in ranking from 12 to 8 in 2018. Methylphenidate ER, the only generic agent to appear on the top 10 list for Medicaid traditional drugs, rounded out the top 10 based on PMPY spend.

| 2018 RANK | 2017 RANK | DRUG NAME | THERAPEUTIC CLASS | PMPY SPEND | % of Total Spend | TREND COMPONENTS | | |
|-----------|-----------|---------------------------------------|-------------------|------------|------------------|------------------|-----------|--------|
| | | | | | | UTILIZATION | UNIT COST | TOTAL |
| 1 | 1 | Lantus® (insulin glargine) | Diabetes | \$13.58 | 2.0% | -30.1% | 1.6% | -28.9% |
| 2 | 2 | Humalog® (insulin lispro) | Diabetes | \$13.23 | 1.9% | -5.0% | 1.6% | -3.5% |
| 3 | 20 | Basaglar® Kwikpen® U-100 | Diabetes | \$9.83 | 1.4% | 207.1% | -6.1% | 188.3% |
| 4 | 3 | NovoLog® (insulin aspart) | Diabetes | \$9.39 | 1.4% | 2.7% | 3.7% | 6.6% |
| 5 | 4 | Ventolin® HFA (albuterol sulfate) | Asthma/ COPD | \$7.89 | 1.1% | 4.2% | 1.4% | 5.7% |
| 6 | 11 | Flovent® HFA (fluticasone propionate) | Asthma/ COPD | \$7.29 | 1.1% | 23.9% | 4.7% | 29.8% |
| 7 | 7 | Lyrica® (pregabalin) | Seizure/pain | \$7.27 | 1.1% | 1.9% | 10.5% | 12.6% |
| 8 | 12 | Vyvanse® (lisdexamfetamine) | Behavioral health | \$5.99 | 0.9% | 0.7% | 8.9% | 9.6% |
| 9 | 6 | Januvia® (sitagliptin) | Diabetes | \$5.86 | 0.8% | -19.0% | 8.1% | -12.5% |
| 10 | 8 | Methylphenidate ER | Behavioral health | \$5.71 | 0.8% | -4.2% | -1.8% | -5.9% |

Source: MedImpact Medicaid Book of Business 2018



TOP 10 SPECIALTY DRUGS

MEDICAID LINE OF BUSINESS

Humira and Enbrel ranked number 1 and 3 respectively for Medicaid specialty spend in 2018. With no biosimilars expected for these agents until at least 2023, these brands will likely continue to be major components of spend and trend. Stelara, the only other inflammatory disease agent on the top 10 list, jumped from number 14 to number 7 due to a dramatic increase in utilization. Two oncology agents, Revlimid and Ibrance, experienced double-digit trend and made the top 10 list in 2018. Hepatitis C treatments

Mavyret and Eplclusa remained in the top 10, although we saw a dramatic shift in use to Mavyret. Both utilization and cost have decreased in the Hepatitis C therapeutic class, compared to other lines of business, Hepatitis C spend and trend will remain important for Medicaid. Genvoya, Trimeq, and Tivicay used for the treatment of HIV, made the top 10 list for Medicaid Specialty in 2018 with double-digit increases in trend.

| 2018 RANK | 2017 RANK | DRUG NAME | THERAPEUTIC CLASS | PMPY SPEND | % of Total Spend | TREND COMPONENTS | | |
|-----------|-----------|--|----------------------|------------|------------------|------------------|-----------|--------|
| | | | | | | UTILIZATION | UNIT COST | TOTAL |
| 1 | 1 | Humira® (adalimumab) | Inflammatory disease | \$28.03 | 4.1% | 9.0% | 8.9% | 18.8% |
| 2 | 10 | Mavyret® (glecaprevir/pibrentasvir) | Hepatitis C | \$20.91 | 3.0% | 407.2% | -3.0% | 392.1% |
| 3 | 4 | Enbrel® (etanercept) | Inflammatory disease | \$12.47 | 1.8% | 7.1% | 7.4% | 15.0% |
| 4 | 5 | Genvoya® (elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide) | HIV | \$10.07 | 1.5% | 26.8% | 7.1% | 35.8% |
| 5 | 7 | Triumeq® (abacavir/ dolutegravir/ lamivudine) | HIV | \$7.72 | 1.1% | 10.2% | 8.5% | 19.6% |
| 6 | 11 | Revlimid® (lenalidomide) | Oncology | \$5.20 | 0.8% | 26.4% | 11.8% | 41.4% |
| 7 | 14 | Stelara® (ustekinumab) | Inflammatory disease | \$5.04 | 0.7% | 40.3% | 1.8% | 42.8% |
| 8 | 2 | Eplclusa® (sofosbuvir/ velpatasvir) | Hepatitis C | \$4.63 | 0.7% | -72.0% | -13.4% | -75.7% |
| 9 | 9 | Tivicay® (dolutegravir) | HIV | \$4.41 | 0.6% | 20.0% | 5.7% | 26.9% |
| 10 | 13 | Ibrance® (palbociclib) | Oncology | \$4.26 | 0.6% | 16.6% | 2.5% | 15.4% |

Source: MedImpact Medicaid Book of Business 2018



MARKET WATCH

PIPELINE AT-A-GLANCE

💡 SPOTLIGHT: A BLOCKBUSTER ORPHAN AGENT ON THE HORIZON

Industry discussion is increasing about AVXS-101, an intravenous gene therapy for the most severe form of spinal muscular atrophy, as its May decision date approaches. In patients with spinal muscular atrophy, a genetic disease causing neuromuscular decline and death in infants, AVXS-101 demonstrated dramatic results on the disease course, allowing children to sit independently, roll over, and even walk in a few cases. In the landmark trial, 100% of patients were alive and free of permanent mechanical ventilation at 24 months, compared to only 8% of historic controls at 20 months. In addition to the compelling data, discussion has centered around the potential pricing of this agent. Novartis, the manufacturer, has stated that a price of \$4-5 million could be considered cost effective, based on the usual expenses incurred in caring for these patients. However, the Institute for Clinical and Economics Review (ICER) found that at commonly accepted thresholds, AVXS-101 was cost effective up to \$900,000. While cost has not yet been established for AVXS-101, it is expected to come with a six-figure price tag.

AN ORAL OPTION FOR AN ESTABLISHED DIABETES DRUG CLASS

The first oral GLP-1 receptor agonist just received an expedited review timeline from the FDA, and could reach the market in 2019, earlier than anticipated. This oral tablet formulation of semaglutide, currently available on the market as Ozempic in an injectable form, has demonstrated superiority to Victoza at the highest dose studied. It is anticipated that an oral option may increase GLP-1 utilization overall in the U.S. as some patients are opposed to administering injections.

💡 NOTEWORTHY: LIST PRICES ON CANCER DRUGS

Biomarker testing is being utilized more frequently in oncology to identify the presence of a mutation that is driving cancer growth and to provide a target for a directed cancer therapy. While these targeted therapies may represent a significant therapeutic advancement by shrinking tumors previously resistant to available therapies, they also are associated with high cost due to the small patient population affected. An example from last year is Vitrakvi, an oral kinase inhibitor indicated for solid tumors that have a NTRK gene fusion mutation, which launched with an exorbitant price of \$39,360 per month AWP, independent of the cost of biomarker testing itself. This trend continues in 2019 with about half of the cancer drugs in the pipeline associated with required biomarker testing, including a second NTRK-targeting agent, entrectinib, under review with a decision in August.



INFLAMMATORY DISEASE FORECAST

The inflammatory disease therapeutic class will continue to dominate the spend across all lines of business, especially in commercial, until biosimilars for Humira and Enbrel are marketed in the United States, likely not until 2023. Although rheumatoid arthritis commands the majority of the spend within inflammatory disease, other conditions such as psoriatic arthritis, plaque psoriasis, and Crohn's disease will continue to increase spend.

HIGH COSTS PROJECTED FOR BLOOD DISORDERS

Spend in the blood disorders therapeutic class is dominated by Eliquis and Xarelto. Both drugs have gained indications that have expanded the patient population since their approval in 2012 and 2011, respectively. In October of 2018, Xarelto gained another indication to reduce the risk of major cardiovascular events in patients with chronic coronary artery disease or peripheral artery disease. This indication is projected to bring in an additional \$1.5 billion annually in U.S. sales alone, a potential increase of 60%. There is a slim chance that Eliquis may potentially face generic competition in 2020.



MARKET WATCH AT-A-GLANCE

STAYING AHEAD OF THE PIPELINE

TRENDS IN FDA DRUG APPROVALS

The Federal Drug Administration (FDA) approved an all-time high number of both brand and generic drugs in 2018 — approving 59 novel agents. This sets a new high standard considering they approved 46 agents in 2017, with an average approval rate of 32 agents in the last decade. This past year represents an 84% increase in approval rate.

The entry of blockbuster innovative specialty drugs in the pipeline brings high-impact, high-cost drugs offering potentially life-changing treatments, but they can come at staggering costs.

As the growth and costs of specialty and orphan drugs continue to rapidly rise, plans feel the harsh financial impact of these increases. While innovator drugs often steal the spotlight, prices on established drugs have been inflated by manufacturers as generic market competition increases.



BIOSIMILARS TODAY AND TOMORROW

A record number of biosimilars was reviewed by the FDA in 2018 with a total of seven receiving approval, including the first biosimilars for Epogen/Procrit, Neulasta, and Rituxan. Four of the approved biosimilars have already hit the market, though market uptake has been variable across products.

In 2018, Sandoz's Zarxio, a biosimilar for Neupogen that was approved in 2015, became the first biosimilar to take the lead in market share over its reference product. However, it took three years from launch to reach this achievement. A second biosimilar in this space, Nivestym, also launched in 2018 and will further drive competition.

In contrast, uptake of other biosimilars has been slower. Despite two biosimilars on the market, Remicade's market share has been holding strong throughout the years and still claimed 93% of the market near year's end. The increased competition has led to a slow but appreciable decline in costs with Remicade pricing decreasing by roughly 10% annually per reported average sales price (ASP).

Looking ahead, the first biosimilars for Avastin, Herceptin, and Rituxan are expected to launch this year as patents for these blockbusters expire. While only one biosimilar each is currently approved for Rituxan and Avastin, four biosimilars have been approved for Herceptin and could launch within a similar timeframe, providing significant competition. With combined sales in the U.S. in 2018 of more than \$10 billion, biosimilars for these three products could provide substantial savings in oncology.

FDA 2018 Approvals By The Numbers

59

record-breaking
novel agents

7

biosimilars

5

biologic products

971

marketed generics &
novel formulations

High Percentages

84% ↑

increase
in approval
rate since 2017

76%

oncology drugs
received orphan
drug designation

58%

of novel drug
approvals
treat rare
diseases

39% ↑

increase in
orphan drug
approvals
since 2017

MARKET LANDSCAPE

INDUSTRY, LEGISLATIVE, AND REGULATORY TRENDS

INDUSTRY CONSOLIDATION

Merger and acquisition activity is sweeping across the industry: Health plans are acquiring PBMs and PBMs are acquiring plans.

At MedImpact, we are an independent company that answers to our clients, members, and employees. For the companies and people we serve, this means that we are dedicated to providing the lowest prices, the most efficient and cost-effective fulfillment, and we are committed to treating our clients as partners.

POLITICAL ENVIRONMENT

Prescription drug costs are a top bipartisan public policy issue at all levels of government, and a key focus of President Trump's Administration. Some key health policy issues affecting pharmacy benefits management and coverage include:

- Medicaid expansion gained momentum in 2018, with several states implementing program changes to provide health coverage to uninsured and under-insured individuals
- Potential changes to Medicare, including eligibility expansion, enhanced drug price negotiation capabilities, and using an indication-based formulary
- Broader support for legislative action to promote competition between generic and biosimilar manufacturers with established brand drugs, such as the CREATES Act
- Uncertainty over the ACA individual mandate being repealed in federal court, and how this decision being upheld or overturned will affect all payers across the industry

CLINICAL SAVINGS

Clients who moved to MedImpact from other PBMs in 2018 **saved \$3.55** per member per month by using our clinical trend management program.



REBATES

The pharmacy rebate system is evolving. Earlier this year, President Trump's Administration proposed revisions to the "safe harbor" exceptions to the federal Anti-Kickback Statute. One such change is that PBM-negotiated rebates and discounts for Medicare and Managed Medicaid plans would be allowed only when the savings are provided to consumers at the point of sale.

We fully support the Administration's goals of aligning incentives, increasing transparency, and reducing consumer out-of-pocket costs. However, the Administration's proposed rule has important challenges and potential unintended consequences. For example, the rule might lead to higher premiums for consumers. Because the rule will require significant changes in the way the industry exchanges and reconciles funds, it could result in significant disruption in the industry.

Whatever the final rule is, we will fully comply, adapt our rebate and contracting strategies, and educate our clients on what it means for them.

DISPELLING THE MYTH GENERIC DRUGS ARE NOT ALWAYS LOW COST

The prices of nearly 400 generic drugs skyrocketed more than 1,000% over the past five years.¹ While the average generic drug price has remained stable or decreased, we've seen some skyrocketing price increases in some generics over recent years.

Plans can reduce high-cost generic drug spend by incentivizing the use of lower cost alternatives by up-tiering high-cost generic drugs to a brand copay.

GENERIC DISPENSING RATE

MedImpact had a generic dispensing rate of 89.5 percent for commercial clients in 2018, an improvement of 39 basis points over the previous year. This is consistent with our strategy to maximize generic dispensing where appropriate.

| | 2017 | 2018 | Year Over Year Change |
|-------------------|--------|--------|-----------------------|
| Commercial | 89.12% | 89.51% | 0.39% |
| Medicaid | 90.30% | 90.37% | 0.07% |
| Medicare | 91.08% | 91.34% | 0.26% |

Source: MedImpact Book of Business 2018

*Generic Dispensing Rate excludes supplies from measurement

5 FACTS ABOUT RISING HIGH-COST GENERIC DRUGS

1. Generic drugs are not always inexpensive. While the costs of most generic drugs remains stable, approximately 2% of generics have increased by more than 1000%¹, drawing the attention of media, lawmakers, the FDA and the U.S. Department of Justice.²
2. While the 2017 national average generic list price was \$25, a wide disparity in generic drug prices exists. And the proportion of generic drugs with extraordinary price increases is growing.³
3. In fact, researchers have found that amongst commonly used generic antibiotics 14% sustained large price increases of 90% or more.⁴
4. Causes of rising generic costs are multifactorial — lack of competition, market manufacturer consolidation, closed distribution systems, stringent manufacturing standards, raw material shortages, and FDA backlog.⁵
5. The Department of Justice and 45 states are claiming that generic drug prices are fixed and the alleged collusion may have cost U.S. businesses and consumers more than \$1 billion.⁶

Congress initiated investigations of these price increases. And the Department of Justice issued subpoenas to some generic drug companies executives as part of an investigation into possible violations of anti-trust laws.⁷

SIGNIFICANT SAVINGS FOR PLANS IN 2018

Our HCG Choice program identifies high-cost generics that have lower cost alternatives, and helps plans and members save money. We provide proactive prescriber, pharmacist, and member communications to help minimize disruption and facilitate the switch to clinically appropriate, lower-cost alternatives. Members who switched from high-cost generic drugs to alternatives also benefited from savings — providing better value for all.

\$30 HIGH-COST
MILLION GENERIC SPEND
SINCE 2015



\$1.30 - \$4.33
PMPM PMPM

**HCG CHOICE PROGRAM
SAVINGS FOR PLANS IN 2018**

1. MarketWatch. Why Drug Prices Remain Insanely High and 6 Things You Can Do To Save: www.marketwatch.com/story/six-tips-for-fighting-rising-prescription-drug-costs-2015-09-15
 2. JAMA. The High Cost of Prescription Drugs in the US: Origins & Prospects for Reform: <https://jamanetwork.com/journals/jama/fullarticle/2545691>
 3. IQVIA. Medicine Use and Spending in the U.S., A Review of 2017 and Outlook to 2022. April 2018
 4. Alpern JD et al. Trends in Pricing and Generic Competition Within the Oral Antibiotic Drug Market in the United States. Clin Infect. Dis. 2017;65(11):1848-52.
 5. Academy of Managed Care & Specialty Pharmacy. "High-cost generic programs decrease drug spend in 5 plans" www.managedhealthcareexecutive.com/business-strategy/high-cost-generic-programs-decrease-drug-spend-5-plans
 6. NPR. Probe Into Generic Drug Price Fixing Set To Widen; March 2018.
 7. New England Journal of Medicine: High-Cost Generic Drugs — Implications for Patients & Policymakers. www.nejm.org/doi/pdf/10.1056/NEJMp1408376

LOOKING AHEAD

FOCUSED ON THE FUTURE

FOR US, IT'S PERSONAL

For the past 30 years, we've focused on low-net cost and improving member care – and we've never lost sight of who the benefits are for.

We are flexible, forward thinking, and focused on the future. And we put clients and members first with:

- Highly customized benefit designs, formularies, clinical programs, and advanced reporting to meet our client's' needs
- Home delivery focused on adherence and keen oversight to reduce waste
- Advanced clinical programs and client-first approach

ABOUT MEDIMPACT

MedImpact is the PBM that puts clients and consumers first. For 30 years, we have had a single mission: To help make pharmacy benefits affordable, understandable, and transparent. Today, our team and technology serve many large employers and plans and more than 55 million consumers in the U.S. and around the world. We are an independent company that answers to our clients, consumers, pharmacy partners, and employees, not Wall Street. We are passionate about providing access to the lowest cost prescriptions. Always. Learn more at pbm.medimpact.com.

CONTACT US TO LEARN MORE

Please contact your MedImpact representative to learn more on how we can help you lower costs through effective trend management. If you don't have an account, email us at info@medimpact.com. You can also learn more at pbm.medimpact.com.

TREND CALCULATION METHODOLOGY

The data used in this report is composed of MedImpact's primary benchmarks: Commercial (including health plans and self-funded employers), Medicaid, and Medicare Part D. Plans were excluded from the sample data set if they:

- Did not have 24 months of continuous claim and eligibility data
- Had a greater than 20% change in enrollment
- Were designed as cash card discount programs
- Had no eligible or utilizing members.

Total trend measures the change in total cost per-member-per-year (PMPY) year over year. Total cost includes: ingredient cost, discounts, taxes and dispensing fees, and is net of rebates (in which rebate data is available when MedImpact provides rebate contracting services). Inflation measures the change in unit cost (total cost per day supply) year over year and net of rebates. Utilization measures the change in day supply PMPY year over year.

The *MedImpact Annual Trend Report* includes analysis of both traditional and specialty medications. The MedImpact definition of a specialty drug is composed of a proprietary list to include categories sometimes carved-out, such as oncology, anticoagulants, HIV, behavioral health, hematological agents, fertility, and transplant.



Mediimpact

