

Executive Summary

Calendar year 2017 was the fifteenth year of operation for the university’s self-administered prescription drug plan. In 2017, the plan cost of \$124M represented 22.3% of the university’s \$556M total expenditure on health benefit programs. With the inclusion of the medical drug spend, drug cost represents 31.6% of the university’s total spend on health benefit programs. Growth in membership, increased utilization, high-cost specialty drugs and inflation contributed to a gross 5.2% increase in total drug cost in 2017, down slightly from the 5.9% increase in 2016. On a per-member basis, self-management held the total drug cost increase to just 1.9% in 2017. Specialty drug spending continues to grow despite representing only 1.4% of all claims. Gross total cost for specialty drugs rose 11.3% (or 7.8% on a per-member basis) in 2017, representing 38.6% of total pharmacy costs.

The pharmacy benefit team continues to leverage clinical expertise and innovative strategies to control costs, improve outcomes and support university objectives. While the university’s trend in expenditure continues to remain below national benchmarks, the rising costs of pharmaceutical products may warrant more aggressive approaches related to specialty drugs and member cost share going forward.

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2017 Cost and Utilization Metrics

Below are key performance metrics based on an average 108,832 eligible members per month, a 3.3% increase in membership over 2016. Eligible membership has grown on average 2.7% per year for the last five years.

Table 1: Cost and Utilization Metrics, 2017

	All Claims		Non-Specialty		Specialty	
	Cost and Utilization	Change from 2016	Cost and Utilization	Change from 2016	Cost and Utilization	Change from 2016
Claim Volume*	994,009	2.0%	980,226	2.3%	13,783	-16.1%
Utilizing Members	83,822	3.0%	83,752	3.0%	1,949	-27.4%
Total Drug Cost	\$135,557,678	5.2%	\$83,239,647	1.7%	\$52,318,031	11.3%
Plan Cost	\$123,644,896	5.3%	\$71,651,054	1.4%	\$51,990,842	11.6%
Member Cost	\$11,912,7825	2.9%	\$11,585,593	3.7%	\$327,189	-18.5%
Percent Member Total Cost Share	8.8%	-0.2%	13.9%	0.2%	0.6%	-0.3%
Total Drug Cost PMPM**	\$103.80	1.9%	\$63.74	-1.5%	\$40.06	7.8%
Plan Cost PMPM	\$94.68	2.1%	\$54.87	-1.8%	\$39.81	8.0%
Member Cost PMPM	\$9.12	-0.4%	\$8.87	0.34%	\$0.32	0.0%
Avg Nbr of Claims Per Utilizing Member Per Year	11.9	1.0%	11.7	-0.7%	7.1	15.5%
Average Day Supply Per Claim	46	2.2%	46	2.1%	30	-10.5%

*2017 HIV medications reclassified to specialty & anticoagulants to traditional

**PMPM = per (eligible) member per month

Table 2: Tier Utilization, 2017

Drug Tier	Paid Claims	% Total Claims			% Plan Cost		
	2017	2017	2016	Change	2017	2016	Change
Tier 0 – \$0 Copay	71,293	7.2%	6.3%	0.9%	11.6% (\$14.2M)	11.2%	0.5%
Tier 1 – Generics	833,538	84.0%	84.1%	-0.1%	17.0% (\$20.7M)	19.7%	-2.7%
Tier 2 – Preferred Brands	52,990	5.3%	5.8%	-0.5%	57.2% (\$69.7M)	55.3%	1.8%
Tier 3 – Non-Preferred Brands	25,012	3.5%	3.8%	-0.3%	14.2% (\$17.4M)	13.8%	0.4%

Note: Tier 0 represents generic and brand claims where the out of pocket cost to the member is \$0. Prior to 2013, this only applied to insulin and syringes for diabetes. In 2014, \$0 copay was also applied to preventive care drugs under the Affordable Care Act(ACA) including contraceptive products for females. Cholesterol lowering statins were added to ACA \$0 copay preventive care drugs in November 2017. Excludes 'paper' claims.

Plan Operations and Administration

Vendors and RFPs

2017 was a light year for contracting with only the new operational contracts completed with Michigan Medicine Medical Group (MMMGM) for comprehensive medication reviews and active switch programs.

Benefits Administration Office Staffing

The Prescription Drug Plan backfilled our Specialty Pharmacist position in 2017. A candidate search was completed in early summer of 2017 and Stephen Lott, PharmD, MS, CSP, was hired effective July 24, 2017. Dr. Lott returns to the university with years of experience managing specialty pharmacy utilization and spend for payer groups, as well as conducting utilization reviews and outcomes research with a large specialty pharmacy.

In support of the University of Michigan's academic mission and key partnerships with the College of Pharmacy and Michigan Medicine, the Benefits Administration Office is in the second year of hosting a Pharmacy Residency Training Program. The initial on-site accreditation survey was completed in the fall of 2017. Our residency program offers real-world learning in all aspects of pharmacy benefit management, including member support and communication, formulary management, and network and vendor management. This program underscores our commitment to education, training leaders and being a national leader in pharmacy benefits.

Regulatory Compliance

Federal and state regulations require the plan to comply with rules and guidance for employers. The plan paid just over \$1M for the State of Michigan Health Insurance Claims Assessment (HICA) insurance claims tax in 2017, an increase of 31.7% from 2016. The HICA tax rate remains unchanged at 1% in 2018.

Since 2015, Truven Health Analytics has administered the Medicare Part D Retiree Drug Subsidy (RDS for the drug plan. The Centers for Medicare and Medicaid Services (CMS) continues to pay this subsidy based on eligible claims. The plan received \$4.3M from CMS in 2017.

Requirements under the Affordable Care Act (ACA) continued to impact the plan in 2017. The ACA requires coverage of preventive care medications at no out-of-pocket cost to patients, including female contraception; smoking cessation products; breast cancer prevention; use of statins for primary prevention of cardiovascular disease (new in 2017); and aspirin, folic acid, iron and other supplements for high-risk patients. Although not required by the ACA, the plan has historically also provided insulin at no out-of-pocket cost to members. Plan expenditures for the \$0 tier copay in 2017 were \$14.2M, including \$1.8M in member copay relief. Contraceptives received the majority of copay relief at \$860K, followed by insulin and diabetic supplies at \$638K.

Prior to 2014, the plan's infertility benefits were limited to \$5,000 per family per lifetime. Because dollar limits are not permitted under the ACA, the plan now limits higher-cost fertility drugs to a maximum of five claims per family per lifetime, with no limits for lower-cost fertility drugs. In January 2015, the university also implemented a pilot to cover in vitro fertilization (IVF) procedures. Overall plan expenditures for infertility medications declined from a high of \$1.5M in 2015 to \$1.0M in 2017. We believe that the warehoused demand for IVF procedures and corresponding drugs may now have been addressed, and that we have moved into a steady state demand level with a 4.8% increase in plan cost over 2016. A retrospective review shows that the average plan cost for a member using infertility medications with a five-claim limit is approximately \$8,779 per lifetime. We plan to conduct a comprehensive review of infertility drug coverage in 2018.

We continue to actively monitor the legislative and regulatory landscape in order to be as prepared as possible to respond to any changes that may occur.

Cost Management

Plan Cost

In 2017, the total plan cost including MedImpact administrative fees and state taxes was \$126.4M. The plan cost based solely on drug and dispensing fees represented 22.3% (\$124M) of the \$556M university cost for medical and drug benefit programs. Specialty drug utilization was, again, the overwhelming main cost driver in 2017.

The cost of drug claims billed through the medical benefit was \$52M in 2017. Together, medical and pharmacy drug claims are 31.6% (\$175.6M) of the \$556M university cost for medical and drug benefit plans.

A total of 994,009 prescriptions were dispensed at a total plan cost of \$124M in 2017, a 5.5% increase from 2016. The following table depicts the changes by employee type. Long-term disability (LTD) represents only 1% of the plan member population. The declines in cost were driven by lower utilization by the 2017 LTD members.

	Plan Cost	PMPM	Change from 2016	% of Plan Paid	Change from 2016
Overall	\$124M	\$94.68	+5.5%		
Active Employees	\$84.2M	\$74.32	+2.3%	68.1%	0.1%
Retirees	\$34.3M	\$213.95	+3.1%	27.7%	0.3%
LTD	\$5.2	\$399.62	-7.0%	4.2%	-0.4%

The average plan cost for a 30-day prescription increased 1.3% from \$79.86 in 2016 to \$80.90 in 2017. The aggregate discount from Average Wholesale Price (AWP) for combined retail and 90-day retail prescriptions was -56.90%; an improvement from -55.0% in 2016. While the plan benefited from more aggressive discounts from MedImpact network management, overall AWP inflation, particularly among generic medications, drove costs up.

Price inflation is occurring with brands as shown in the average ingredient cost despite aggressive negotiated network discounts. The average ingredient cost of a single-source brand prescription increased by 14.4% in 2017 to an average \$852 per prescription, mainly driven by high-cost specialty drugs. The average ingredient cost of a multiple-source brand prescription increased only by 0.09% to an average \$586 per prescription. The average ingredient cost for a generic prescription declined by 8.3% to an average cost of \$31.23 per prescription.

Trend

Total drug cost (combined university plan and member costs) PMPM increased only 1.9% (see Table 3 footnote), from \$101.88 in 2016 to \$103.80 in 2017. The Express Scripts 2017 Drug Trend Report has reported an overall 1.5% total drug cost PMPM trend for commercially insured plans managed by Express Scripts.

Table 3: University Trend Component Comparison to Express Scripts (ESI), 2017

	Utilization		Unit Cost		Total	
	U-M	ESI	U-M	ESI	U-M	ESI
Traditional	0.6%	0.6%	-2.9%	-4.9%	-2.3%	-4.3%
Specialty	6.0%	8.1%	2.3%	3.2%	8.3%	11.3%
Total	0.6%	0.7%	1.1%	0.8%	1.7%	1.5%

Source: Express Scripts 2017 Drug Trend Report *Trend calculated based on 2017 specialty claims held consistent. The plan numbers presented here will not match those in Table 1 as HIV drugs were reclassified to Specialty and anticoagulants were moved to traditional drugs in 2017.

The following table provides an overview of the factors that impacted plan drug costs in 2017, in order of importance. Further details are provided elsewhere in this report.

Table 4: Top Factors Affecting Drug Costs, 2017

Positive (Mitigated Trend)	Negative (Increased Trend)
<ol style="list-style-type: none"> 1. MedImpact 2016 renewal – better discounts at retail pharmacies, improved rebate guarantees, including specialty drugs 2. Formulary management of high-cost generics 3. Medicare Retiree Drug Subsidy 4. Generic and brand drugs – high generic dispensing rate; less preferred and non-preferred brand use 5. Increased use of Michigan Medicine Specialty Pharmacy discounts on specialty drugs 6. Prior authorizations, step therapy and quantity limits, assuring appropriate use 	<ol style="list-style-type: none"> 1. Higher than typical price inflation 2. Addition of more high-cost specialty drugs, more indications, and increased utilization for specialty drugs 3. 3.3% Increase in eligible membership and 3.0% increase in utilizing members 4. Fewer patent expirations impacting generic dispensing rate 5. Declining member cost share 6. Increased cost shift of member copays for \$0 preventative drugs with the addition of statin medications

The average percent of claims dispensed as generic increased from 86.1% to 87.0% in 2017. The increase in generic dispensing rate is estimated to account for approximately \$383K in savings. In 2018, the projected new-to-market generic entries will represent about 6.0% of total drug cost and 2.6% of all claims. Uncertainty exists surrounding the introduction of generic albuterol HFA (ProAir HFA and Ventolin HFA), which represents a large portion of claims expected to move to generic in 2018. As a result, we expect the change in generic fill rate in 2018 will likely be smaller than we originally hoped.

The 2017 low traditional drug trend helped to offset the 7.8% specialty PMPM trend. Industry reports indicate that specialty drugs alone will represent 50% of all drug plan costs by 2018. If the university 2017 trend is projected forward, the university specialty drug cost will reach 50% of the total spend in 2024, four years later than the 2016 annual report estimate.

Traditional Pharmacy

The top three traditional therapeutic classes for cost during 2017 included drugs to treat diabetes (\$16M), asthma/COPD (\$8.7M) and anticoagulation (\$4.1M).

The plan spent of \$16M for diabetes drug treatments (12.9% of plan cost) in 2017, increased from \$14.3M in 2016. The insulin average unit cost paid increased 6% and accounted for \$1.2M of the \$1.7M increase in diabetic drug therapy cost. Formulary removal of high-cost generic metformin ER (Fortamet) helped to mitigate the increase in cost for diabetic drug cost compared to the \$2.3M increase that occurred in 2016. We are hopeful that the expected market entry of multiple insulin biosimilars will assist in controlling cost in this drug class going forward.

The plan spend for asthma/COPD products increased by \$661K or 8.2% in 2017.

The anticoagulant plan cost increased \$1.1M in 2017, primarily due to the direct-acting oral anticoagulants’ increasing use in practice. In 2017, the plan reclassified anticoagulants as traditional drugs and HIV medications as specialty drugs to more accurately reflect the products’ distribution channels. Anticoagulants have always been available to members at any pharmacy but reported as specialty drugs. Effective July 1, 2017 HIV medications were required to be filled at our specialty pharmacy or mail order.

New Drug Impact

New brand products approved in 2017 contributed \$730K in total drug cost. These were:

Generic Name	Brand Name	Use
Pirfenidone	Esbriet	Idiopathic Pulmonary Fibrosis
Tenofovir Alafenamide	Vemlidy	Hepatitis B
Dupilumab	Dupixent	Eczema
Niraparib	Zejula	Ovarian Cancer
Miltefosine	Impavido	Leishmaniasis
Glecaprevir/Pibrentasvir	Mavyret	Hepatitis C
Midostaurin	Rydapt	Antineoplastic
Crisaborole	Eucrisa	Eczema
Belimumab	Benlysta	Lupus
Telotristat Ethyl	Xermelo	Carcinoid Syndrome
Oxymetazoline	Rhofade	Rosacea
Plecanatide	Trulance	Chronic Idiopathic Constipation
Prasterone	Intrarosa	Dyspareunia

New to market generic entries in 2017 yielded an estimated \$989K in savings for the year. The top five new generic savings were:

Generic Name	Brand Name	Use	Estimated 2017 Savings
Desvenlafaxine	Pristiq	Antidepressant	\$304K
Atomoxetine	Strattera	ADHD	\$216K
Mesalamine	Lialda	Ulcerative Colitis	\$109K
Eletriptan	Relpax	Migraines	\$58K
Zileuton	Zyflo	Asthma	\$39K

Late entry 2017 new generics, which are expected to contribute to 2018 savings, include sildenafil (Viagra, erectile dysfunction), glatiramer acetate (Copaxone, multiple sclerosis), vigabatrin (Sabril, seizures), and tenofovir disoproxil (Viread, antiviral).

Member Cost Share and Utilization

Member Cost Share

Due to a number of high-volume drugs facing generic competition, member cost share has steadily declined since 2003, reversing course briefly in 2014 due to copay increases for generic and preferred brand tiers of drugs. Member cost share declined from 9.0% in 2016 to 8.8% in 2017. On average, members paid \$11.98 per prescription and the plan paid \$124.39, up from \$120.31 per prescription in 2016. Drug plan members paid \$11.9M in total out-of-pocket cost, an increase of 2.9% from 2016. In comparison, the plan paid \$124M on their behalf, an increase from \$117M paid in 2016. Nationally, the member share of drug cost is approximately double what university members contribute.

Table 5: Member Copays (30-Day Supply)

Drug Type	U-M Prescription Drug Plan	National Benchmark*
Generic	\$10	\$11.55
Preferred Brand	\$20	\$31.41
Non-Preferred Brand	\$45	\$59.14

*Source: 2017 PBMI Trends in Drug Benefit Design

Currently, all union groups have the standard copayment structure, except the Michigan Nurses' Association, which currently has lower copays than other plan members.

Member Utilization

In 2017, 77.0% of eligible members utilized their drug plan benefit, down 0.2% from 2016. The number of eligible members increased to 108,832, a 3.3% increase over the previous year and a normal growth rate. The average number of prescriptions per member declined 1.2% from 2016 to 2017, at 9.1: 7.2 for active employees, 21.4 for retirees, and 28.2 for long-term disability members. The average day supply per claim increased from 45 days to 46 days.

Members continue to value the convenience of 90-day prescription fills through both retail locations and mail order. Total 90-day fill penetration increased from 59.4% in 2016 to 61.1% in 2017. The 30-day normalized prescription utilization increased overall by 3.8% in 2017, the same percent increase as 2016.

A strategic goal for fiscal year 2018 is to increase the day supply percentage of maintenance drugs filled at 90-day retail and mail order for better patient adherence and reduced cost. Studies have shown that 90-day supply claims are associated with better patient adherence and the distribution channels of 90-day retail and mail order provide the best contracted rates. To improve our 90-day fill rate on maintenance drugs, we have engaged in strategic quarterly member lettering promotions. In 2017, 73.3% of maintenance drugs were dispensed for 90-day supplies, an improvement over 71.8% in 2016.

Specialty Pharmacy

Specialty drugs, including self-administered injectables, drugs that require special monitoring, and high-cost oral drugs, are of significant concern when assessing cost drivers and future plan cost. Of the 46 newly approved FDA 2017 drug entities, 29 fall under the pharmacy benefit, and 20 of these are considered specialty. In many cases, the new specialty products provide therapeutic advances in various clinical conditions among small groups of patients, and are therefore priced at a premium cost. Despite much promise for the emergence of biosimilars and lower-cost generics within this category, the majority of specialty drugs dispensed continue to be brand-name products with no generic equivalent or interchangeable biologic.

Specialty drugs represented only 1.4% of all claims in 2017, yet accounted for more than 38.6% of total drug cost (plan cost plus member cost), up from 36.5% in 2016. A total of 13,783 specialty drug claims were paid at a plan cost of \$52M, an 11.3% increase over 2016. The average ingredient cost of a specialty drug was \$3,795 per prescription, with an average day-supply of 32 days.

Anti-Inflammatory Agents

The self-administered, injectable anti-inflammatory class of drugs commonly used to treat inflammatory diseases such as rheumatoid arthritis, Crohn's disease, ulcerative colitis, and psoriasis continued to be the number one area of specialty drug expenditures in 2017. Anti-inflammatory agents surpassed diabetes agents to be the plan's overall number one drug class in plan cost. The plan spent \$19.6M for these products, an increase of 39% compared to 2016. Utilization of these agents only increased 13% in 2017, indicating that the increase in spend was primarily driven by increases in drug costs.

Novel anti-inflammatory drugs approved in 2017 and covered by the plan include brodalumab (Siliq) and guselkumab (Tremfya) for the treatment of plaque psoriasis, sarilumab (Kevzara) for the treatment of rheumatoid arthritis, and dupilumab (Dupixent) for the treatment of eczema. Of these products, dupilumab has seen the fastest growth in utilization, accounting for \$82K of plan spend in 2017.

Several previously approved agents also received expanded approvals in 2017, most notably ustekinumab (Stelera) for the treatment of Crohn's disease. This new indication drove plan spend on this product over 500% to \$1.3M in 2017, compared to just \$215K in 2016. Expanded indications for adalimumab (Humira), tocilizumab (Actemra), and abatacept (Orencia) all led to modest increases in utilization and plan spend as well.

Multiple Sclerosis and Oncology

Multiple sclerosis and orally administered cancer medication made up the next two most expensive specialty drug classes. The number of members treated for multiple sclerosis increased 5.0% to 188 utilizers in 2017, but plan spend remained unchanged at \$8.9M in 2017. This flat level of spend was helped by the introduction of generic formulation of glatiramer acetate 40 mg (Copaxone). Oncology drug spend increased from \$8.6M in 2016 to \$10.3M in 2017, which was directly in proportion to the number of members treated. The three top oncology products in 2017 were lenalidomide (Revlimid, \$2.4M), palbociclib (Ibrance, \$1M), and ibrutinib (Imbruvica, \$873K).

Human Immunodeficiency Virus (HIV)/Hepatitis C Virus (HCV)

Two new combination products to treat HCV were approved in 2017 – sofosbuvir/velpatasvir/voxilaprevir (Vosevi) and glecaprevir/pibrentasvir (Mavyret). Both agents are now available to members and are relatively less costly than previous agents, while still providing cures in more than 95% of treated patients. The plan was able to treat 28 members with HCV in 2017 at an average plan cost of \$60,556/treatment.

While no novel HIV products were approved in 2017, the year marked the first in which more plan members were treated for pre-exposure prophylaxis (PrEP) therapy than had the virus, marking an important milestone for the plan and the university in the fight against HIV/AIDS.

Cystic Fibrosis

There have been several advances in the treatment of Cystic Fibrosis (CF) over the past few years. The university covers a class of new medications for the treatment of CF called CFTR (cystic fibrosis transmembrane conductance regulator) modulators. This class of medications is the fastest-growing class in terms of cost per treatment, and will likely continue to grow in 2018 with the approval of newer, broader-use agents. In 2017, seven members were treated at a plan-cost of \$1.1M.

Biosimilars and the Specialty Pipeline

The FDA established new pathways for approval of biosimilar specialty drugs several years ago. A biosimilar is a biological product that is approved based on showing that it is highly similar to another FDA-approved biological product in terms of safety and effectiveness. The hope is that biosimilar drugs will decrease the costs of therapy in the same way that generic drugs did in the past. Express Scripts predicts that \$250 billion could be saved nationally in the next 10 years if biosimilars become available for the 11 most-used specialty drugs. To date, nine biosimilars for specialty products have been approved by the FDA, but only two - filgrastim-sndz (Zarxio) and infliximab-dyyb (Inflectra) – have become available for use. Biosimilar products for adalimumab (Humira) and etanercept (Enbrel), the plan's first and second products in overall spend, have been approved by the FDA, but litigation and manufacturing complications have pushed their estimated arrival date to beyond 2020.

Insulin cost accounted for well over half of the \$16M in the diabetic drug class. Late in 2016, the first insulin glargine (Lantus) biosimilar, Basaglar entered the market. In 2017 a second insulin glargine (Lusduna) was approved, with a third in the pipeline. Additionally, the FDA approved late in 2017 insulin lispro (Admelog), a biosimilar to Humalog. We are hopeful that competitive biosimilar insulin market entries will assist in mitigating the cost trend in this drug class.

The drug pipeline will continue to have a significant impact on specialty drug spend for the university. The pipeline is rich with drugs undergoing investigational studies in areas such as cancer, inflammatory conditions, and orphan diseases. Additionally, several new biologic agents to prevent and treat migraines are expected in 2018, which will likely be classified as specialty. The plan will continue to monitor and assess innovative ways to provide members access to these products, while striving to sustain affordable health care for the university and its members.

Current and Future Specialty Strategies

A major ongoing initiative is an evaluation of medical and pharmacy specialty drugs to identify opportunities for improved management. Approximately 50% of all specialty drugs, representing \$52M, are covered through the university medical plans and administered in hospitals, outpatient clinics, infusion centers and physician offices. Late in 2017, the university was able to improve the management for medically administered drugs. The overlap, gaps and economic differentials for the products and sites of care will continue to be examined in 2018.

A market trend that continued in 2017 was the emergence of new specialty products that are self-administrable, shifting costs from the medical benefit to the pharmacy benefit. Belimumab (Benlysta), previously available under the medical benefit as an infused therapy, is now available under the prescription drug plan as a self-administered product. The availability of this product is anticipated to shift member utilization to the pharmacy benefit, and reduce overall spend by up to \$300K/year. Other now-covered prescription products include C1 esterase inhibitor (Haegarda) and emicizumab (Hemlibra), both of which may replace products currently covered under the medical benefit. Despite an approximate \$500K/year price tag for emicizumab (Hemlibra), this product may prove to be cost-effective for the plan, as it may prove superior to previous therapies while also reducing the need for medical products that can cost up to \$2.5M PMPY.

The university is currently working on several new, novel utilization management initiatives designed for sustainable health care cost while maintaining comprehensive coverage and access to care for our members. Several evaluations of the clinical and economic impact of plan coverage policies were completed and presented in 2017, and the plan will continue to investigate opportunities in tier strategy, value-and outcomes-based agreements, and oversight and management of specialty spend.

Clinical Administration

Leveraging Expertise

The plan's clinical staff continues to leverage internal and external resources to provide sound, evidence-based recommendations for formulary additions and clinical management. These collaborations will gain importance as the number of specialty and orphan drugs come to market at an increasingly rapid pace in the future.

Consulting with specialist physicians within the university helps establish rational guidelines for the use of medications that are consistent with practices used at Michigan Medicine. We have found that by consulting with experts, particularly those who may have participated in clinical studies on drugs or disease states, we have been able to make better-informed decisions. Plan pharmacists attend the monthly Pharmacy and Therapeutic (P&T) Committee meetings and the Cancer Pharmacy Committee at Michigan Medicine, in addition to collaborating with specialists.

Plan pharmacists also observe quarterly P&T Committee meetings at MedImpact, where they are exposed to the expertise of nationally recognized specialists in a variety of disease states. MedImpact's Clinical Program Manager assigned to the university account is another excellent source of clinical expertise, information about drugs in the research pipeline, benchmarks and competitive insights.

Plan pharmacists professional development and networking activities include membership and conference attendance for Academy of Managed Care (AMCP), Asembia, Pharmacy Benefit Management Institute (PBMI), and various preceptor conferences.

Drug Reviews, Indications and Utilization

The plan's clinical pharmacists review newly approved drugs and other changes each week to identify drugs that will require review by the Pharmacy Benefit Advisory Committee (PBAC). Formulary recommendations and clinical guidelines are presented to PBAC during monthly meetings. In 2017, the drug plan reviewed 60 drugs

(FDA newly approved; previously FDA approved, but newly available in market; significant administrative dosage form changes), of which 47 were approved for coverage.

In addition to new drug reviews, the team monitors the market for new indications for old drugs and plan utilization to assess the appropriateness of use by plan members. In 2017, 53 specialty drug and 10 traditional drug prior authorization guidelines were revised based on these changes.

In 2015, the plan stopped covering compounded medications made from bulk chemicals, with the exception of pediatric compounds where the formulation has been endorsed by the State of Michigan Standardized Oral Liquids for Pediatrics collaborative. This compound policy coverage change resulted in a reduction in compound cost in 2017 to \$26K, down from \$216K in 2015.

Drug Use Evaluation (DUE) Programs

Quarterly drug utilization reviews are conducted to assure safe and effective utilization of prescription drugs by plan members. The goal of these DUE programs is to improve the quality of care and avoid potential complications of drug therapy.

The university has three continuous retrospective DUE programs: Asthma Management, Opioid Overutilization, and Controlled Substances Overutilization. These programs look at past pharmacy claims to identify potential safety and utilization management issues. Physicians are notified via letter of any patients that have been identified using the pre-specified criteria.

The Asthma Management Program identifies members with four or more claims for asthma rescue medications without medications to prevent asthma exacerbations over a 12-month timeframe. Claims data for asthma medications are analyzed each year during the second quarter. In 2017, 201 patients were identified as meeting the above criteria and letters were mailed, a 3.1% increase over 2016. Reevaluating claims utilization from letters mailed in 2017 shows that 50% of the patients had added preventive medications to their treatment regime.

The Opioid Overutilization DUE Program identifies members receiving greater than 120 mg morphine-equivalent doses per day of opiates for at least 90 consecutive days in the previous six months. Physician mailings were sent quarterly starting in the first quarter of 2016. Quarterly outcomes reported an average success rate of 34% in 2017, where success was defined as the member did not meet criteria in the outcomes measurement period.

The Controlled Substances Overutilization Program identifies members filling 10 or more controlled substance prescriptions over a three-month period. Approximately 58 members were identified as meeting criteria for each quarter in 2017, a 12% reduction over 2016. The controlled substances overutilization program yielded an average 61% success rate. Success was defined as the member did not meet criteria in the outcomes measurement period.

Opioid Epidemic

National attention has been given to the opioid epidemic over the past few years. Together with MedImpact, the prescription drug plan is actively addressing opioid utilization among its members. Our current efforts include the two DUE programs described above and utilization management (maximum daily dosing and prior authorization). In 2016, the plan reduced our maximum daily dosing limit on all acetaminophen combination opioid products, to 3 grams of acetaminophen per day to be consistent with labeling maximums.

The plan paid \$1.3M for opioid-containing products in 2017, down 20% from two years previously in 2015. Compared to 2015, the number of paid claims for these agents in 2017 declined by 10.3% and the utilizers per one thousand eligible declined by 14.2%.

CMS has established quality measures to help drive the safe use of opioid medications. Although these measures are only required for Medicare Part D plans, a review of utilization was conducted to establish a baseline for our plan. Among our members using opioids to treat acute pain, 6.7% of them have a cancer diagnosis. Less than 1% of members using these drugs received prescriptions from more than three physicians and more than three

pharmacies or from more than five physicians. Approximately 1.7% of our members using opioid analgesics used doses higher than the morphine sulfate equivalent of 90 mg daily.

Michigan Senate Bill 274 was signed into law by Governor Snyder in December of 2017. The bill becomes effective in the spring of 2018 and restricts opioids prescribed for acute pain to a seven-day supply. First-fill acute pain medications were prescribed for 8,144 members in 2017. Among these prescriptions, 88% were for less than a 7-day supply. A comprehensive, multi-disciplinary review of opioid utilizing members is currently underway, and new initiatives will be considered as 2018 progresses.

Mail Order Pharmacy

NoviXus Mail Services completed its sixth full year of service in 2017. NoviXus is the largest volume pharmacy for the plan. In 2017, 86,761 prescriptions (8.7% of total) were dispensed via mail order with a total drug cost of \$16.3M, a 3.2% increase in volume and \$1.8M increase over 2016. Members paid \$1.5M in copays at the mail pharmacy for 2017, virtually the same as in 2015 and 2016.

Members consistently rate NoviXus as excellent. In 2017 over 6,613 customer calls were handled by NoviXus staff. The average speed to answer a phone call was 12.4 seconds. The majority of prescriptions are transmitted by e-prescribing. NoviXus dispensed 86,761 prescriptions in 2017, with most prescriptions requiring no intervention and 11,101 requiring intervention to clarify information from the patient or prescriber. The average turnaround time for a prescription filled at NoviXus is less than one day, even when intervention is required. Since NoviXus is located in Michigan, prescriptions arrive in the mail more quickly than with the university's previous mail order providers.

Comprehensive Medication Reviews

In 2013, the Michigan Medicine Medical Group (MMMG) was selected to provide Comprehensive Medication Reviews (CMR) for drug plan members on a pilot basis. The pilot intervention focused on medication effectiveness, safety and cost with goals to improve medication adherence, control costs and determine whether CMR should be included as a standard operational component of quality prescription drug plan management for our members.

The pilot program yielded an outstanding 46% CMR completion rate (only 6.8% of CMS Medicare Part D plans had completion rates greater than 40% in 2015). Successful interventions included improved disease control (57.3%), safety (27.5%), and cost (15.2%). The plan was able to save \$2.12 for every \$1 spent on the program. Participating members consistently rate the experience as very helpful, saying they are satisfied and would be very likely to recommend a CMR.

Based on the success of the pilot program we completed contracting in 2017 with MMMG and have moved into the operational phase. For our active employee members, CMR is included in our medical plan capitation rates. For our Medicare eligible members, we will continue offering CMR through the operational processes established during the pilot.

Active Switch Programs

In 2007 and 2008, during the 'generic cliff' period, the Benefits Office engaged the MMMG (previously called Medical Outcomes Program) to conduct provider/member intervention switch programs to move members from brand drugs to lower cost therapeutically equivalent generic in class. Based on the success of these previous switch programs, we completed contracting with MMMG for ongoing active switch programs as opportunities arise.

The first active switch program initiated under the new contract in late 2017 is brand dipeptidyl peptidase-4 (DPP-4) inhibitors to generic alogliptin for the treatment of diabetes. We are currently evaluating several future active switch program opportunities including (1) brand combination inhaled corticosteroid (ICS)/long-acting beta

agonist (LABA) inhalers to generic fluticasone/salmeterol (AirDuo) for COPD/asthma treatment and (2) insulin biosimilars for diabetes treatment.

E-Prescribing

Michigan Medicine physician e-prescribing was implemented in 2010 to improve accuracy, efficiency, safety and member convenience. Overall prescriptions submitted electronically represented 73.6% of all claims in 2017, up 8.7% from 64.9% in 2016. We continue to monitor the ongoing legislative activity around mandating specific drug classes or all prescriptions to be e-prescribed.

2018 Priorities

Major projects targeted by the drug plan for 2018 include:

1. Medicare Part D coordination of benefits requirement.
2. Implement full e-prior authorization.
3. Explore additional brand to therapeutically equivalent active switch programs.
4. Revise the plan dashboard and required reporting for plan performance monitoring.
5. Continue evaluation of medical and pharmacy specialty drugs to identify opportunities for cost containment and improved management.
6. Monitor 90-day pharmacy utilization and assess the effectiveness of the communication campaign to encourage the use of 90-day supplies for maintenance medications
7. Conduct an analysis to determine the feasibility and benefits of moving from the current RDS subsidy payment to the Employer Group Waiver Plan (EGWP) prescription drug plan model.
8. Evaluate the impact of adding a specialty copay tier level.
9. Evaluate the impact of an insulin copayment for non-preferred insulin products.

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