North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
A Division of the Department of State Treasurer

POPULATION RISK REPORT

Actives and Non-Medicare Retirees

October 14, 2024

Doc #: 9989218

Segal

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Background

- Aside from 2023, Segal has prepared a detailed risk study for the State Health Plan (SHP) for the past several years. Consistent with the 2021 and 2022 report, the risk study for this year has been prepared utilizing two different risk models:
  - Clinical Classifications Software Refined (CCSR) developed by the Agency for Healthcare Research and Quality (AHRQ), and
  - SegalRx model developed by health actuaries at Segal.
- The combined risk model provides the following benefits:
  - Provides customizable reports
  - Shows population morbidity changes over time.
  - Provides insights into prescription drug trends
  - Provides a diagnostic tool to assist the SHP in understanding the health of Plan members and the impact of health management and initiatives
- Five years of experience were utilized for the study: calendar year 2019 through calendar year 2023. All experience in this study is shown in the year in which it incurred.
  - Pharmacy rebates are not included in this study.
- Active and non-Medicare retirees and covered dependents are included. Medicare retirees are excluded from the report.
- Note that the 2020 medical risk scores shown throughout this report were artificially low due to underutilization induced by the COVID-19 pandemic.

Objectives

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- Identify the prevalent health risks within the plan's active and non-Medicare retiree population[1] and predict the financial impact of those risks
- Identify emerging health risks
- Understanding the effect of comorbidities and how various chronic conditions interact with each other
- Understanding the effect of mental health disorders and the increased complexity in care management mental health disorders present
- Measure the effectiveness of the wellness programs in improving member health risk over time
- Uncover opportunities for the plan to better control plan cost and improve the health of the covered population
- Measure clinical quality metrics and identify gaps in care
- Quantify health status and underlying drivers of trend
- Proactively identify aberrant utilization patterns
- Improve financial evaluation of program/vendor performance
- Target high risk groups for preventive interventions

[1] **See Appendices for more information on the population included in this study.**

Understanding Risk Scores

Clinical Classification Software Refined (CCSR) and SegalRx

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- This study utilizes the CCSR risk adjustment model for medical benefits and the SegalRx risk adjustment model for prescription drug benefits. More information regarding both models can be found in the Appendix of this presentation.
- Both models provide risk scores that are to be used as a measure of population health.
  - For the CCSR risk adjustment model, when an individual has an encounter with the healthcare system and is coded with a primary diagnosis code, that code is then mapped to a CCSR category, and a risk score is assigned for that encounter. For a given experience period, all the risk scores for a given individual are added up to produce an overall risk score for that individual's health for that period. Risk scores are only counted once within a given category.
  - For the SegalRx risk adjustment model, when an individual has a drug prescription filled, the National Drug Code (NDC) for that drug is mapped to a SegalRx category and severity level, and a risk score is assigned for that fill. Similar to the CCSR model, all risk scores for that individual during the experience period are added up to provide an overall risk score for that individual. Risk scores are only counted once within a given condition based on the highest severity level.
- Risk scores are shown relative to 2017 for both medical and prescription drugs in order to make it easier to understand morbidity changes over time. Relative risk scores can be read as follows:
  - A risk score of 1.131 in 2023 means that population morbidity has increased by 13.1% since 2017. Said another way, costs are expected to be 13.1% higher in 2023 compared to 2017 before taking into account medical cost inflation.
- It's possible for risk scores to decrease and costs to increase. Risk scores reflect relative morbidity within a population. For example, if overall medical inflation increases by 7% but population morbidity decreases by 3%, costs may still increase by 4%. Additionally, a risk score is just an estimate of healthcare resource utilization. There was a large increase in medical risk scores between 2022 and 2023. However, this was driven in part by members seeking treatment for obesity, likely to gain access to new weight-loss drugs. Although these members received the obesity risk score, there were very few medical costs associated with the majority of these members.

Key Findings

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Section	Key Findings	Recommendations
Medical & Rx Trend Summary (pgs. 15-17)	• Medical trend was 6.7% in 2023 and slightly above Segal's benchmark trend rate. • Prescription drug trend was 17.9% in 2023 and has consistently been higher than Segal's benchmark trend rate.	• Continue to monitor medical trend and evaluate once Aetna has been in place for 12 full months. • Continue to monitor both gross drug trends and prescription drug rebates.
Emerging Trends (pgs. 18-19)	• The top three cost drivers on the medical side are all mental health-related. (neurodevelopmental, anxiety, and trauma) • The top two cost drivers on the pharmacy side are due to GLP-1 medications used to treat diabetes and obesity. However, the Plan removed coverage for anti-obesity GLP-1s in 2024.	• Continue to monitor emerging trend drivers to identify potential intervention strategies, particularly for mental health and cancer. Communication to members about high-quality providers – especially for diagnoses like anxiety and trauma – can reduce the overall cost of these conditions. • Continue to monitor prescription drug trend drivers, particularly as GLP-1 drugs and drugs like Dupixent have expanded disease indications, and continue to aggressively manage the PBM contract, including periodic PBM market checks, to ensure competitive pricing and maximized rebates.

Key Findings

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Section	Key Findings	Recommendations
Population Risk Review (pgs. 20-26)	• Members with multiple chronic conditions (i.e., comorbidities) is both the largest risk group (40% of members) and fastest growing. • The chronic, comorbidities, and malignancies risk groups are the major drivers of both medical and Rx costs. • Non-utilizing members experienced the largest increase in counts year-over-year.	• The Plan should focus on addressing the leading chronic conditions that lead to development of multiple comorbidities: hypertension, hyperlipidemia, and diabetes. • Review non-utilizing members to see what may be driving increases observed and if members are skipping important preventive care.
Chronic Conditions (pgs. 27-30)	• The majority of the main chronic conditions are lifestyle driven and may be mitigated by modifiable risk factors. • 82% of medical expenses and 85% of prescription drug expenses were due to members with one or more of the eight main chronic conditions[1]. • Diabetes is the main chronic condition driving prevalence, medical costs, and prescription drug costs.	• Review availability and appropriateness of disease management programs through Aetna. • Consider implementing a point solution for diabetes and/or hypertension and developing a comprehensive wellness program that incentivizes healthy activities and nutrition. • Add chronic condition-specific communications to website, including testimonials from employees on how they are staying healthy, recipes (e.g., keto-friendly recipes for diabetics), and other wellness information (e.g., important benefits of exercise and spending time outdoors).

[1] Asthma, CAD, CHF, COPD, diabetes, hypertension, mental health, and substance use disorder.

Key Findings

Section	Key Findings	Recommendations
Cancer (pgs. 31-36)	• Cancer rates are increasing in the Plan and affect about 1.9% of membership. Cancer rates have consistently been about 0.3% higher than the benchmark. • About 25% of all cancer cases are for cancers with preventive screening guidelines, the most prevalent ones being breast and prostate.	• Increasing awareness and providing comprehensive information about the availability and importance of cancer screenings is key to improving compliance rates. • Consider best practice strategies to aid in cancer-prevention education, screening, accurate diagnosis, treatment and support. This can include enhancements with the existing vendor and addition of a cancer care point solution. Aim to improve early detection of cancers, provide second opinions, access to treatment through centers of excellence (COE), treatment guidance, specialized nutritional counseling, and support of virtual and in-home care. • Review cancer care strategies available through Aetna. • Consider offering financial incentives (e.g., gift card, premium discount) to employees who complete all recommended screenings.

Key Findings

Section	Key Findings	Recommendations
Catastrophic Risk Group (pgs. 37-40)	• The catastrophic risk group has grown the fastest historically at 6.8% per year. • Almost 70% of catastrophic members have early intervention opportunities available that may mitigate future catastrophic risk.	• Intervention strategies used to prevent HCCs in individuals with chronic conditions often involve promoting maintenance and preventive care, medication adherence, lifestyle modifications, care coordination, and health education. • Disease management programs that aim to address the main chronic conditions should take a holistic approach to managing members' health as opposed to treating the condition in a silo, including integrating management of mental health conditions. • Discuss with Aetna how high-risk members are identified and managed and consider implementing clinical high-cost claim reviews. These reviews involve in-depth assessments of high-cost claims to identify opportunities to improve care management interventions and coordination of care.

Key Findings

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Section	Key Findings	Recommendations
Diabetes, Cardiovascular Disease, and Obesity (pgs. 41-52)	• Diabetes prevalence increased from 8.9% of the population in 2019 to 11.4% in 2023. 23% of medical expenses and 37% of prescription drug expenses were due to diabetics in 2023. • Diabetics are a main driver of medical and prescription drug trends and are expected to be an important population to manage for the foreseeable future. • Ozempic and Trulicity saw members having medication supplies on-hand of up to 4 times more than potentially needed within the first 2 – 4 weeks of therapy. • Experience through 2023 indicates that there is limited evidence that use of GLP-1 medications results in material improvements on the medical side. However, it may take several years for benefits to manifest and should be monitored periodically.	• Consider adding a point solution that specializes in diabetes management and/or health coaching. Coaches can work one-on-one with members to help them learn more about their condition and how to manage it. • Consider adding digital tools that allow for syncing of personal fitness devices. Members using such tools can join group challenges and explore virtual courses that make managing the condition more engaging for members. • Monitor diabetic GLP-1 spend and utilizers as anti-obesity (AOM) users may shift to diabetic GLP-1s. The Plan should also validate utilization management criteria is functioning to meet its intended goals. • Consider implementing a quantity limit on the first fill and then, a reauthorization criteria for diabetic GLP-1 medications to confirm a positive response to current therapy and/or continued need.

Key Findings

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Section	Key Findings	Recommendations
Diabetes, Cardiovascular Disease, and Obesity (pgs. 41-52)	• Obesity prevalence increased from 30.9% of the population in 2019 to 33.6% in 2023. However, it is likely that prevalence in the population is much greater due to some members not seeking treatment and thus not being identified. • AOM GLP-1 costs nearly equaled that for diabetes in 2023. • Improved AOM GLP-1 persistence and multiple initial prescriptions for new users drove higher sustained costs. • $50.1M (28.7%) of AOM GLP-1 cost was due to with members who may be diabetic • Major adverse cardiovascular event. (MACE) rates (heart attack and stroke) are 15 times higher in ASCVD members with 10+ comorbidities. • The number of members utilizing bariatric surgery decreased from 754 in 2022 to 606 in 2023, likely due to the increased availability of AOM drugs.	• Assess and reevaluate current obesity treatments under the medical benefit and customized programs that includes a range of options for weight loss (e.g., lifestyle weight loss program, bariatric surgery). • Additional studies are underway for diabetic GLP-1s and cardiovascular risk reduction which could reduce MACE rates, disease management programs could ensure high-risk members receive these medications, if appropriate. • GLP-1s are appealing as weight loss medications. However, since the Plan no longer covers this disease indication alone, off-label usage should be closely monitored and prior authorization requirements adjusted if needed. • Consider offering resources and/or discounts to weight-loss and nutritional programs • Monitoring bariatric surgery utilization, cost and quality now that GLP-1s are no longer covered.

Key Findings

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Section	Key Findings	Recommendations
Mental Health (pgs. 53-55)	• Mental health treatment has been a major trend driver for the Plan during the last several years, partly due to increased access to treatment as a result of the pandemic. • Prior to the pandemic in 2019, 21.2% of members had a mental health-related encounter versus 28% of members in 2023, representing a 32% increase. • Mental health costs have increase at an annualized rate of 24%, driven primarily by neurodevelopmental, anxiety, and trauma disorders.	• Prioritizing education and the importance of mental health ensures members feel valued and supported. • Offering clinical navigation services can help ensure members get the right care from the start, reducing unnecessary tests and visits. Navigation services should be able to identify highest-quality providers to reduce the number of counseling sessions used. • The Clear Pricing Project (CPP) should be improving access for members by removing financial barriers and providing in-network care. Review network utilization as the Plan transitions to Aetna as the CPP provider landscape will be changing, and clearly communicate to members about the availability of no-copay Headway providers through this tool. • Ensure that the Aetna network strategy has adequate coverage for mental health and is accessible to members.

Key Findings

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Section	Key Findings	Recommendations
Tobacco, Ashma, COPD, and Respiratory Cancer (pgs. 56-58)	• Tobacco use is one of the more significant cost drivers that is also a modifiable risk factor. Tobacco use can lead to several health complications, including COPD and respiratory cancers. • The Plan is one of 11 states that has a tobacco cessation program in place. The incentive for abstaining from for tobacco use is $60 per month, which is the second highest incentive of the 11 states. • The results of the 2023 attestations are: – 5,658 members attested to being tobacco users and also had recent tobacco-related medical claims. These members cost $1,712 PMPM. – 16,227 members attested to not being a tobacco user but had recent tobacco-related medical claims. These members cost $1,490 PMPM. – 65,756 members attested to being a tobacco user but did not have recent tobacco-related medical claims. These members cost $716 PMPM. – 514,103 members attested to not being a tobacco user and did not have any recent tobacco-related medical claims. These members cost $762 PMPM.	• The tobacco cessation program appears to mostly be penalizing members for not filling out the attestation and thus defaulting to being a user. The majority of those attesting to being a user (65,756), did not have any tobacco-related claims and had medical and prescription drug costs that were similar to non-users, suggesting that they do not actually use tobacco. Review the process for filling out the attestation and monitor the results for improvements moving forward. • The $60 incentive is high compared to what other state health plans are doing. Consider lowering the tobacco cessation incentive and adding a wellness incentive. • Respiratory cancer screening compliance appears low. Consider providing communications and/or adding screening requirements alongside the tobacco cessation program to ensure members understand who should be screened and when.

Key Findings

Section	Key Findings	Recommendations
Wilmington Health Pilot (pgs. 59-64)	• The Wilmington Health Pilot was put in place to increase PCP engagement and the quality of care members receive through their PCP. • Based on experience through 2023, utilization of evaluation and management services is high, but there has not been much change for the Wilmington Area than before program implementation. • Risk-adjusted medical costs are lower for Wilmington than the other regions, suggesting this area is managed more efficiently. Risk-adjusted prescription drug costs are slightly higher for Wilmington, although it has improved since the pilot program began. • The Wilmington area has fewer emergency room visits, more preventive visits, and more well-woman visits than the other regions, all positive signs for the pilot program. • The pilot program also aims to improve A1c testing compliance for diabetics. A1c testing compliance was similar in Wilmington prior to program implementation but now is about 3% higher for Wilmington than the other regions.	• The Wilmington Health Pilot is too young to make any firm conclusions at this time. Continue monitoring experience, especially PCP utilization, ER utilization, preventive care utilization, A1c testing compliance, and preventive cancer screening compliance.

Key Findings

Section	Key Findings	Recommendations
Biosimilar Drugs (pgs. 65-67)	• Biologics (originators and biosimilars) account for approximately 35% of plan spend on prescription drugs. • The Plan spent over $130 million on Humira alone in 2023, prior to rebates. • Biosimilar medications are beginning to enter the market, including biosimilars for Humira, which should provide savings opportunities in the coming years.	• As more biosimilars enter the market and the savings opportunity grows, the Plan should consider strategies to incentivize biosimilar utilization. Potential opportunities include: – A tiered plan design that offers lower member costs when taking biosimilars – Updated formularies that include biosimilars as the preferred option – Utilize prior authorization that directs providers and members towards biosimilars if available and appropriate – Implement step therapy so members start with lower-cost biosimilars before becoming eligible for more expensive originator biologics.

Medical & Rx Trend Summary

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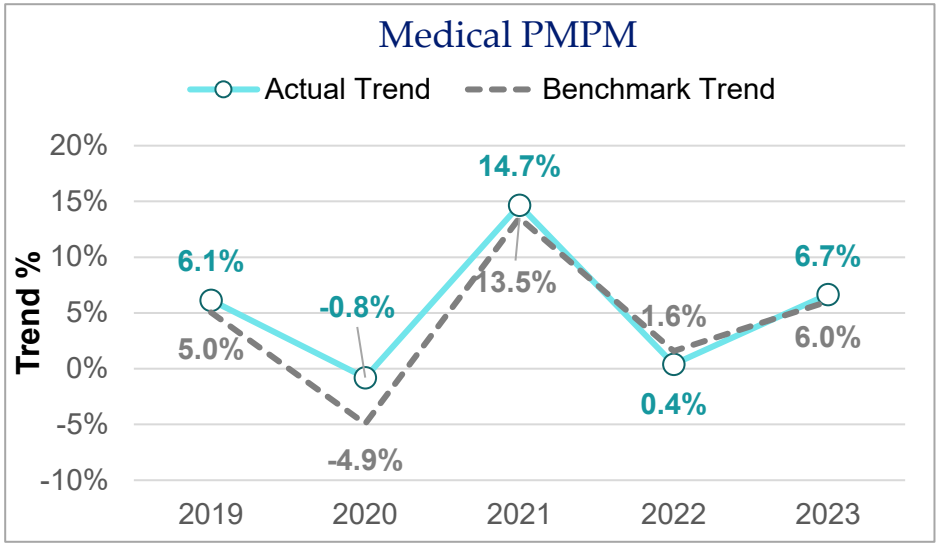
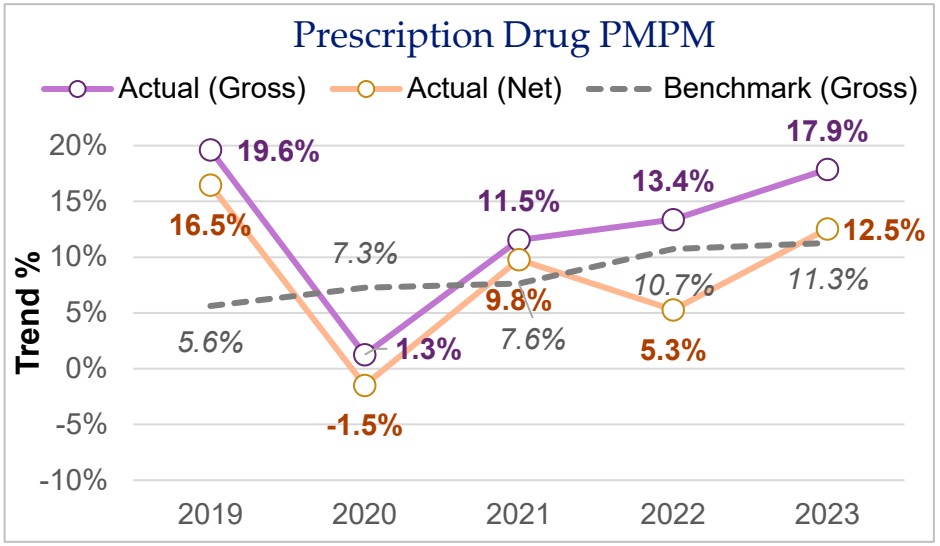
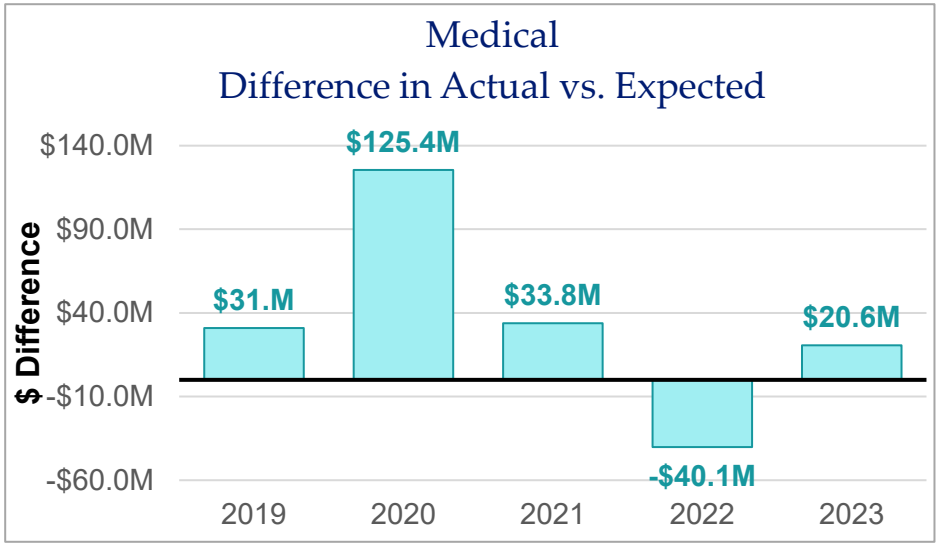


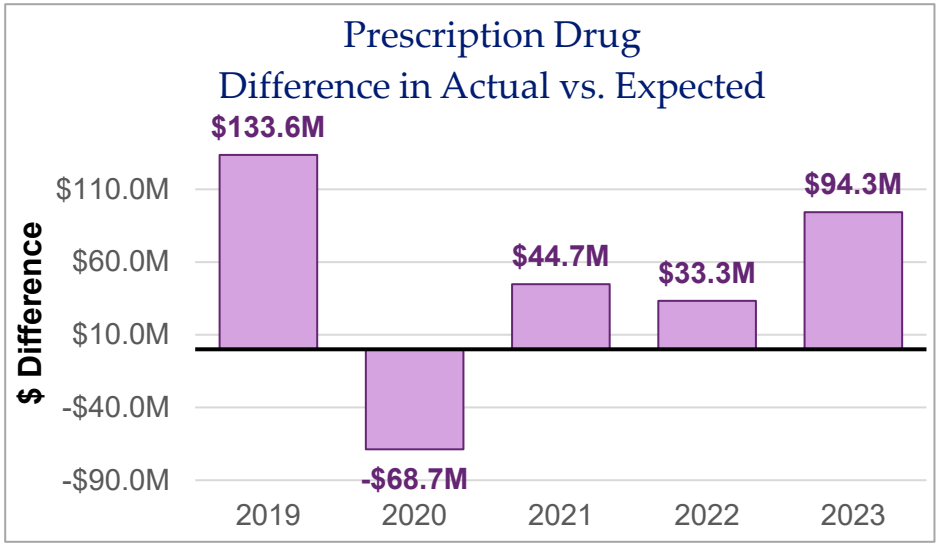


Observations

- The table above summarizes year-over-year (YoY) medical and prescription drug per member per month (PMPM) trends.
  - Trends are based on allowed amounts, which include both the plan paid and member paid amounts.
  - Prescription drug trend is shown on a gross and net (i.e., including rebates) basis.
- Benchmark trend represents the trend from Segal's SHAPE book-of-business. Benchmark trend for prescription drugs is gross of rebates.
- Overall, the Plan is doing well at managing medical expenses. Medical trend for the plan has been slightly higher than the benchmark since 2020.
- The Plan has experienced higher prescription drug trend than the benchmark in every year since 2020. In 2023, prescription drug trend was over 6% higher than the benchmark. However, once rebates are factored in, prescription drug trend in 2023 decreases from 17.9% to 12.5%.

Medical & Rx Trend Summary



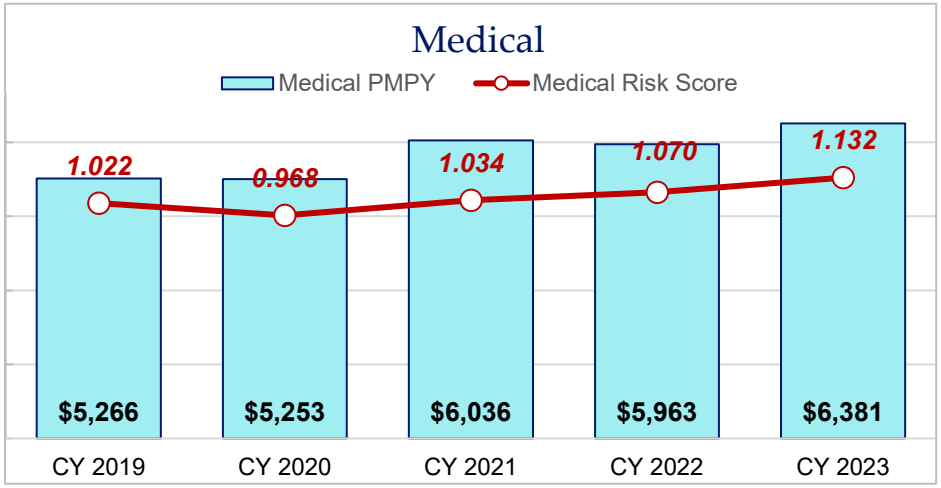


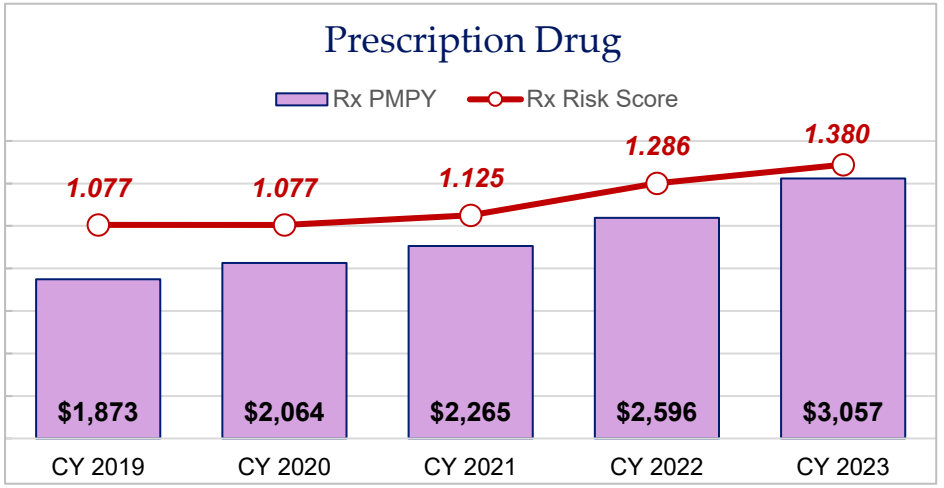
Observations

- The tables above quantifies the difference between actual versus expected trends paid by the Plan.
  - Expected trends were determined based on Segal's SHAPE benchmark plan paid trends for public sector groups (shown on the previous slide).
- On the medical side, the Plan has paid approximately $170.7 million more than expected during the last five years.
- On the prescription drug side, the Plan has paid approximately $237.2 million more than expected during the last five years. Note that this figure is on a gross basis as we are unable to procure a benchmark that includes rebates for all public sector clients.

Medical & Rx Trend Summary

Cost and Risk





Observations

- Risk scores for both medical and prescription drug were flat or decreasing during 2020 but have increased every year since then.
  - Medical risk scores decreased as members avoided the doctor during the pandemic and thus received fewer diagnoses than typical.
- Medical risk scores have steadily increased since 2020 and have been driven by diabetes, obesity and mental health disorders (e.g., anxiety, depression).
- Prescription drug risk scores increased significantly between 2021 and 2022 and were driven by medications used to treat diabetes, autoimmune diseases, and obesity. Diabetes and obesity management medications were also the primary driver of costs between 2022 and 2023.
- Summaries of cost and risk by subgroup (e.g., North Carolina Public Schools, Department of Corrections) and by region (e.g., Wilmington Area, Charlotte Area) are provided in the appendices.

Emerging Trends
Cost Trend Drivers

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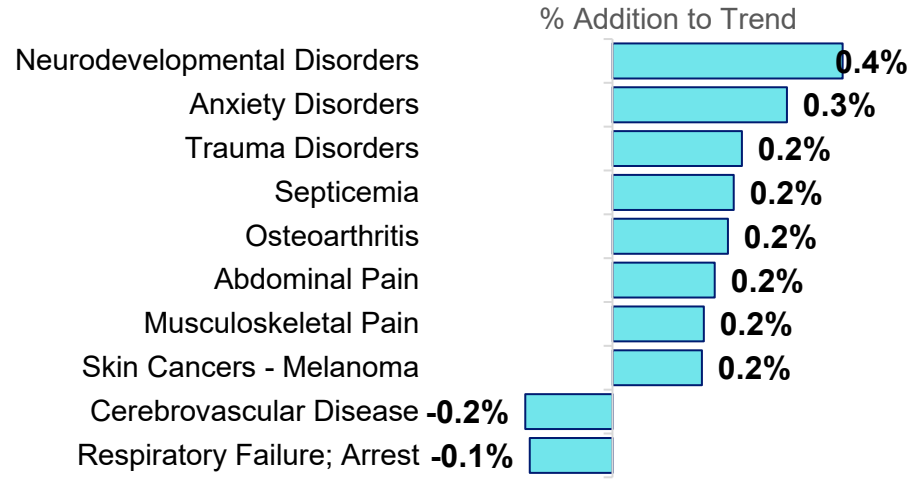
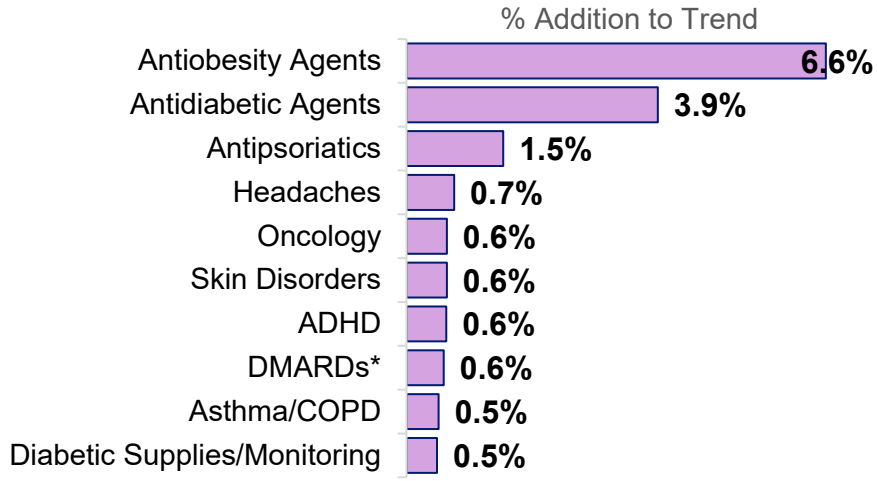
Medical



Prescription Drug



Observations

- One of the main factors driving YOY medical costs have been mental health conditions, including neurodevelopmental disorders (e.g., autism), anxiety disorders, and trauma disorders.
  - Costs for neurodevelopmental disorders increased 46% and alone added 0.4% to trend. Said another way, absent the increase in costs for neurodevelopmental disorder between 2022 and 2023, medical trend would have been 6.3% as opposed to 6.7%.
  - Medical trend has been offset by lower costs for cerebrovascular disease (i.e., strokes) and respiratory failure/arrest. Both strokes and respiratory failure are common complications of unmanaged chronic conditions.
- YoY prescription drug costs have been driven higher mostly due to drugs used to treat diabetes and obesity.
  - Although costs for anti-obesity agents increased 118% and added 6.6% to prescription drug trends in 2023, coverage for these medications has been removed from the Plan and this disease class is not expected to drive trend in the future. However, it is expected that members will transition treatment to the antidiabetic versions of these drugs if eligible, which will increase trend further in that class.

* DMARDs = Disease Modifying Antirheumatic Drugs

Emerging Trends
Prevalence Trend Drivers

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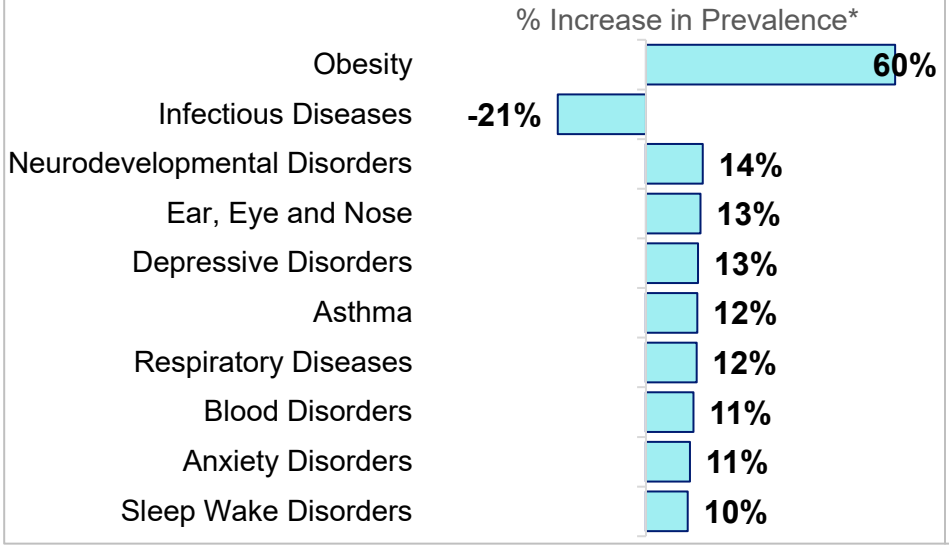
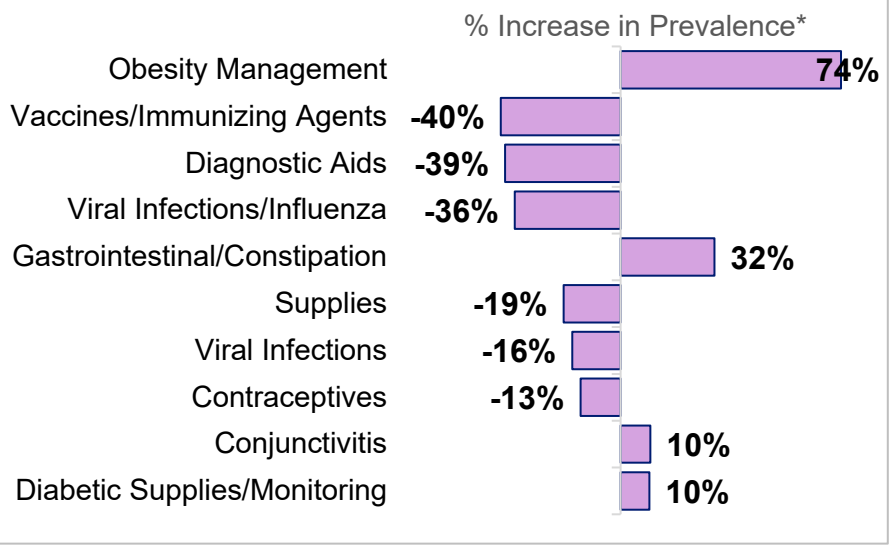
Medical



Prescription Drug



Observations

- 60% more members sought medical treatment for obesity in 2023 versus 2022, likely due to members wanting to get access to new weight-loss medications.
  - Obesity has also been the primary prevalence driver on the pharmacy side with a 74% increase in utilization.
- Four of the top 10 prevalence drivers on the medical side are mental health related (i.e., neurodevelopmental disorders, depressive disorders, anxiety disorders, and sleep wake disorders).
- Along with the mental health conditions, spotlights are provided later in this report for obesity, asthma, and respiratory diseases. Note that obesity and sleep-wake disorders are common comorbidities with diabetes and are included in that section.

* Prevalence = % of members within a given category

Population Risk Review
Summary

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	CY 2023											
		% of Total		Medical			Prescription Drug			% Change from Prior		
Risk Group	Members	Members	Allowed	Allowed (millions)	PMPY	Risk Score	Allowed (millions)	PMPY	Risk Score	Members	Medical PMPY	Rx PMPY
Non-Utilizers	43,722	8.0%	0.0%	$0.0	$0	0.12	$0.0	$0	0.15	19.9%	0.0%	0.0%
Healthy	98,039	18.0%	3.5%	$110.3	$1,125	0.26	$71.4	$728	0.44	-15.4%	25.8%	32.6%
Minor Acute	46,532	8.5%	2.5%	$96.2	$2,068	0.66	$32.5	$699	0.47	-11.0%	-2.3%	3.9%
Major Acute	24,974	4.6%	3.8%	$165.9	$6,642	1.61	$28.9	$1,156	0.72	12.4%	-13.3%	3.5%
Single Chronic	104,782	19.2%	13.5%	$513.6	$4,902	1.09	$179.5	$1,713	0.97	0.0%	2.4%	5.9%
Chronic w/ Comorbidities	220,062	40.3%	63.2%	$2,002.6	$9,100	1.70	$1,250.5	$5,683	2.44	5.6%	3.5%	14.4%
Malignancies	6,026	1.1%	8.1%	$337.2	$55,954	2.47	$81.7	$13,565	3.12	3.9%	1.8%	5.2%
Catastrophic	1,272	0.2%	5.4%	$254.3	$199,863	9.87	$22.6	$17,781	5.59	13.0%	0.0%	18.3%
Total	**545,410**	**100.0%**	**100.0%**	**$3,480.1**	**$6,381**	**1.13**	**$1,667.2**	**$3,057**	**1.38**	**-0.3%**	**7.0%**	**17.7%**

Observations

The table above groups members into 8 mutually exclusive risk groups[1].

- Healthy members represented 18% of the population and 3.5% of all medical and drug allowed charges during 2023. The number of healthy members decreased 15.4% from the prior period.
- The largest group by size and cost were members with multiple chronic conditions (i.e., Comorbidities). Chronic members w/ comorbidities represented 40.3% of the population and 63.2% of allowed charges.
- The number of catastrophic members increased by 13.0% year-over-year, the second largest increase of all the risk groups, behind only non-utilizers.
- The number of members with malignancies increased by 3.9% during 2023. This cohort has the second highest healthcare costs of all risk groups.

[1] See Appendices for more detailed definitions and examples for each of the risk groups.

Population Risk Review

Annual/Historical Membership

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	Member Count					% Change	
Risk Group	**CY 2019**	**CY 2020**	**CY 2021**	**CY 2022**	**CY 2023**	**YoY**	**Historical[1]**
Non-Utilizers	39,170	37,004	28,972	36,470	43,722	19.9%	2.8%
Healthy	124,094	141,963	131,459	115,858	98,039	-15.4%	-5.7%
Minor Acute	61,956	55,683	56,484	52,277	46,532	-11.0%	-6.9%
Major Acute	28,005	20,023	22,137	22,221	24,974	12.4%	-2.8%
Single Chronic	103,228	99,541	104,332	104,806	104,782	0.0%	0.4%
Chronic w/ Comorbidities	187,382	190,714	197,639	208,456	220,062	5.6%	4.1%
Malignancies	6,021	6,164	5,738	5,798	6,026	3.9%	0.0%
Catastrophic	977	939	1,026	1,126	1,272	13.0%	6.8%
Total	**550,834**	**552,031**	**547,787**	**547,011**	**545,410**	**-0.3%**	**-0.2%**
Non-Utilizers%	7.1%	6.7%	5.3%	6.7%	8.0%	20.2%	3.0%
Healthy %	22.5%	25.7%	24.0%	21.2%	18.0%	-15.1%	-5.5%
Acute %	16.3%	13.7%	14.4%	13.6%	13.1%	-3.7%	-5.3%
Chronic %	52.8%	52.6%	55.1%	57.3%	59.6%	4.0%	3.1%
Catastrophic / Malignancy	1.3%	1.3%	1.2%	1.3%	1.3%	5.7%	1.3%

Observations

The table above summarizes trends in membership among the eight risk groups.

- Catastrophic is the fastest growing group with a historical trend rate of 6.8%.
- The second fastest growing group is members with multiple chronic conditions with a historical trend rate of 4.1%.
- The number of non-utilizers continues to grow with a YoY increase of 19.9% and a historical trend rate of 2.8%.
- As more members develop chronic conditions, both the healthy and acute risk groups continue to shrink in size.

[1] Historical % change reflects the average annual trend between CY 2019 and CY 2023.

Population Risk Review

Medical Cost PMPY by Risk Group

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
A Division of the Department of State Treasurer

	Medical Claims PMPY					% Change	
Risk Group	**CY 2019**	**CY 2020**	**CY 2021**	**CY 2022**	**CY 2023**	**YoY**	**Historical[1]**
Healthy	$609	$640	$707	$894	$1,125	25.8%	16.6%
Minor Acute	$1,852	$1,991	$2,116	$2,117	$2,068	-2.3%	2.8%
Major Acute	$6,620	$7,957	$8,227	$7,658	$6,642	-13.3%	0.1%
Single Chronic	$4,289	$4,441	$4,843	$4,785	$4,902	2.4%	3.4%
Chronic w/ Comorbidities	$8,410	$8,322	$9,338	$8,791	$9,100	3.5%	2.0%
Malignancies	$48,648	$48,294	$54,717	$54,946	$55,954	1.8%	3.6%
Catastrophic	$218,708	$225,666	$240,997	$199,915	$199,863	0.0%	-2.2%
Total	**$5,266**	**$5,253**	**$6,036**	**$5,963**	**$6,381**	**7.0%**	**4.9%**

Observations

- Historical medical trend throughout the last five years is 4.9% and has been in-line with Segal's benchmark trend rate since 2020.
- The healthy cohort had the highest YoY and historical increases in medical costs. However, costs for this group are low and a small increase in utilization can lead to a large increase in costs.
- Aside from the healthy cohort, members with malignancies have the highest historical trend rate and the second highest overall cost. As cancer becomes more prevalent and more expensive treatments come to the market, this group will be especially important to manage in the coming years. See focus area on cancer for more information.

[1] Historical % change reflects the average annual trend between CY 2019 and CY 2023.

Population Risk Review

Prescription Drug Cost PMPY by Risk Group

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
A Division of the Department of State Treasurer

	Prescription Drug Claims PMPY					% Change	
Risk Group	**CY 2019**	**CY 2020**	**CY 2021**	**CY 2022**	**CY 2023**	**YoY**	**Historical[1]**
Healthy	$396	$449	$408	$549	$728	32.6%	16.5%
Minor Acute	$502	$576	$612	$673	$699	3.9%	8.7%
Major Acute	$899	$1,153	$1,180	$1,117	$1,156	3.5%	6.5%
Single Chronic	$1,430	$1,518	$1,510	$1,617	$1,713	5.9%	4.6%
Chronic w/ Comorbidities	$3,788	$4,163	$4,503	$4,967	$5,683	14.4%	10.7%
Malignancies	$9,158	$9,827	$11,129	$12,888	$13,565	5.2%	10.3%
Catastrophic	$14,141	$15,886	$14,340	$15,030	$17,781	18.3%	5.9%
Total	**$1,873**	**$2,064**	**$2,265**	**$2,596**	**$3,057**	**17.7%**	**13.0%**

Observations

- Historical prescription drug trend throughout the last four years is 13% and has been higher than the benchmark trend rate since 2020.
- Rebates are not reflected in the gross trend shown on this page. Net trend has been historically lower than gross trend by 2-5% due to improving rebates.
- Similar to medical costs, healthy members have the highest historical drug trend rate at 16.5%, followed by members with multiple chronic conditions (10.7%).
- Members with malignancies are a main driver of both medical and prescription drug costs. Historical prescription drug trends for this cohort were 10.3%, the third highest of all groups.

[1] Historical % change reflects the average annual trend between CY 2019 and CY 2023.

Population Risk Review

Trends in Membership and Risk (Historical)

North Carolina State Health Plan
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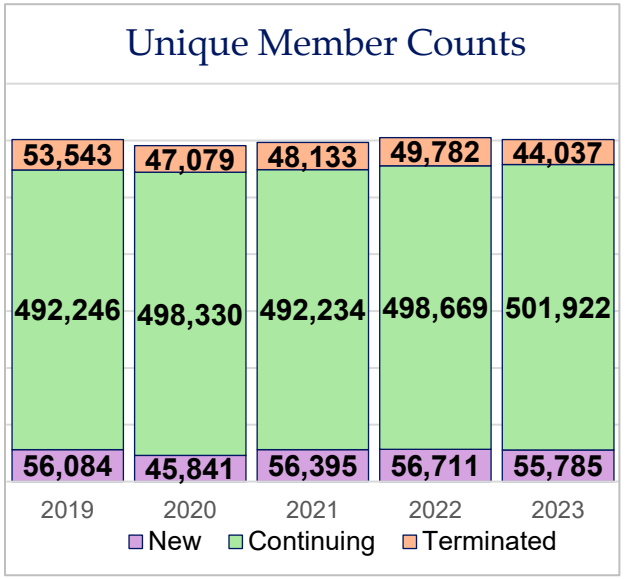

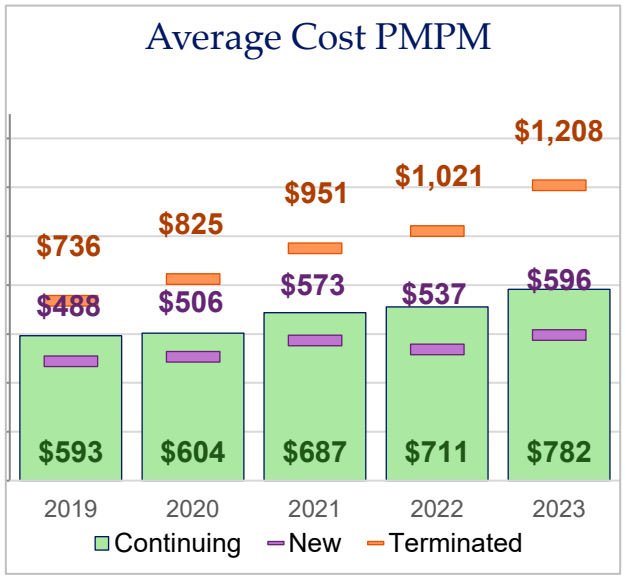

Observations

- Approximately 55k members join the Plan each year, 45k-50k leave the Plan, and 500k continue coverage.
  - Unlike other areas of this report, member counts are counts of unique individuals as opposed to average monthly member counts.
  - Definitions of each of the three transition groups (i.e., new, continuing, terminating) can be found in the Appendices.
- New members had approximately 25% lower costs than the average member in 2022 and 2023, versus about 17% lower costs in 2019 – 2021.
- Terminating members continue to get more expensive relative to the average member. In 2019, terminating members were 24% more expensive than average versus 54% more expensive than average in 2023.

Population Risk Review

Membership Migration (YoY)

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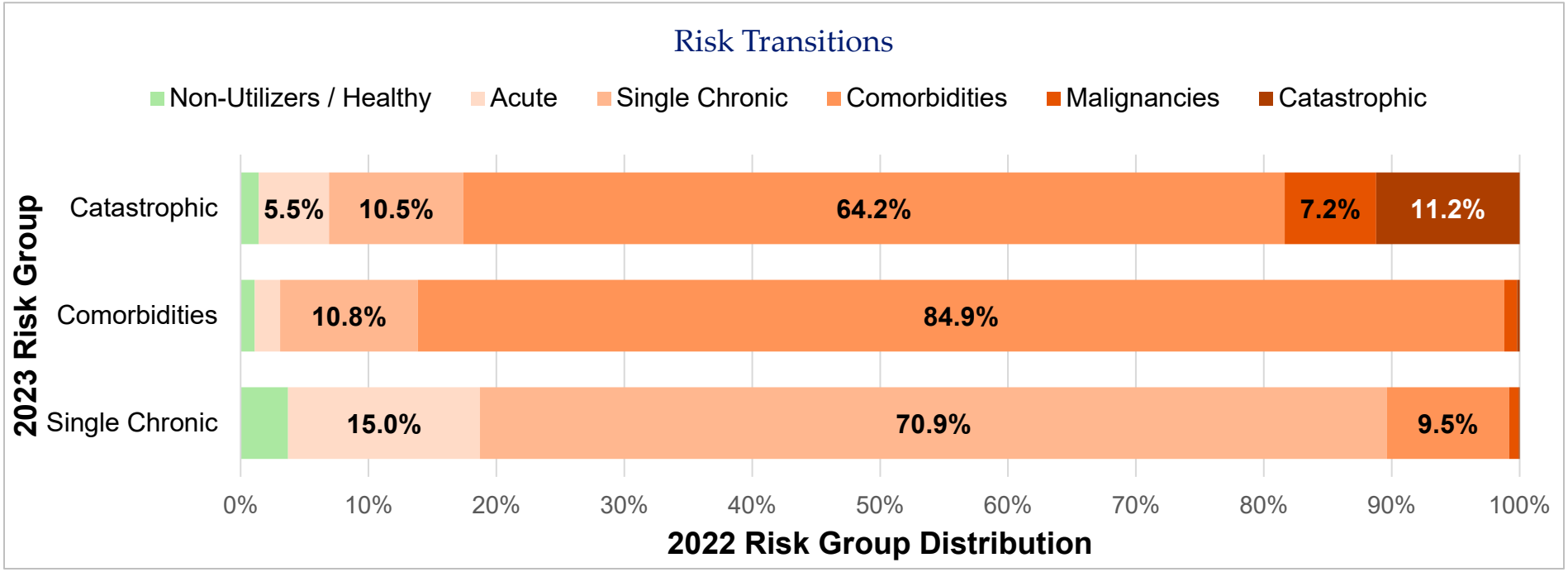

Observations

The table above shows the risk group distribution in 2022 for members who were either chronic, chronic w/ comorbidities, or catastrophic in 2023.

- For members that were catastrophic in 2023, 3.7% were healthy or did not use benefits (i.e., non-utilizers) in 2022, 5.5% had an acute encounter, 10.5% has a single chronic condition, 64.2% had multiple chronic conditions, 7.2% had malignancies, and 11.2% were also catastrophic that year.
- For members with multiple chronic conditions in 2023, 10.8% had a single chronic condition in 2022 and 1.1% were either health or did not use benefits.
- For members that developed a single chronic condition in 2023,1.4% were either health or did not use benefits in 2022.

Population Risk Review

Risk Projection

North Carolina State Health Plan
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	CY 2023		Projected to CY 2028			Projected to CY 2033		
Risk Group	**Members**	**% of Total**	**Members**	**% of Total**	**Member Movement**	**Members**	**% of Total**	**Member Movement**
1. Healthy / Non-Utilizers	141,762	26.0%	149,209	27.4%	7,447	148,840	27.3%	7,078
2. Minor Acute	46,532	8.5%	45,121	8.3%	(1,411)	44,956	8.2%	(1,576)
3. Major Acute	24,974	4.6%	19,163	3.5%	(5,811)	19,094	3.5%	(5,880)
4. Single Chronic	104,782	19.2%	96,644	17.7%	(8,138)	96,251	17.6%	(8,531)
5. Chronic w/ Comorbidities	220,062	40.3%	227,768	41.8%	7,706	228,748	41.9%	8,686
6. Malignancies	6,026	1.1%	6,213	1.1%	187	6,224	1.1%	198
7. Catastrophic	1,272	0.2%	1,291	0.2%	19	1,296	0.2%	24
Total Members	**545,410**	**100.0%**	**545,410**	**100.0%**	**-**	**545,410**	**100.0%**	**-**
Healthy / Non-Utilizers	141,762	26.0%	149,209	27.4%	7,447	148,840	27.3%	7,078
Acute	71,506	13.1%	64,283	11.8%	(7,223)	64,051	11.7%	(7,455)
Chronic	324,844	59.6%	324,413	59.5%	(431)	324,999	59.6%	155
Catastrophic / Malignancy	7,298	1.3%	7,505	1.4%	207	7,520	1.4%	222

Observations

This page provides projections for each of the mutually exclusive risk groups through 2033.

- The chronic conditions and malignancies cohorts are expected to grow throughout the next ten years.
- The healthy / non-utilizers cohort is expected to grow the most by 2033, mostly due to a recent large increase in non-utilizers.

The projections shown here are estimates of future experience and are based on information available to Segal at the time the projections were made. Projections are not a guarantee of future results. Actual experience may differ due to, but not limited to, such variables as changes in the regulatory environment, local market pressure, and health trend rates and claims volatility. The accuracy and reliability of health projections decrease as the projection period increases.

Chronic Conditions

Member Count

North Carolina State Health Plan
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	CY 2020		CY 2021		CY 2022		CY 2023			% Change	
Chronic Condition[1]	**Members**	**% of Total**	**Members**	**% of Total**	**Members**	**% of Total**	**Members**	**% of Total**	**Norm[2]**	**YoY**	**Historical[3]**
Diabetes[4]	50,086	9.1%	51,330	9.4%	57,291	10.5%	61,997	11.4%	8.1%	8.2%	6.0%
Coronary Artery Disease	12,126	2.2%	11,947	2.2%	13,141	2.4%	14,233	2.6%	2.6%	8.3%	3.2%
Asthma	13,906	2.5%	13,312	2.4%	14,686	2.7%	15,783	2.9%	2.9%	7.5%	2.1%
Chronic Obstructive Pulmonary Disease	3,540	0.6%	3,045	0.6%	2,933	0.5%	3,230	0.6%	0.6%	10.2%	-3.7%
Hypertension	137,122	24.8%	135,194	24.7%	138,663	25.3%	140,578	25.8%	21.8%	1.4%	0.9%
Mental Health	189,286	34.3%	201,844	36.8%	215,018	39.3%	228,411	41.9%	34.4%	6.2%	6.7%
Substance Use Disorder[5]	20,686	3.7%	20,162	3.7%	19,399	3.5%	20,535	3.8%	2.5%	5.9%	1.8%
Congestive Heart Failure	2,267	0.4%	2,301	0.4%	2,491	0.5%	2,632	0.5%	0.4%	5.7%	3.5%
Total (Unique)	**282,386**	**51.2%**	**288,732**	**52.7%**	**301,439**	**55.1%**	**311,928**	**57.2%**		**3.5%**	**3.5%**
All Members (Non-Medicare)	**552,030**		**547,787**		**547,010**		**545,409**			**-0.3%**	**-0.2%**

Observations

The table above shows top chronic conditions within the population. The categories are not mutually exclusive, meaning that a member with comorbidities is shown in each line corresponding to their conditions.

- 57.2% of the population had one or more of the eight chronic conditions listed above, up from 51.2% in 2020.
- Mental health is the most prevalent condition affecting 41.9% of the population.
- Aside from mental health, diabetes prevalence has increased the most over the experience period. The Plan has been experiencing an increase in diabetes prevalence of about 6% per year.
- Chronic Obstructive Pulmonary Disease (COPD) experienced the largest YoY increase in prevalence but is the only condition to experience a decrease in prevalence over the experience period. As smoking rates come down in the general population, the State should continue to track this metric to ensure it decreases accordingly.

[1] Members with co-morbidities are shown in each applicable category.
[2] Norms are from Segal's SHAPE data warehouse for public sector non-Medicare members adjusted for age and gender.
[3] Historical % change reflects the average annual trend between CY 2019 (results not illustrated in table) and CY 2023.
[4] Diabetes included both Type I (~7% of total) and Type II diabetics (~93% of total).
[5] Substance Use Disorder (SUD) includes drug abuse and alcohol related disorders but excludes tobacco-related disorders.

Chronic Conditions

Total Allowed

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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	Medical Allowed[2]				Rx Allowed[2]				Total Allowed[2]				% Change	
Chronic Condition[1]	CY 2020	CY 2021	CY 2022	CY 2023	CY 2020	CY 2021	CY 2022	CY 2023	CY 2020	CY 2021	CY 2022	CY 2023	YoY	Historical[3]
Diabetes[4]	$589.6	$683.2	$704.7	$799.0	$365.1	$412.0	$496.9	$608.8	$954.8	$1,095.3	$1,201.6	$1,407.8	17.2%	11.8%
CAD	$299.2	$325.9	$337.6	$391.7	$80.4	$86.0	$103.5	$125.5	$379.6	$411.9	$441.1	$517.2	17.2%	6.2%
Asthma	$196.7	$212.4	$217.8	$239.6	$69.6	$75.0	$91.1	$117.1	$266.3	$287.4	$308.9	$356.7	15.5%	6.9%
COPD	$76.3	$77.7	$71.1	$79.0	$27.3	$24.5	$28.9	$33.3	$103.6	$102.2	$100.0	$112.4	12.4%	-0.6%
Hypertension	$1,392.4	$1,552.6	$1,519.2	$1,649.2	$592.4	$650.5	$741.5	$870.7	$1,984.8	$2,203.1	$2,260.7	$2,519.8	11.5%	6.8%
Mental Health	$1,576.6	$1,861.7	$1,942.8	$2,174.0	$592.2	$673.5	$801.5	$996.9	$2,168.7	$2,535.3	$2,744.4	$3,170.9	15.5%	11.9%
SUD[5]	$289.0	$298.0	$309.2	$341.8	$85.0	$89.4	$98.7	$117.0	$374.1	$387.4	$407.9	$458.8	12.5%	5.5%
CHF	$123.2	$135.4	$126.0	$137.4	$24.2	$23.9	$27.7	$34.8	$147.4	$159.3	$153.7	$172.2	12.0%	3.4%
Total (Unique)	**$2,265.1**	**$2,595.6**	**$2,603.7**	**$2,836.4**	**$927.1**	**$1,021.6**	**$1,181.1**	**$1,413.7**	**$3,192.3**	**$3,617.2**	**$3,784.8**	**$4,250.1**	**12.3%**	**8.6%**
All Members	**$2,899.9**	**$3,306.7**	**$3,262.0**	**$3,480.1**	**$1,139.3**	**$1,240.5**	**$1,420.1**	**$1,667.2**	**$4,039.2**	**$4,547.1**	**$4,682.1**	**$5,147.3**	**9.9%**	**6.2%**

Observations

The table above shows allowed charges for members in each of the top chronic conditions within the population. The categories are not mutually exclusive, meaning that claims for members with comorbidities are shown in each line corresponding to their conditions.

- 82% of medical expenses and 85% of prescription drug expenses were due to members in one or more of the categories above in 2023.
  - The percent of expenses for the chronic conditions outlined here has increased in each of the historical years for both medical and prescription drugs.
- The increase in spend for these chronic conditions has mainly been driven by diabetes and mental health disorders. Diabetes had the highest YoY increase as well as the second highest historical increase in costs.

[1] Members with co-morbidities and their corresponding claims are combined in each applicable category.
[2] In millions
[3] Historical % change reflects the average annual trend between CY 2019 (results not illustrated in table) and CY 2023.
[4] Diabetes included both Type I (~7% of total) and Type II diabetics (~93% of total).
[5] Substance Use Disorder (SUD) includes drug abuse and alcohol related disorders but excludes tobacco-related disorders.[3]

Chronic Conditions

Allowed PMPY

North Carolina State Health Plan
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	Medical PMPY				Rx PMPY				Medical PMPY % Change		Rx PMPY % Change	
Chronic Condition[1]	CY 2020	CY 2021	CY 2022	CY 2023	CY 2020	CY 2021	CY 2022	CY 2023	YoY	Historical[2]	YoY	Historical[2]
Diabetes[3]	$11,772	$13,311	$12,301	$12,888	$7,290	$8,027	$8,673	$9,819	4.8%	2.3%	13.2%	10.8%
CAD	$24,672	$27,277	$25,690	$27,518	$6,629	$7,200	$7,876	$8,816	7.1%	1.3%	11.9%	9.0%
Asthma	$14,147	$15,954	$14,831	$15,179	$5,004	$5,637	$6,201	$7,420	2.3%	1.4%	19.7%	13.7%
COPD	$21,563	$25,512	$24,247	$24,462	$7,713	$8,057	$9,852	$10,322	0.9%	0.7%	4.8%	10.7%
Hypertension	$10,155	$11,484	$10,956	$11,731	$4,320	$4,811	$5,348	$6,194	7.1%	3.3%	15.8%	11.9%
Mental/Behavioral Health	$8,329	$9,224	$9,036	$9,518	$3,128	$3,337	$3,728	$4,364	5.3%	2.8%	17.1%	10.5%
Substance Use Disorder[4]	$13,971	$14,779	$15,937	$16,645	$4,111	$4,433	$5,087	$5,699	4.4%	1.8%	12.0%	10.2%
CHF	$54,347	$58,842	$50,605	$52,191	$10,663	$10,383	$11,112	$13,221	3.1%	-1.9%	19.0%	9.1%
Total (Unique)	**$8,021**	**$8,990**	**$8,638**	**$9,093**	**$3,283**	**$3,538**	**$3,918**	**$4,532**	**5.3%**	**2.7%**	**15.7%**	**10.5%**
All Members (Non-Medicare)	**$5,253**	**$6,036**	**$5,963**	**$6,381**	**$2,064**	**$2,265**	**$2,596**	**$3,057**	**7.0%**	**4.9%**	**17.7%**	**10.2%**

Observations

The table above shows medical and prescription drug allowed PMPY expenses for the top chronic conditions within the population. The categories are not mutually exclusive, meaning that a member with comorbidities is shown in each line corresponding to their conditions.

- Congestive Heart Failure (CHF) is the costliest chronic condition with a medical allowed PMPY cost of $52,191 in 2023.
- Throughout the last five years, members with hypertension have the highest medical trend at 3.3% per year and the second highest prescription drug trend at 11.9%.
- Asthmatics had the highest YoY and historical prescription drug trend of 19.7% and 13.7%, respectively.

[1] Members with co-morbidities and their corresponding claims are combined in each applicable category.
[2] Historical % change reflects the average annual trend between CY 2019 (results not illustrated in table) and CY 2023.
[3] Diabetes included both Type I (~7% of total) and Type II diabetics (~93% of total).
[4] Substance Use Disorder (SUD) includes drug abuse and alcohol related disorders but excludes tobacco-related disorders.[3]

Chronic Conditions

Change in Allowed PMPY

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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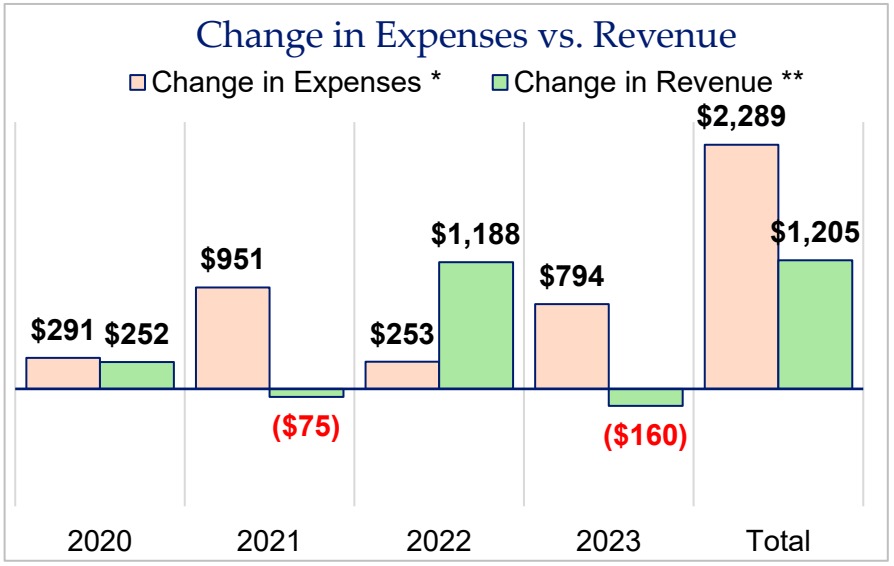
	$ Change in Total Plan Paid PMPY			
Chronic Condition[1]	**CY 2020**	**CY 2021**	**CY 2022**	**CY 2023**
Diabetes	$951	$2,180	($228)	$1,610
CAD	($345)	$2,936	($640)	$2,663
Asthma	$555	$2,280	($445)	$1,436
COPD	($871)	$4,176	$534	$727
Hypertension	$417	$1,759	$71	$1,503
Mental/Behavioral Health	$191	$1,118	$217	$1,032
Substance Use Disorder[3]	($784)	$1,169	$1,685	$1,210
CHF	$691	$3,546	($6,737)	$3,569
Total (Unique)	**$272**	**$1,224**	**$115**	**$1,018**
All Members (Non-Medicare)	**$291**	**$951**	**$253**	**$794**



Observations

The table above shows the change in total plan paid expenses per member per year (medical and prescription drugs) for each of the eight chronic conditions, as well as a total for all members with one or more of the chronic conditions listed [i.e., Total (Unique)] and a total for all members in the Plan [i.e., All Members (Non-Medicare)].

The chart on the right shows the change in plan paid per member per year versus the change in revenue per member per year.

- The table is highlighted in red whenever the change in expenses for that particular cohort exceeds the change in revenue allotted to the Plan in that year, whereas the table is highlighted in green whenever expenses for that particular cohort increase less than the revenue allotted.
- Over the last five years, medical and prescription drug expenses have increased $2,289 PMPY whereas revenue has only increased $1,205 PMPY.

* Expenses include non-Medicare medical and prescription drug expenses paid by the Plan.
** Revenue includes net contribution income, investment income, the COVID-19 reimbursement received in 2022, and prescription drug rebates.

Cancer

Prevalence and Cost

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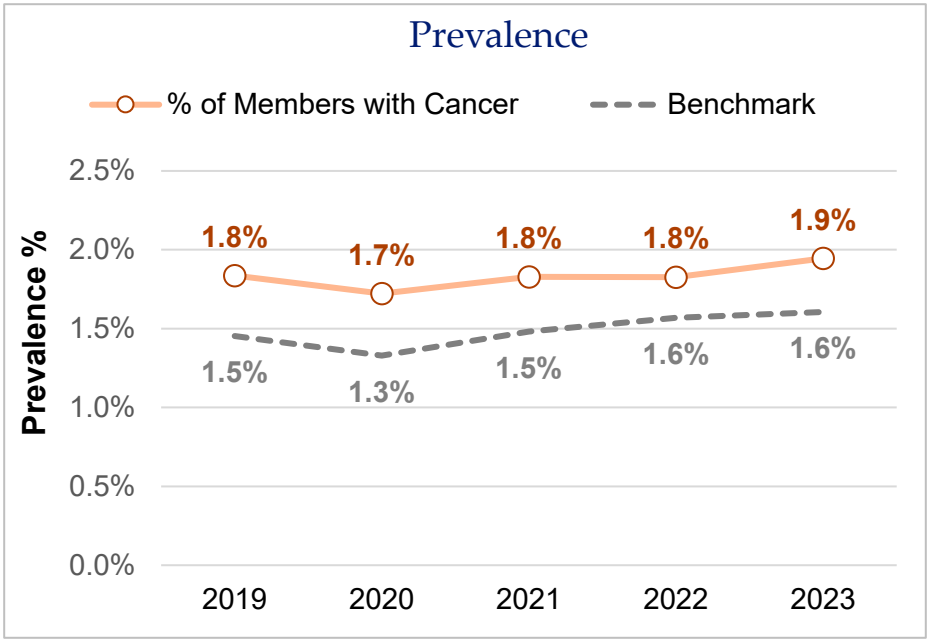

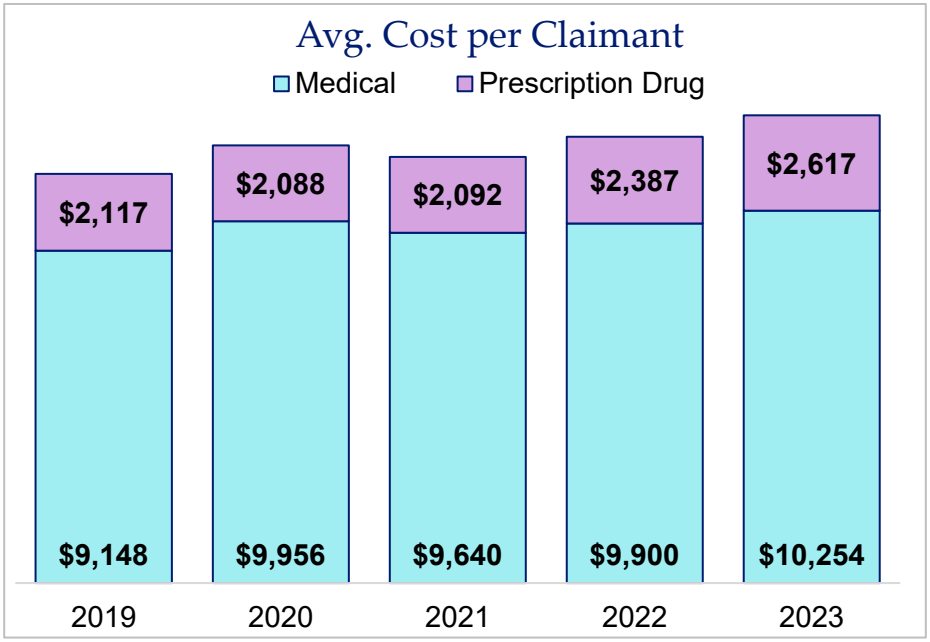

Observations

- Approximately 1.9% of the population had cancer in 2023, the highest of all years in the experience period. Cancer prevalence has increased each year since 2020.
  - The lowest prevalence was in 2020, which likely means that members delayed care which led to later diagnoses.
- 25% of the new cancers diagnoses in 2023 have recommendations for preventive screenings, including breast, cervical, colorectal, and prostate. For information on screenable cancers can be found on the following slides.
- Cancer is a major trend driver for most health plans. However, historically that has not been the case with this group. Medical costs PMPM for cancer treatment have increased 3.7% annually over the historical period and prescription drug costs have increased 6.3% annually, both below the overall trend rates for each benefit type.
  - Although historical trend rates for cancer are favorable, year-over-year medical trend for cancer treatment was 8% and was a trend driver for the Plan.

Cancer
Preventive Screenings

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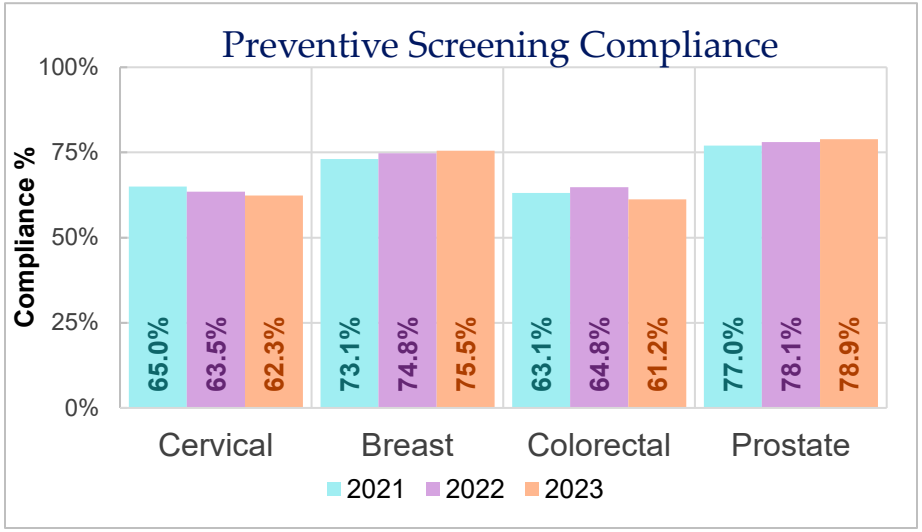
Preventive Cancer Screenings					
		Compliance Rate			
Type	Target Demographic[1]	CY 2021	CY 2022	CY 2023	Annualized Trend[2]
Cervical	Female Age 21-65	65.0%	63.5%	62.3%	-2.1pp
Breast	Female Age 40-74	73.1%	74.8%	75.5%	0.5pp
Colorectal[3]	All Age 45-75	63.1%	64.8%	61.2%	1.2pp
Prostate	Male Age 55-69	77.0%	78.1%	78.9%	0.8pp



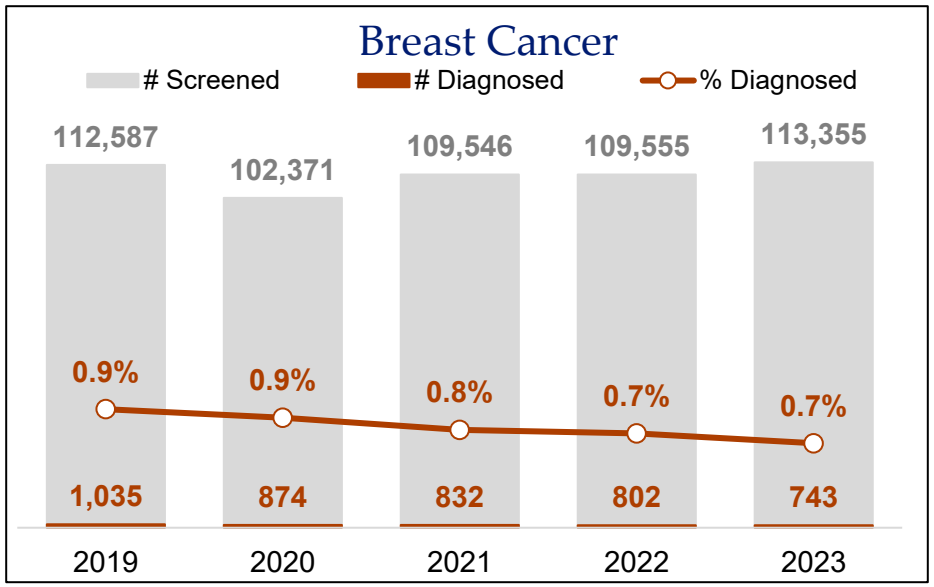
Observations

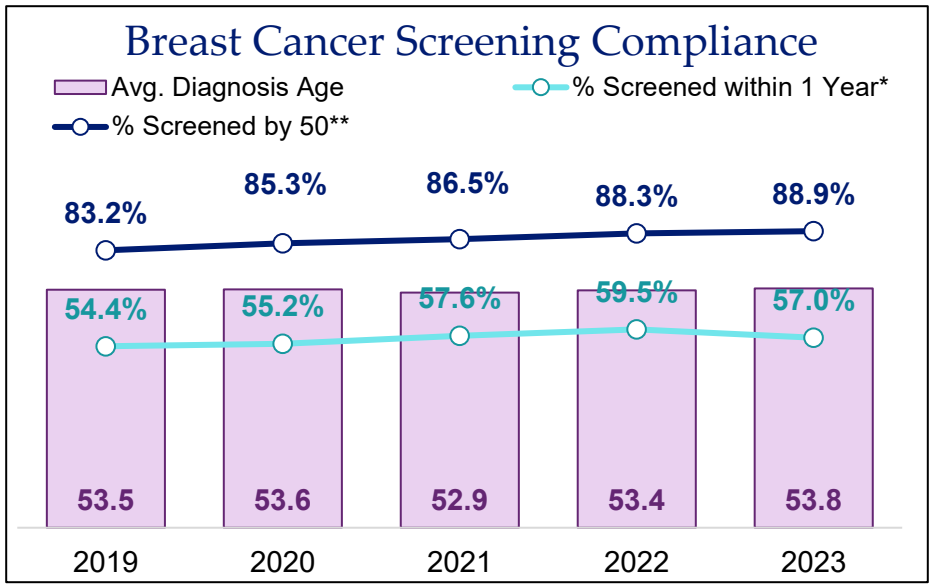
- Preventive Malignancies screenings suffered some of the largest reductions in utilization during the pandemic, particularly in April 2020. With the exception of cervical cancer, cancer screenings have mostly returned to pre-pandemic levels.
- Breast cancer and prostate cancer screening adherence is strongest at over 75%.
- We are showing low colorectal cancer screening compliance at approximately 61%. However, this metric can be difficult to measure due to the recommendations for this exam being once every ten years for some members.

[1] Excludes members with Medicare as their primary coverage but includes members aged 65 or older that are still active and Medicare is secondary.
[2] Annualized trend reflects the average annual trend between CY 2019 and CY 2023.
[3] Colorectal prior to 2023 reflects target demographic of age 50-75.

Cancer

Screenable Cancers - Breast





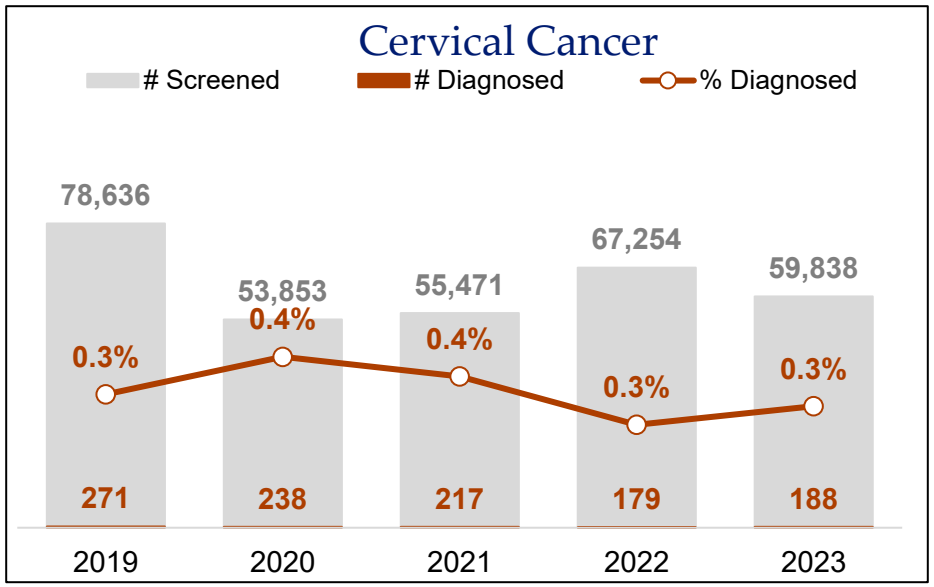
Observations

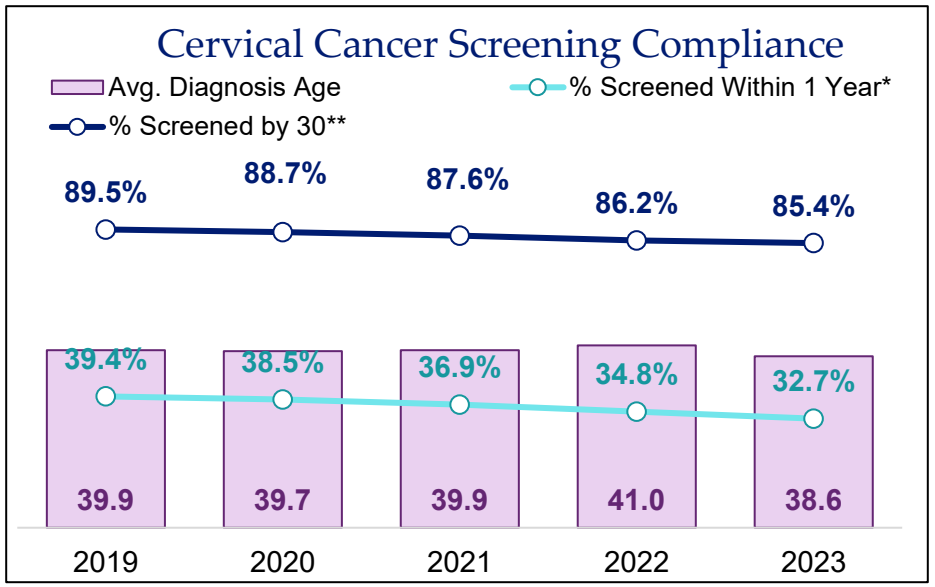
- After skin cancer, breast cancer is often the most prevalent screenable cancer and is a significant driver of both medical and pharmacy costs.
- During the pandemic in 2020 breast cancer screenings reached a low point of 102k members screened. The number of members screened has increased every year since then.
- The percent of members diagnosed (based on those screened) has decreased from 0.9% in 2019 to 0.7% in 2023. Typically, 0.5% - 1.0% of members screened will have cancer present. When over 1% of cancers screenings come back positive, it may be a sign that not enough members are getting screened.
- It is recommended that women begin breast cancer screenings at age 40. About 54% of women were getting screened within a year of turning 40 in 2019. In 2023 about 57% of women were screened within a year of turning 40.
- About 11% of females in the Plan did not have a breast cancer screening by age 50 in 2023, down from 17% in 2019.

**Screened within 1 year of turning age 40.*
***Only includes members enrolled in the Plan for at least one year prior to turning age 50.*

Cancer

Screenable Cancers - Cervical





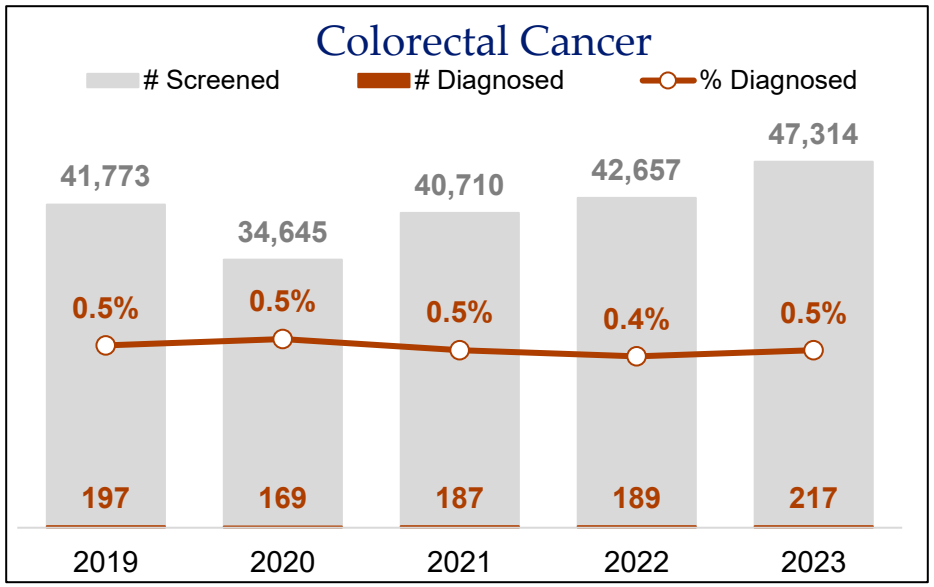
Observations

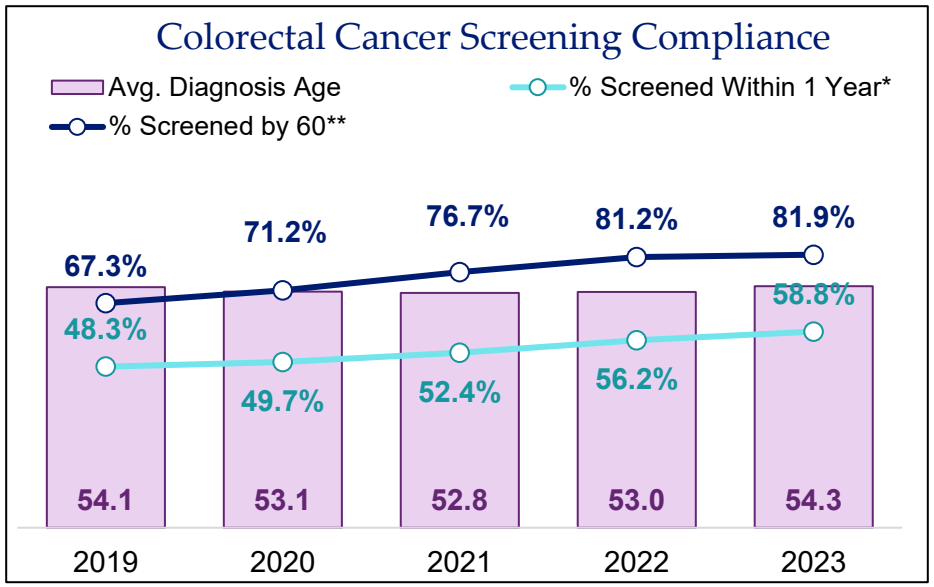
- Cervical cancer is the least prevalent screenable cancer but can be the most expensive to treat.
- Females are recommended to receive a cervical cancer screening beginning at age 21. 78,636 females in the Plan received a cervical cancer screening in 2019, the highest of any year during the experience period.
- 39.4% of females who turned age 21 in 2019 had a cervical cancer screening within 1 year, which is the highest rate during the experience period. In 2023, only 32.7% of females had a cervical cancer screening within a year of turning 21, the lowest rate during the last five years.
- Almost 90% of females in the Plan had a cervical cancer screening by age 30 in 2019 versus only 85.4% in 2023.

**Screened within 1 year of turning age 21.*
***Only includes members enrolled in the Plan for at three years prior to turning age 30.*

Cancer

Screenable Cancers - Colorectal





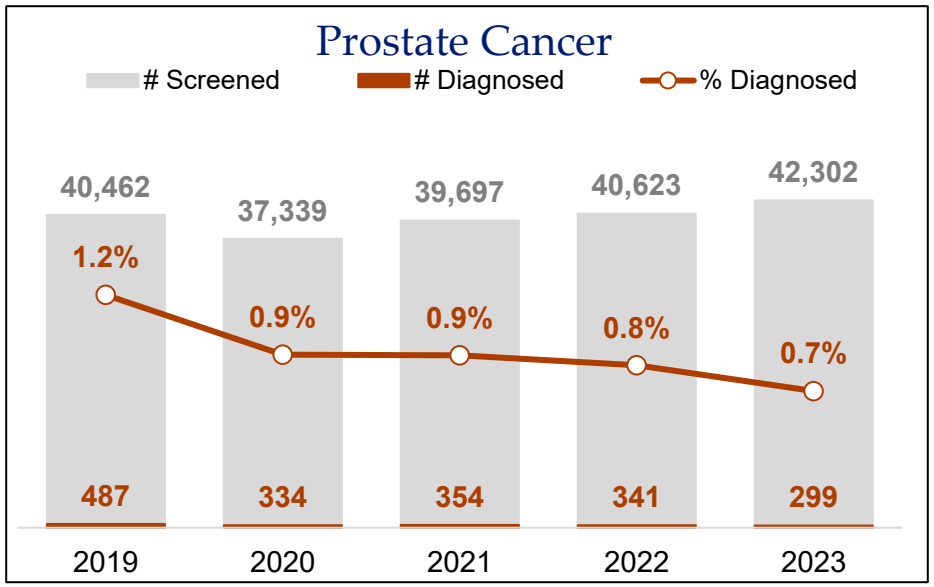
Observations

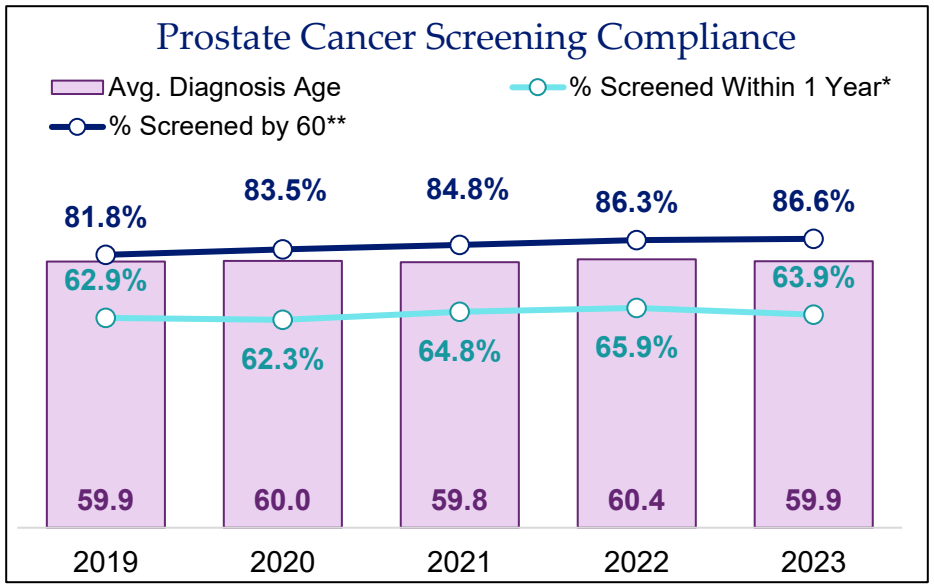
- The recommended age to begin colorectal cancer screenings recently decreased from 50 to 45. However, we are using 50 in the above exhibit due to this being a recent change.
- Colorectal cancer screenings are particularly valuable to get as soon as recommended. Although cancer is typically only detected in 0.5% - 1.0% of screenings, As much as 40% of colorectal cancer screenings find pre-cancerous polyps and typically 5-10% of pre-cancerous polyps turn into cancer. Thus, getting a colorectal cancer screening as early as recommended can help reduce cancer prevalence and/or improve outcomes.
- The percent of members turning age 50 who receive a colorectal cancer screening within one year continues to improve. Only about 48% had the recommended screening within a year of turning age 50 in 2019, but that has improved to 59% in 2023.
- Approximately 19% of members still did not receive a colorectal cancer screening by age 60 in 2023, down from 33% in 2019.

**Screened within 1 year of turning age 50.*
***Only includes members enrolled in the Plan for at least five years prior to turning age 60.*

Cancer

Screenable Cancers - Prostate





Observations

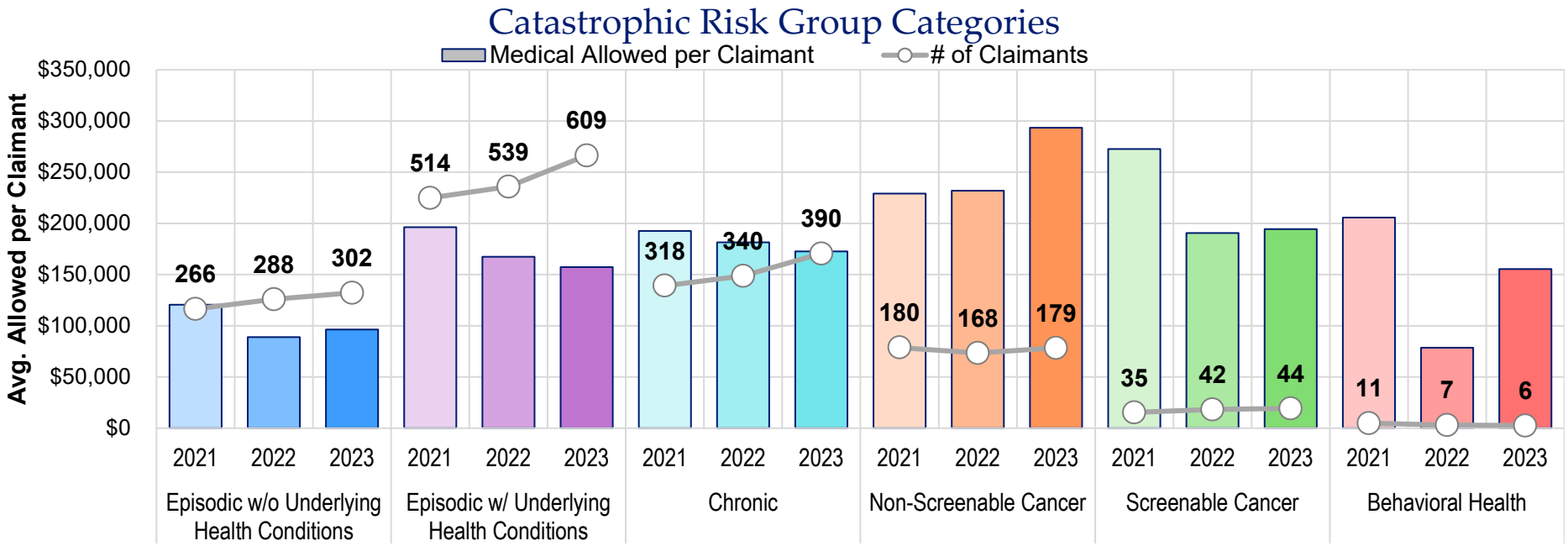
- Prostate cancer screenings, which are recommended for males beginning at age 50 who are at average risk, have the highest compliance rates in the Plan of all screenable cancers.
- Although prostate cancer screenings slipped in 2020 during the pandemic, screening rates are now higher than pre-pandemic rates.
- Almost 64% of male members received a prostate cancer screening within 1 year of turning 50 in 2023, up slightly from 2019 but down from 2022.
- Although compliance is high, there are still over 13% of members who turned age 60 in 2023 that have never had a prostate exam.

**Screened within 1 year of turning age 50.*
***Only includes members enrolled in the Plan for at least two years prior to turning age 60.*

Catastrophic Risk Group

Summary by Category

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
A Division of the Department of State Treasurer



Observations

- The chart above shows members in the catastrophic risk group by year grouped into six different categories.
  - Episodic w/ underlying health conditions includes any member with at least one major chronic condition[1], but the high-cost claim was for an acute event.
  - Behavioral health includes both mental health and substance use disorder related claims.
  - Screenable cancer includes breast, cervical, colorectal, lung, prostate, and skin cancers.
- Typically, the episodic w/ underlying health conditions, chronic, behavioral health, and screenable cancer categories represent the greatest opportunity for intervention and prevention. These cohorts represented 69% of all high-risk members in 2023.

[1] Chronic conditions include: asthma, coronary artery disease (CAD), congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), diabetes, and hypertension.

Catastrophic Risk Group

Top Conditions

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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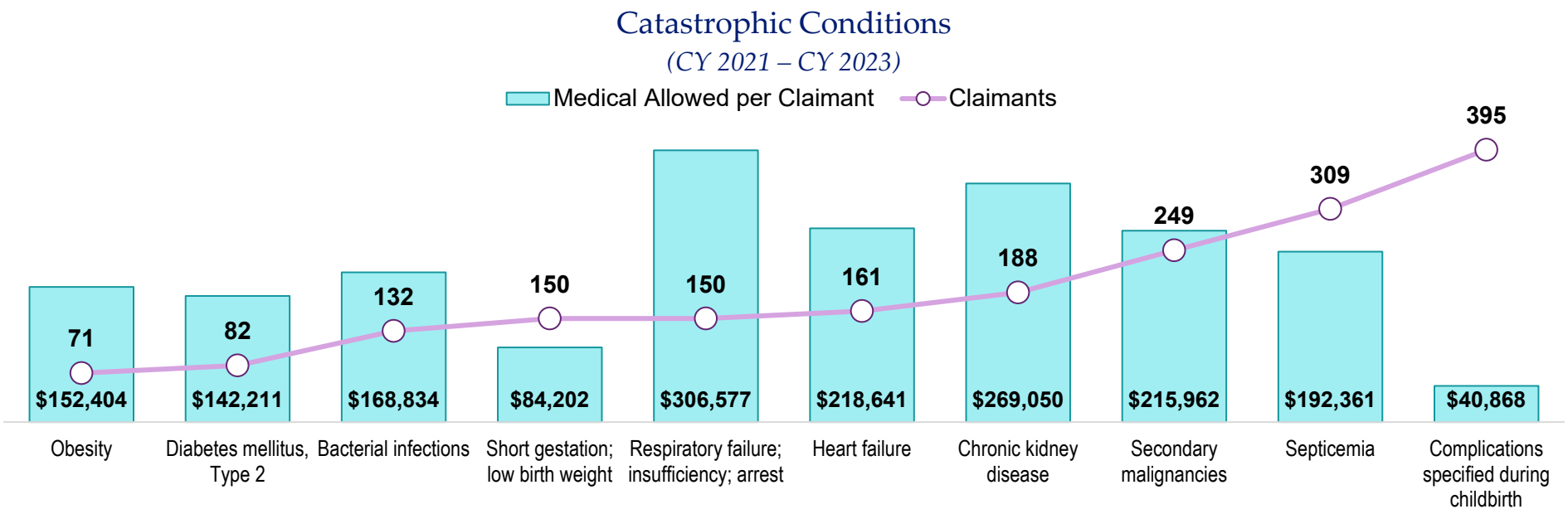

Observations

- The chart above shows the top-10 most prevalent conditions for members in the catastrophic risk group during the 3-year period of 2021 – 2023.
- Diabetes is the 9th most prevalent condition for members in the catastrophic risk group. However, several other conditions are common complications from unmanaged diabetes, including chronic kidney disease, heart failure, respiratory failure, and obesity.
- Septicemia, which is a serious condition in which bacteria infects the bloodstream, is the second most prevalent condition for members in the catastrophic risk group and can be indicative of low quality of care and insufficient post-discharge care. It was also a common condition following hospitalizations for COVID-19.

Catastrophic Risk Group

Chronic Conditions

North Carolina State Health Plan
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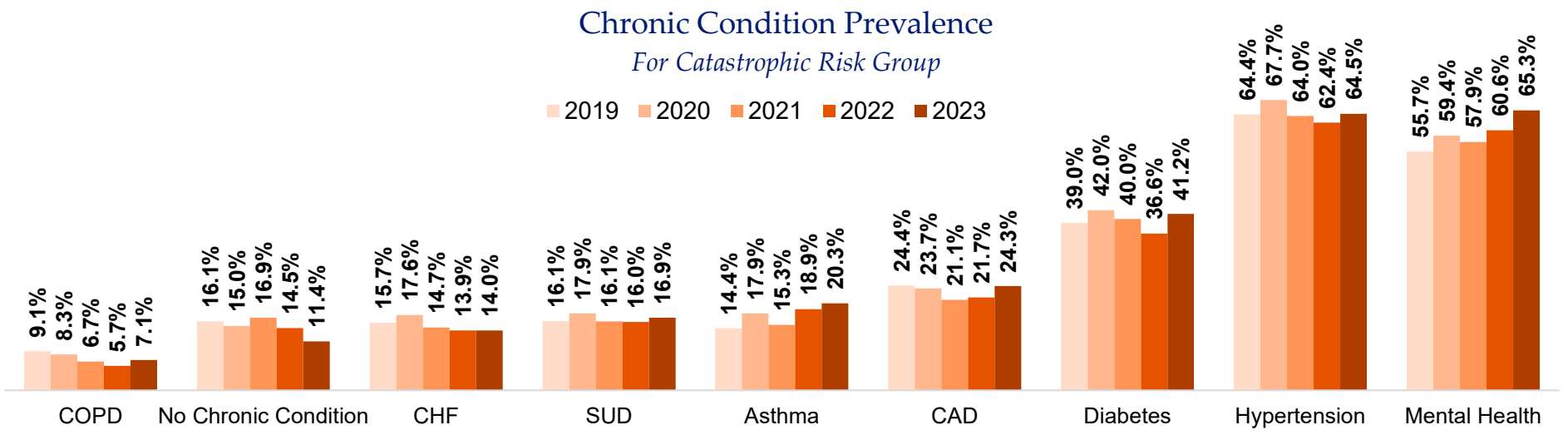

Observations

- Although many members in the catastrophic risk group have what appear to be episodic-type events, the event is often triggered by underlying chronic conditions and can be avoided through lifestyle changes, medication adherence, and other modifiable factors.
  - 89% of members in the catastrophic risk group had one or more of the eight chronic conditions listed above in 2023, up from 84% in 2019.
- 41% of members in the catastrophic risk group in 2023 had diabetes and 66% had hypertension.
  - In 2019, 39% of members in the catastrophic risk group had diabetes.
- Approximately 2/3 of members in the catastrophic risk group had a mental health condition present in 2023, up from 56% in 2019.

Catastrophic Risk Group

Chronic Conditions

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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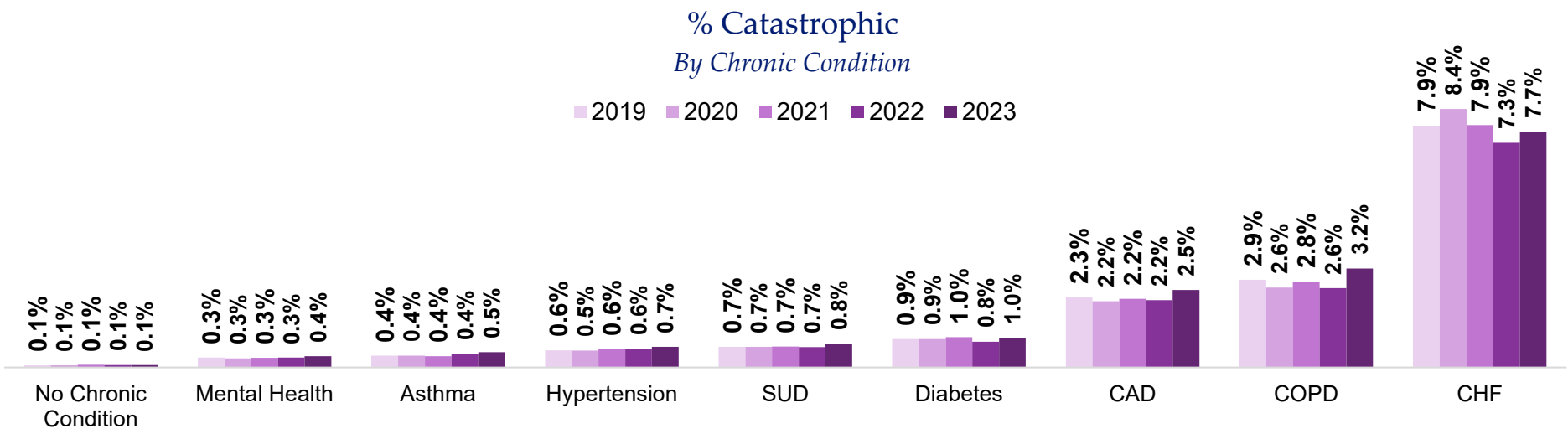

Observations

- Approximately 0.7% of members with hypertension and 1.0% of members with diabetes are in the catastrophic risk group. Although these conditions don't result in much risk on their own, if left unmanaged more serious comorbidities can develop. Coronary artery disease (CAD) and congestive heart failure (CHF) are often the result of unmanaged high blood pressure (hypertension), high cholesterol (hyperlipidemia), and/or diabetes but can also be triggered by alcohol abuse.
  - CHF presents the most risk of all chronic conditions here, with almost 8% of members with this condition in the catastrophic risk group. CAD is third with about 2.5% of members with the condition in the catastrophic risk group.
- Mental health is not a significant risk factor on its own with less then 0.5% of members with a mental health condition in the catastrophic risk group. However, mental health disorders can increase risk substantially when present alongside physical chronic conditions, partially due to lower adherence rates to recommended care. When evaluating chronic condition management, it is important to consider the mental health component as well.

Diabetes, Cardiovascular Disease, and Obesity

Glucagon-Like Peptide-1 Agonists (GLP-1s)

North Carolina State Health Plan
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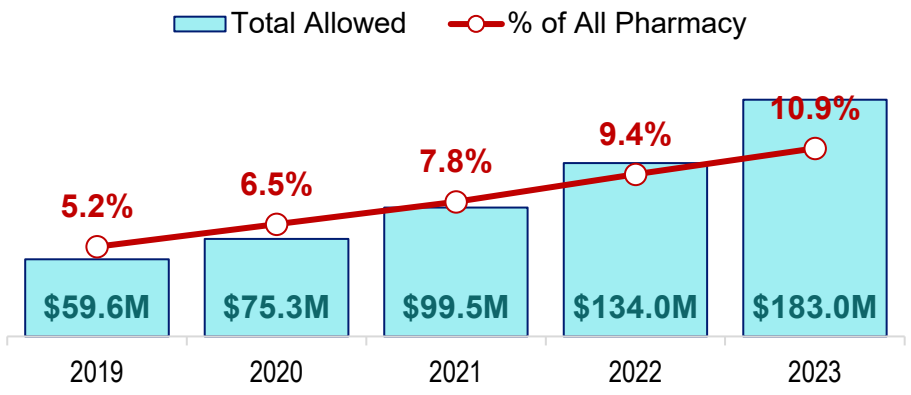
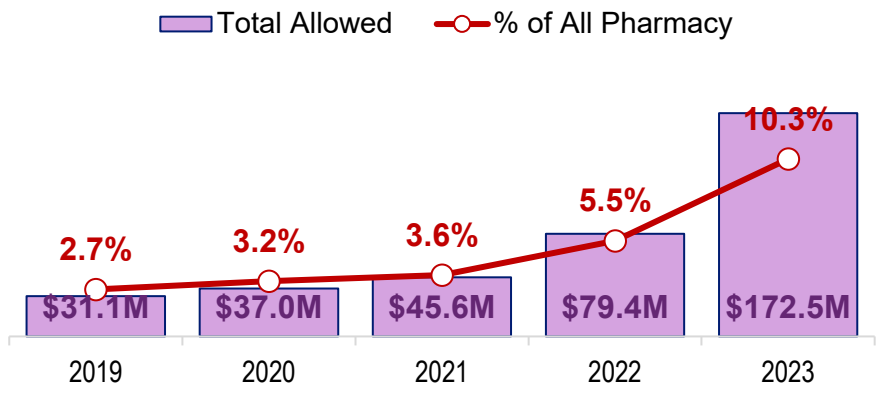
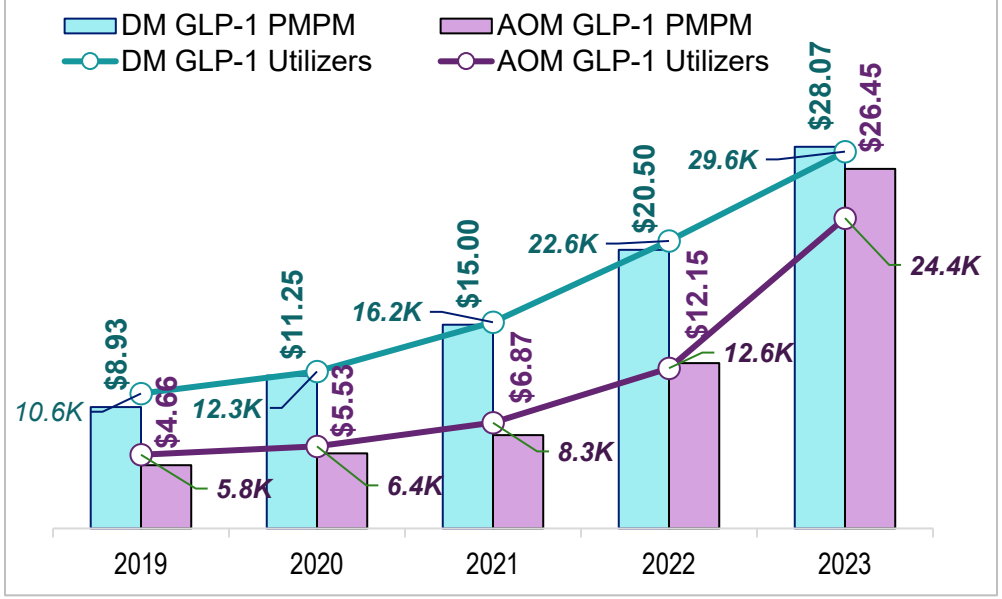
Anti-Diabetic GLP-1 Summary



Anti-Obesity GLP-1 Summary



GLP-1 Utilizers and PMPM



Observations

- GLP-1 medications have been a large part of the Plan's spend.
- Despite the small utilizer base, anti-obesity GLP-1s (AOMs) have nearly equaled the cost of anti-diabetic GLP-1s (DM) in 2023 due to their higher cost.
- While these medications can be highly effective for both diabetes and weight loss, often individuals are not aware of the potential side effects associated with them nor how to properly initiate therapy and adjust one's diet, which can lead to early discontinuation and medication waste.

Note - All costs shown are gross of rebates

Diabetes, Cardiovascular Disease, and Obesity

GLP-1s: Persistence

North Carolina State Health Plan
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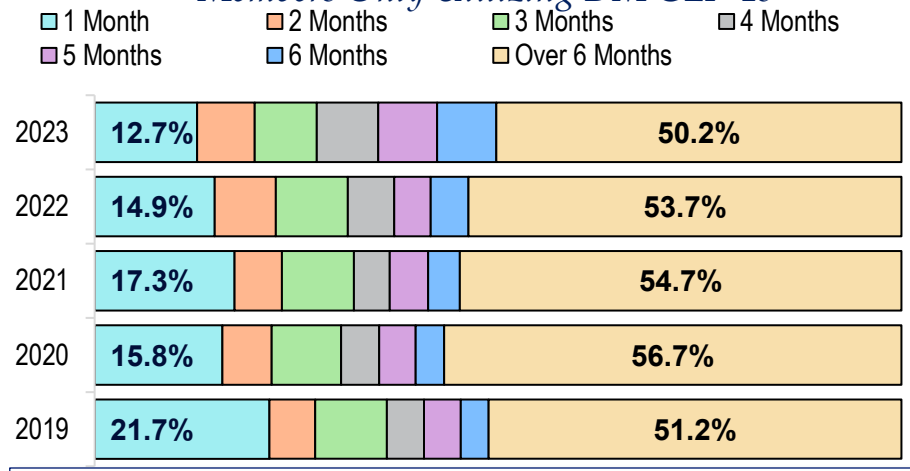
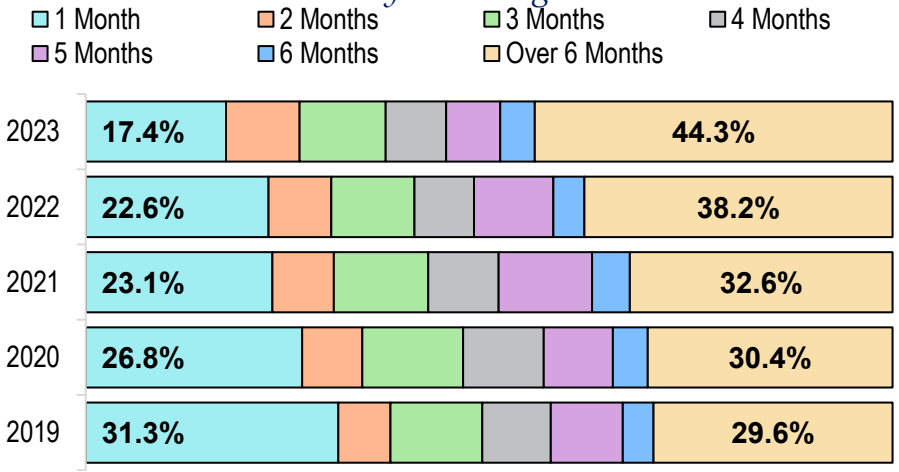
Anti-Diabetic GLP-1 Persistence

Members Only Utilizing DM GLP-1s



Anti-Obesity GLP-1 Persistence

Members Only Utilizing AOM GLP-1s

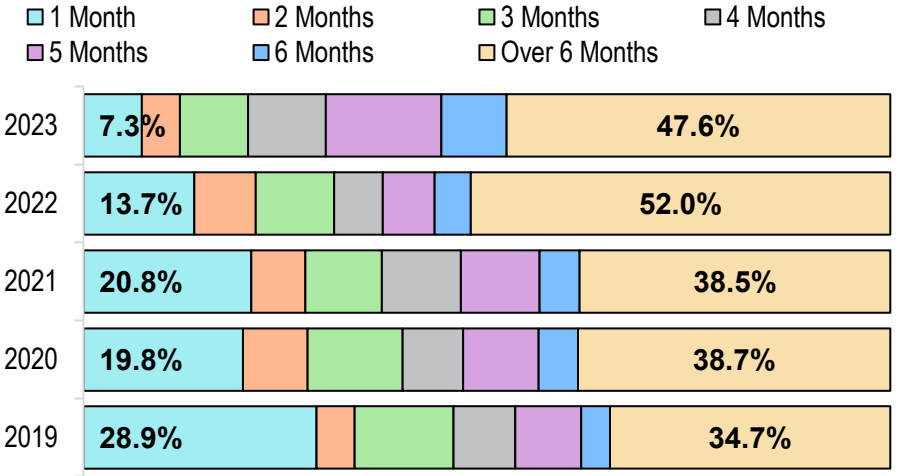


Observations

- Medication persistence is considered the duration of time an individual continues a medication after initiation until discontinuation (considered to occur if no medication refill occurs within 2x the expected duration of a prescription).
- For anti-diabetic GLP-1s, longer-term, over 6-month persistence has historically been above 50%.
- Conversely, persistence for anti-obesity GLP-1s was as low as 30% prior to 2021 but has increased to 44.3% in 2023. For weight loss treatment, 6 months is considered the minimum time until assessment of weight loss benefit but less than half of new utilizers reach this standard.
- The bottom right highlights persistence trends for members who used both an anti-diabetic and anti-obesity GLP-1 at various times, persistence for this group has also increased.

Combined GLP-1 Persistence

Members Utilizing Both Types of GLP-1s



Segal

Diabetes, Cardiovascular Disease, and Obesity

GLP1s: Target Doses

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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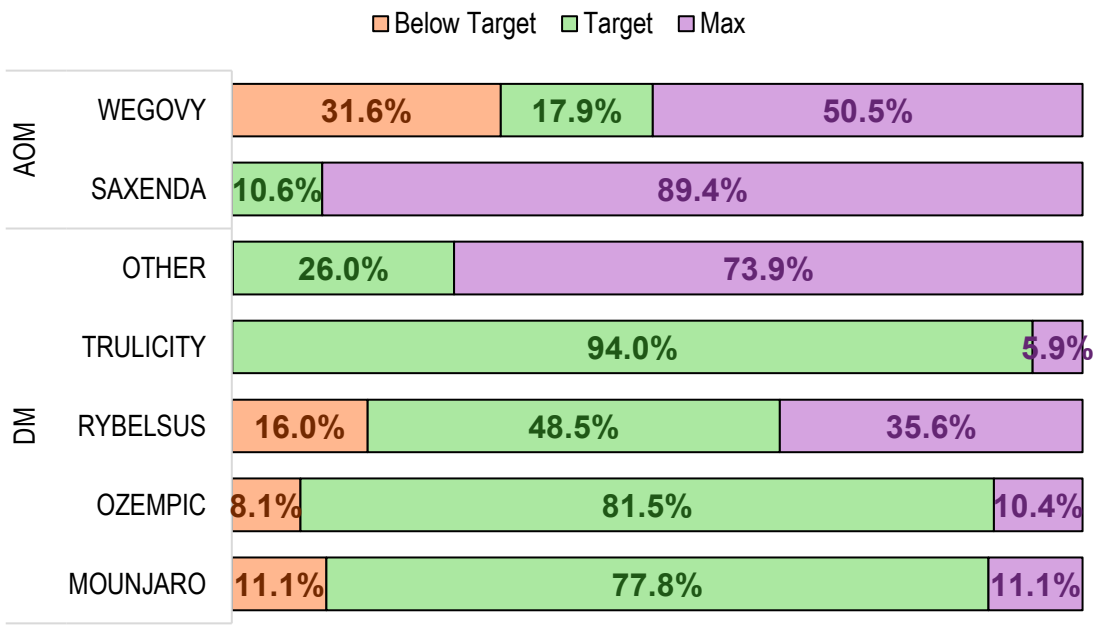
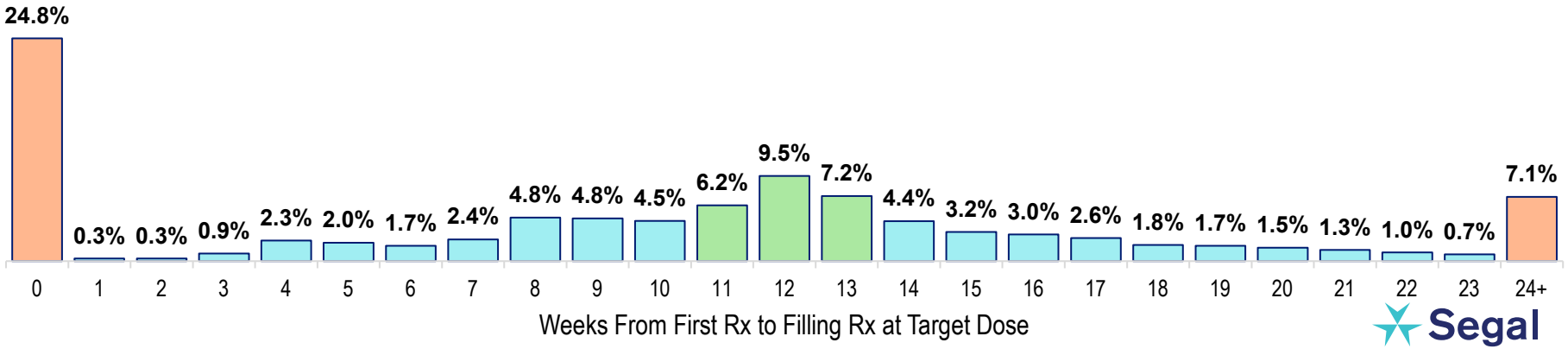
GLP-1 % Days Prescribed at Target Dosing



Observations

- Certain GLP-1 medications have target dosage ranges, which are the approved doses for clinical effectiveness. For anti-diabetic GLP-1s, Mounjaro, Ozempic, and Rybelsus all have starting doses used to reduce gastrointestinal side effects, but members should be initiated on a target dose between 4 and 6 weeks. For weight loss, Wegovy has a target dose typically reached 12 weeks after initiation, with the maximum dose the preferred. Overall, nearly one-third of prescribed doses for Wegovy are not within the target range although half of days supply are prescribed at the maximum dosage.
- Often, providers prescribed patients the full range of prescriptions from initiation to target dose, which can lead to waste if members do not tolerate therapy. For Wegovy, particularly, nearly 25% of new utilizers received a prescription for a target dosage at the start of treatment (either alone or in addition to other Wegovy prescriptions).

Wegovy – Weeks to Target Dose



Segal

Diabetes, Cardiovascular Disease, and Obesity

Anti-Diabetic GLP1s: Accrued Doses

North Carolina State Health Plan
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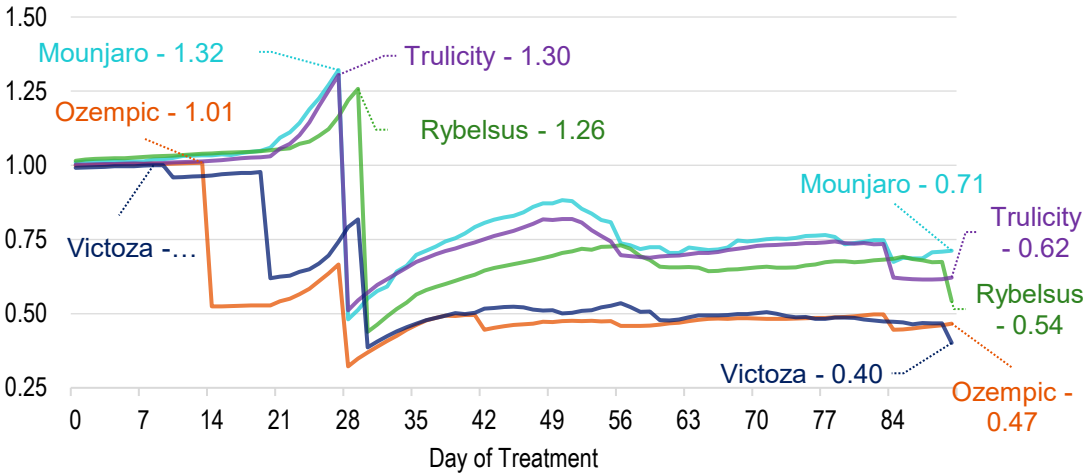
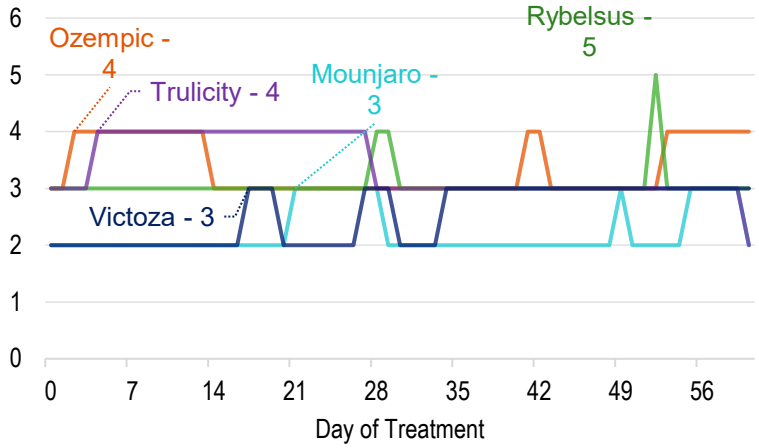
Average Doses Available - DM

Accrued Daily Doses – First 90 Days



Maximum Doses Available - DM

Accrued Daily Doses – First 60 Days



Observations

- GLP-1 medication shortages have been on ongoing concern, which can lead to over-dispensing up front, potentially resulting in stockpiling and or waste. Full assessment of stockpiling can be difficult as GLP-1 medications may be prescribed at a dose less than the maximum able to be administered. For example, Victoza may be prescribed at a dose between 0.6 mg and 1.8 mg per day, A standard Victoza pen may provide up to 18 mg, or 10 daily doses at the maximum of 1.8 mg or 30 daily doses at 0.6 mg per day.
- The above provides the average total daily doses members had available based on the actual quantity filled and the **maximum** dosage a product may provide each day after first starting treatment. Accrued daily doses above 1 indicate overlap in prescriptions due to either refiling prior to the end date of the previous prescription or filling multiple prescriptions at once.
- Mounjaro, Trulicity, and Rybelsus were the most prone to frequent, initial dispensing with averages has high as 1.32, 1.30, and 1.26, respectively. After 90 days, fill rates for all medications decreased, but members on Mounjaro were most consistently filling, with an average of 0.71 daily doses available per day. Conversely, Victoza and Ozempic had averages below 0.5, which could point to low adherence, use of lower dosages, or difficulty in obtaining medication, any of which could reduce effectiveness of treatment.
- In terms of individual utilizers, Ozempic and Trulicity saw members having medication supplies on-hand of up to 4 times more than potentially needed within the first 2 – 4 weeks of therapy.

Diabetes, Cardiovascular Disease, and Obesity

Anti-Obesity GLP1s: Accrued Doses

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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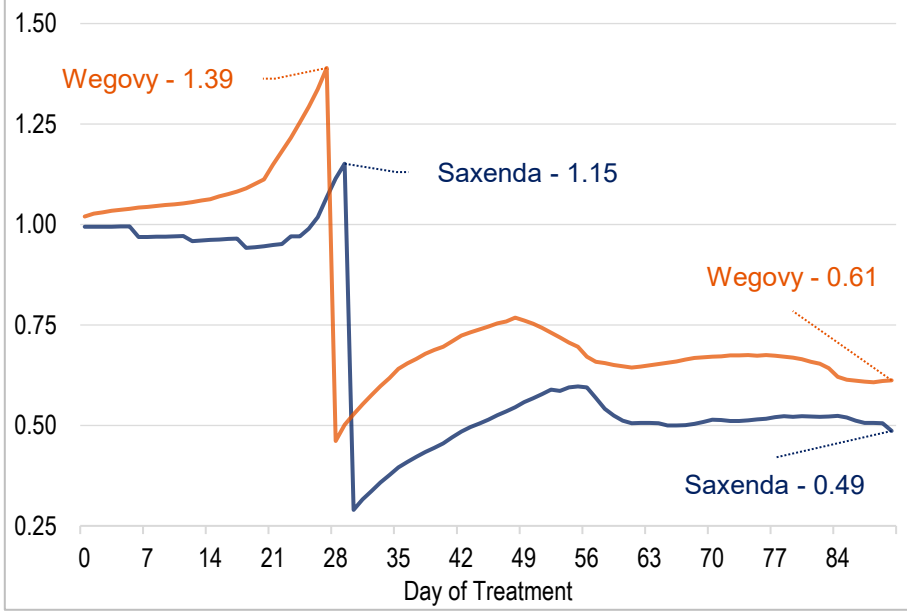
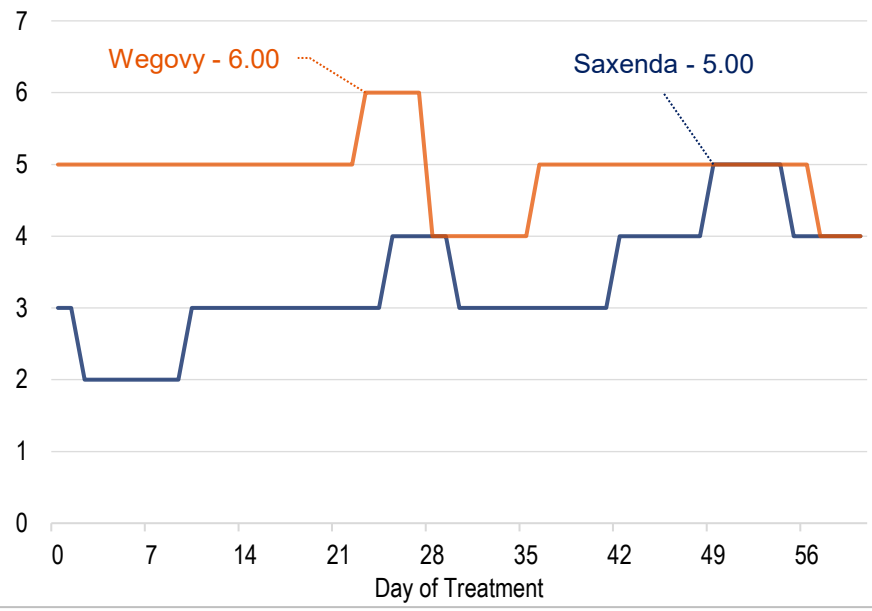
Average Doses Available – AOM

Accrued Daily Doses – First 90 Days



Maximum Doses Available – AOM

Accrued Daily Doses – First 60 Days



Observations

- For anti-obesity GLP-1s, Wegovy was most notable for frequent, initial filling, with members averaging 1.39 doses available by the end of week 4 of starting therapy compared to 1.15 for Saxenda.
- After 90 days, like with DM GLP-1s, fill rates decreased, however, Wegovy utilizers had an average of 0.61 daily doses on hand compared to 0.49 for Saxenda. As with Victoza, Saxenda may be used at a dosage between 0.6 mg per day or has high as 3 mg per day, which could indicate utilizers on lower dosages. However, Wegovy is a fixed dose per pen and despite persistence improving, low average doses on hand could point to poor medication adherence or shortages, which reduces effectiveness.
- As with DM GLP-1s, and as noted earlier, individual members may fill multiple prescriptions up front. This trend is more pronounced with weight loss-specific GLP-1s where members had 5 or even 6 doses available on hand at a time within the first 60 days.

Diabetes, Cardiovascular Disease, and Obesity

Anti-Obesity GLP-1s Utilizers with Diabetes

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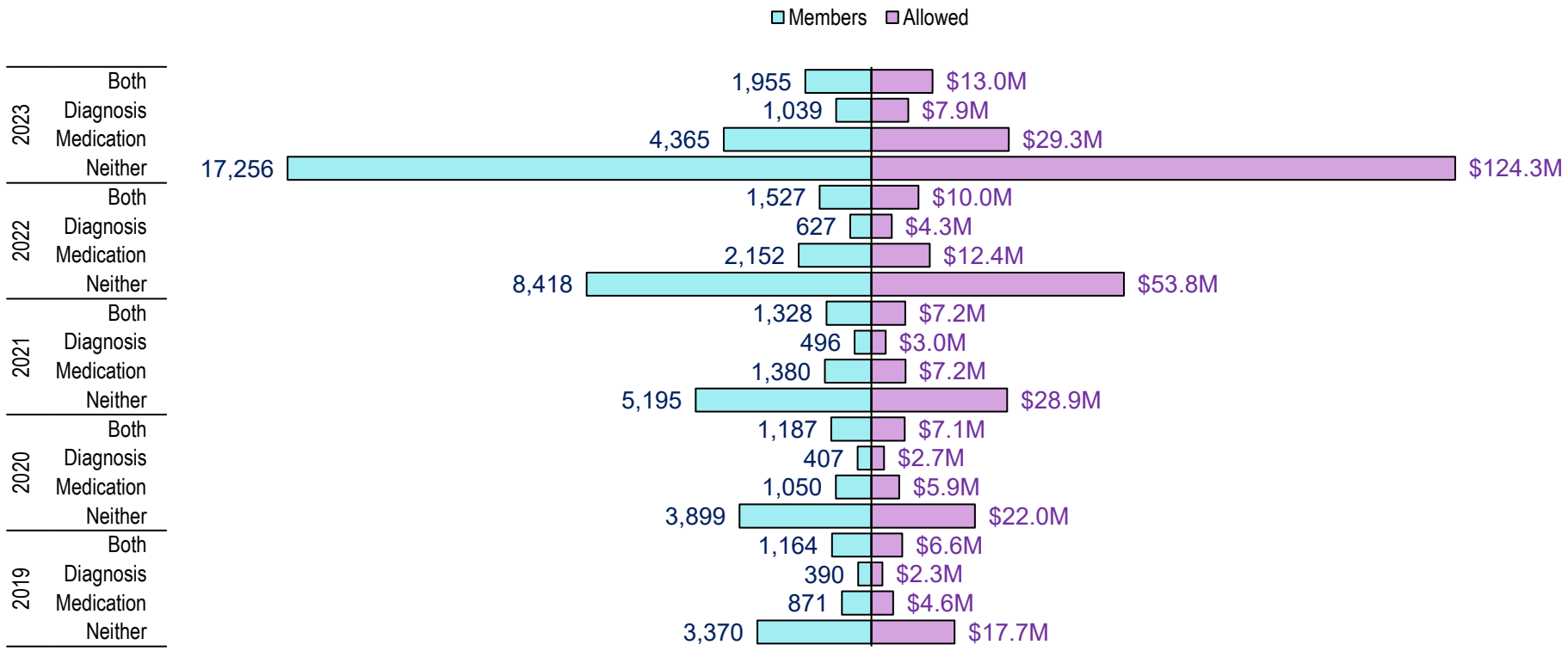
Total Members and Pharmacy Allowed

Anti-Obesity GLP-1 Users by Prior Diabetes Diagnosis or Medication Use



Observations

- The Plan excluded anti-obesity GLP-1 medications effective April 1, 2024; however, a number of members have a diagnosis of diabetes or prior anti-diabetic medication usage (GLP-1 or other) as noted above.
- In 2023, 7,359 of 24,615 members had a diagnosis of diabetes or received an anti-diabetic medication with a total of $50.1M (28.7% of total AOM GLP-1 spend). The Plan may see these members converted to anti-diabetic GLP-1s in the future.

Diabetes, Cardiovascular Disease, and Obesity

Glucagon-Like Peptide-1 Agonists (GLP-1s) Monitoring

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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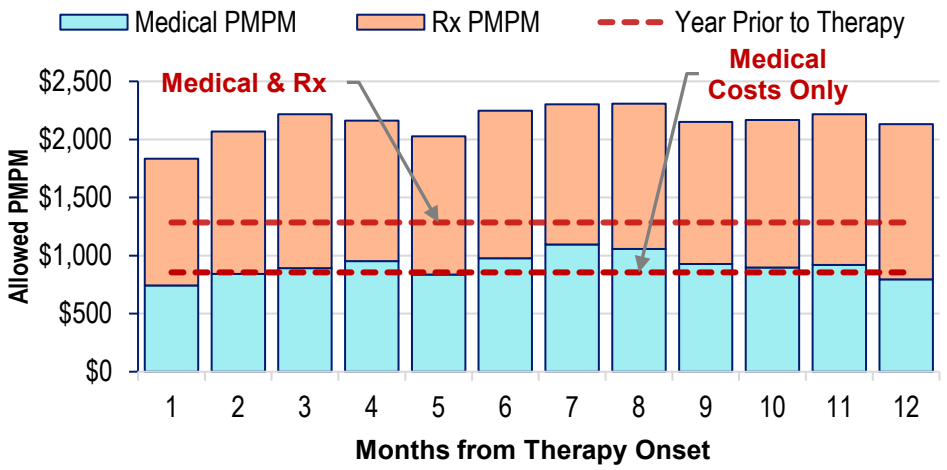
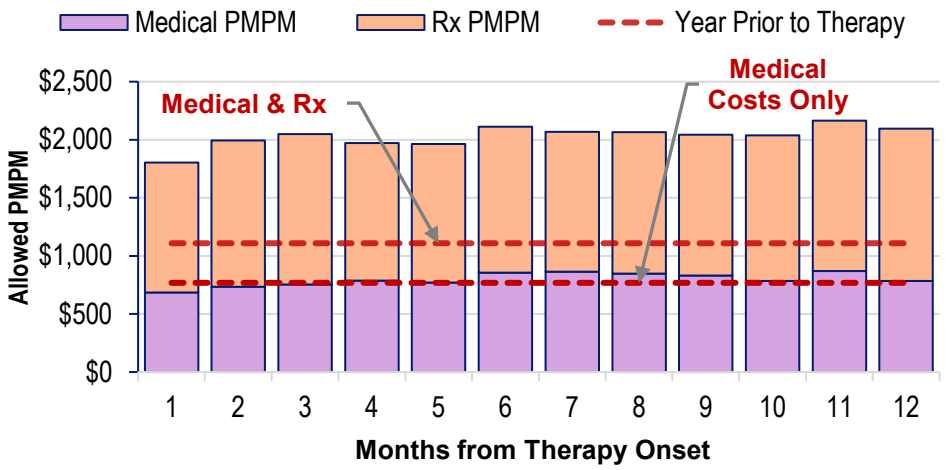
Anti-Diabetic GLP-1 Summary[1]



Anti-Obesity GLP-1 Summary[2]



Observations

- In order to review the effectiveness of GLP-1 medications, we have identified a cohort of individuals who started therapy in 2022 and had at least four scripts filled. Experience was reviewed for the 12 months following therapy onset and compared to the 12 months prior to therapy use.
- For members with at least four prescriptions of anti-diabetic GLP-1s, prescription drug costs were $430 PMPM in the year prior to therapy onset and medical costs were $855 PMPM ($1,285 total PMPM). For the year after therapy onset, prescription drug costs were $1,239 PMPM and medical costs were $910 PMPM ($2,149 total PMPM).
- For members with at least four prescriptions of anti-obesity GLP-1s, prescription drug costs were $341 PMPM in the year prior to therapy onset and medical costs were $768 PMPM ($1,109 total PMPM). For the year after therapy onset, prescription drug costs were $1,230 PMPM and medical costs were $794 PMPM ($2,024 total PMPM).
- Although there is limited evidence that use of GLP-1 medications results in material improvements on the medical side, it may take several years for benefits to manifest and should be monitored periodically.

[1] Includes 5,655 members who started therapy in 2022 and had at least four fills.
[2] Includes 9,609 members who started therapy in 2022 and had at least four fills.
Note: Rebates are not included as an offset to prescription drug costs.

Diabetes, Cardiovascular Disease, and Obesity

Atherosclerotic Cardiovascular Disease (ASCVD) Comorbidity

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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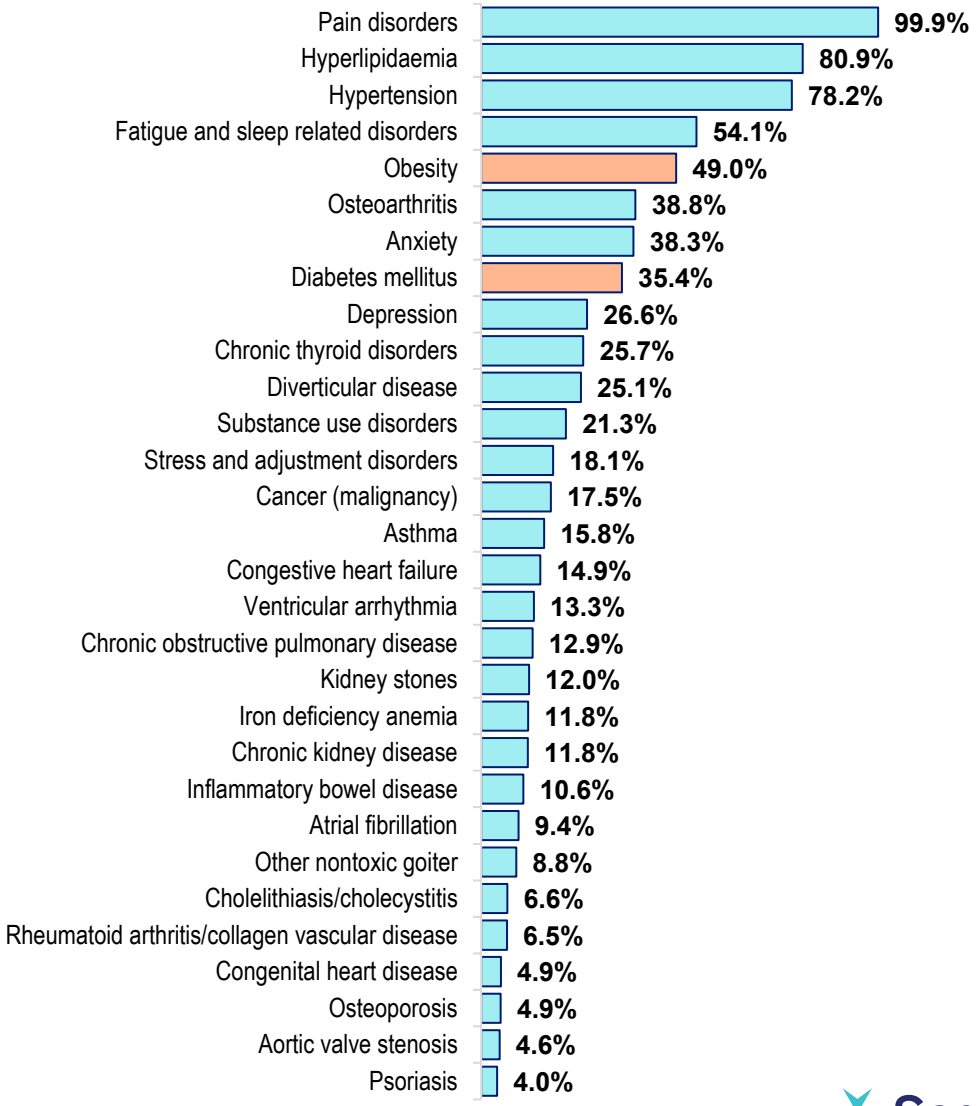
Observations

- GLP-1s medications are currently recommended or approved for both type 2 diabetics with atherosclerotic cardiovascular disease (ASCVD) and in individuals with obesity or overweight with comorbidities and a history of CVD to reduce the risk of severe CV events. Studies are underway to expand these CV risk reduction indications to non-weight loss versions of GLP-1 medications, which could increase utilization further.
- ASCVD is often accompanied by multiple comorbidities. The prevalence of comorbidities for a subset of members (24,265) with an ASCVD[1] diagnosis are shown to the right.
- Obesity and diabetes prevalence is 49.0% and 35.4%, respectively, across these members, who would be candidates for cardiovascular or renal risk reduction with GLP-1 therapy.

Comorbidity Prevalence



1. Members with an ASCVD diagnosis since 2019 and 4-years continuous enrollment after initial diagnosis

Diabetes, Cardiovascular Disease, and Obesity

Atherosclerotic Cardiovascular Disease (ASCVD) Comorbidity

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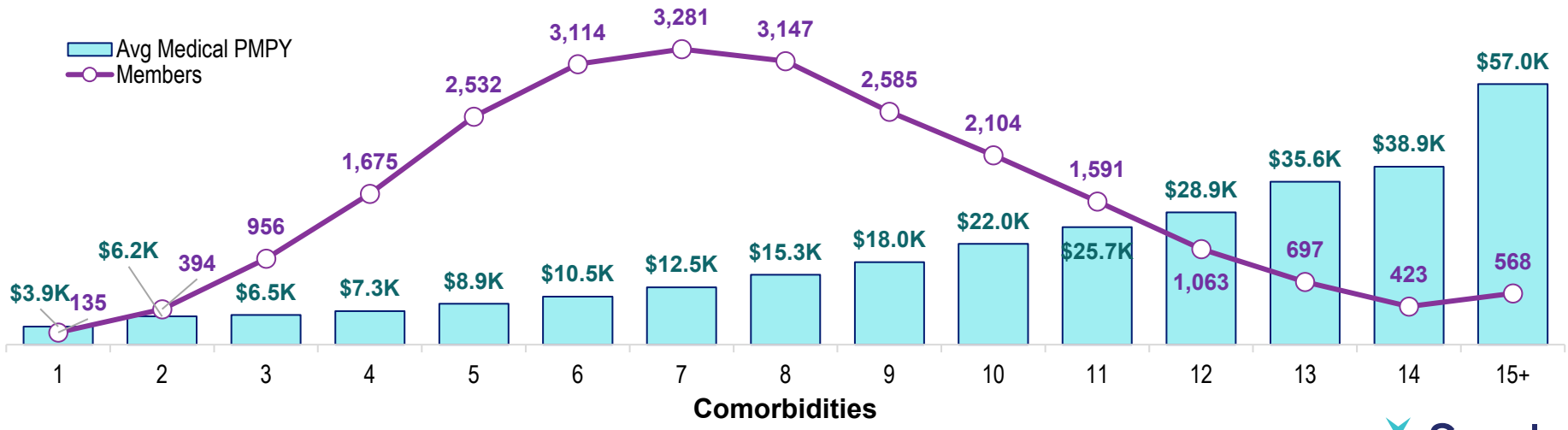
ASCVD Demographics[1]

	Female	Male	All
Average Age	53.5	54.7	54.0
Members	13,357 [55.0%]	10,908 [45.0%]	24,265 [100.0%]
Under 40	992 [4.1%]	620 [2.6%]	1,612 [6.6%]
40-49	2,207 [9.1%]	1,489 [6.1%]	3,696 [15.2%]
50-59	6,058 [25.0%]	4,979 [20.5%]	11,037 [45.5%]
60+	4,100 [16.9%]	3,820 [15.7%]	7,920 [32.6%]
Average Comorbidities	8.2	7.3	7.8
Under 40	6.4	5.5	6.0
40-49	8.0	7.0	7.6
50-59	8.3	7.4	7.9
60+	8.5	7.6	8.1

Observations

- The general demographic breakdown of these ASCVD members is shown to the right, with 55.0% female and an average age of 54.0 years. The average comorbidities is 7.8 per member.
- As comorbidities increase, the average medical PMPY rises as well. For a member with a single condition, the average medical PMPY is under $4K compared to $57.0K for members with 15 or more comorbidities.

Members with ASCVD and Average Medical PMPY[1]



1. Members with an ASCVD diagnosis since 2019 and 4-years continuous enrollment after initial diagnosis

Segal

Diabetes, Cardiovascular Disease, and Obesity

Atherosclerotic Cardiovascular Disease (ASCVD) Comorbidity

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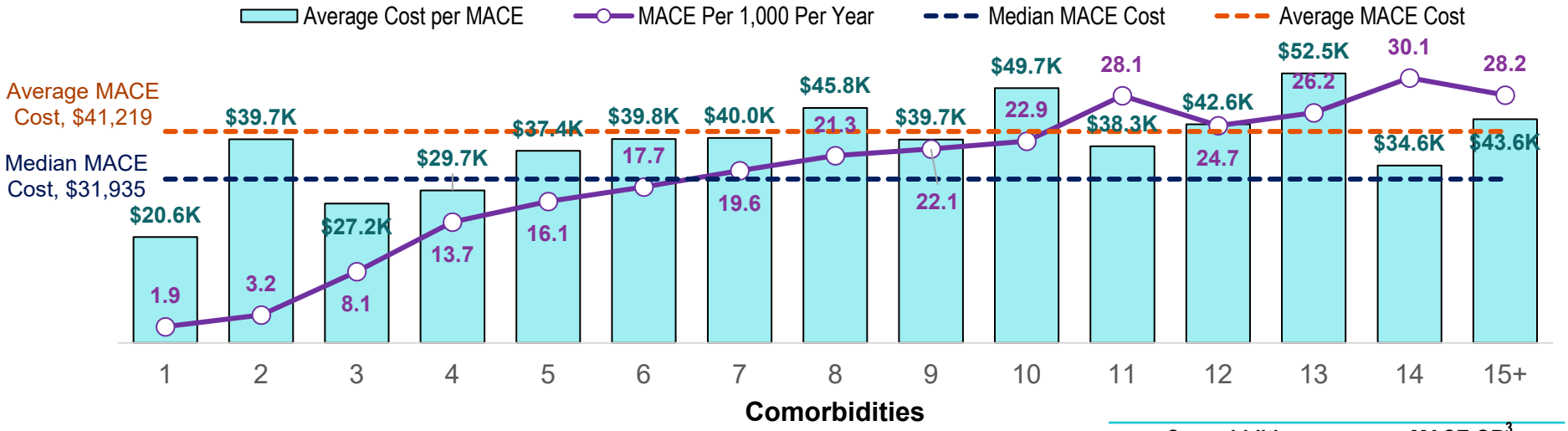
Major Adverse Cardiovascular Events (MACE)[1]



Observations

- Among SHPNC members, the rate of major adverse cardiovascular events (MACE)[2] per 1,000 ASCVD members per year is substantially higher as comorbidities increase. MACE rates for members with 11+ comorbidities is 15x higher than members with only a single condition.
- The median cost for a MACE episode was $31.9K (excluding long-term costs impacts of the event) but increases with comorbidities.
- Wegovy, originally approved as an anti-obesity treatment, obtained FDA-approval for cardiovascular risk reduction as well and now is covered under Medicare due approval of this new indication. Manufacturers are performing studies for similar risk reduction in unrelated to obesity, which could further increase the number of eligible utilizers

Comorbidities	MACE OR[3]
2	1.7
3	4.4
4	7.4
5	8.7
6	9.6
7	10.6
8	11.5
9	11.9
10	12.4
11	15.2
12	13.3
13	14.1
14	16.3
15+	15.2

1. Members with an ASCVD diagnosis since 2019 and 4-years continuous enrollment after initial diagnosis
2. Major adverse cardiovascular events include heart attack or stroke
3. OR – Odds ratio compared to MACE rate for members with 1 comorbidity

Diabetes, Cardiovascular Disease, and Obesity

Obesity Treatment

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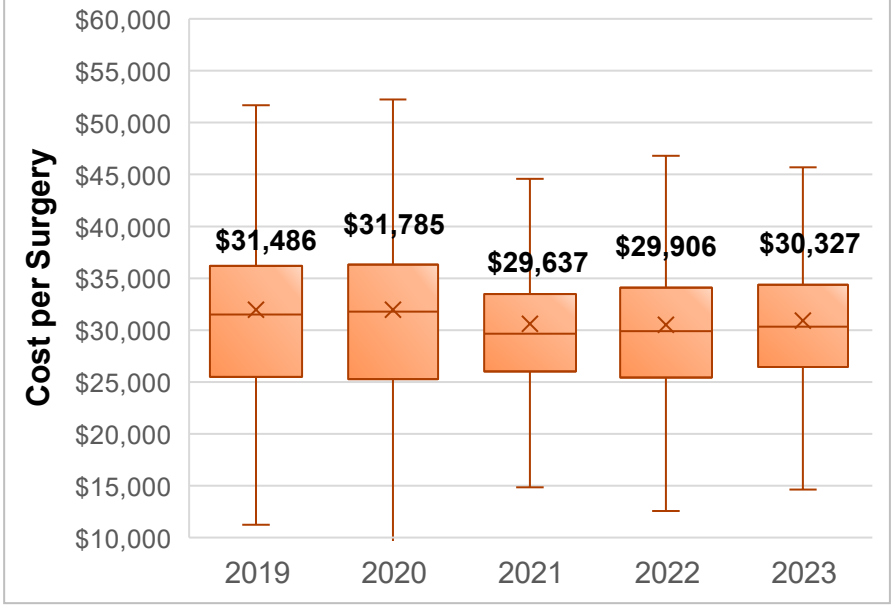
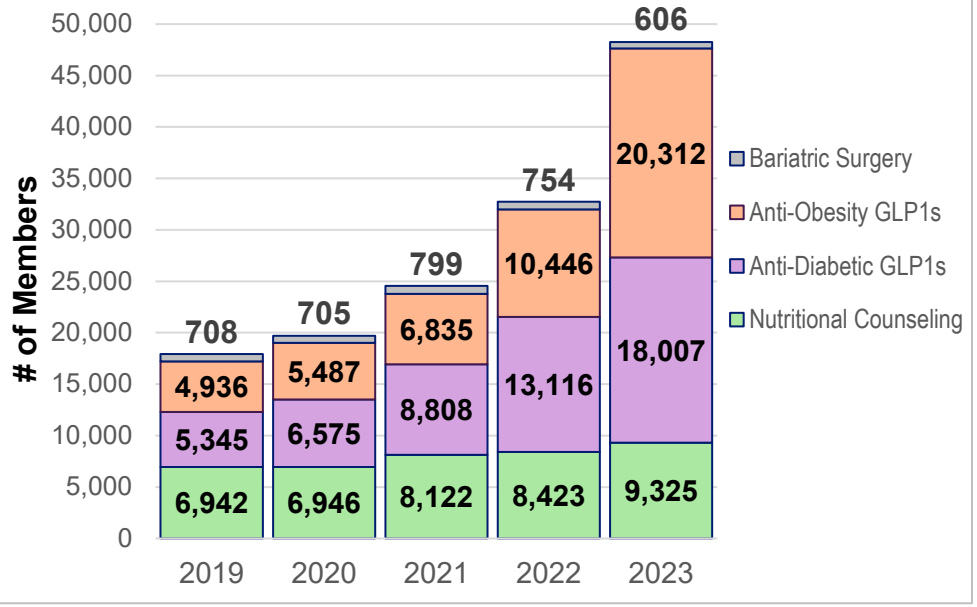
Bariatric Surgery Costs



Obesity Treatment Utilization



Observations

- As obesity becomes a major cost driver for the Plan it is important to review available treatment options for members.
  - Nutritional counseling was the most popular treatment type in 2019 with 6,942 members utilizing this option. However, GLP-1s are now the most popular obesity treatment option by far. In order for GLP-1s to be most effective, it is important to complement the drugs with lifestyle modifications, including diet and exercise.
- Bariatric surgery is the most effective method of weight loss but is generally only accessible for members considered morbidly obese. The popularity of the surgeries has decreased with the rise of GLP-1s. The cost for these surgeries has been relatively stable over the experience period but can fluctuate depending on the quality of the provider and presence of complications. In 2023, the average cost of surgery was $30,327 but the 25th to 75th percentile of costs ranged from about $25,000 to $35,000. For comparison purposes, the cost for a monthly supply of GLP-1s averages approximately $900 for the anti-diabetic versions and $1,350 for the anti-obesity versions, prior to rebates.

Diabetes, Cardiovascular Disease, and Obesity

Mental Health Comorbidities

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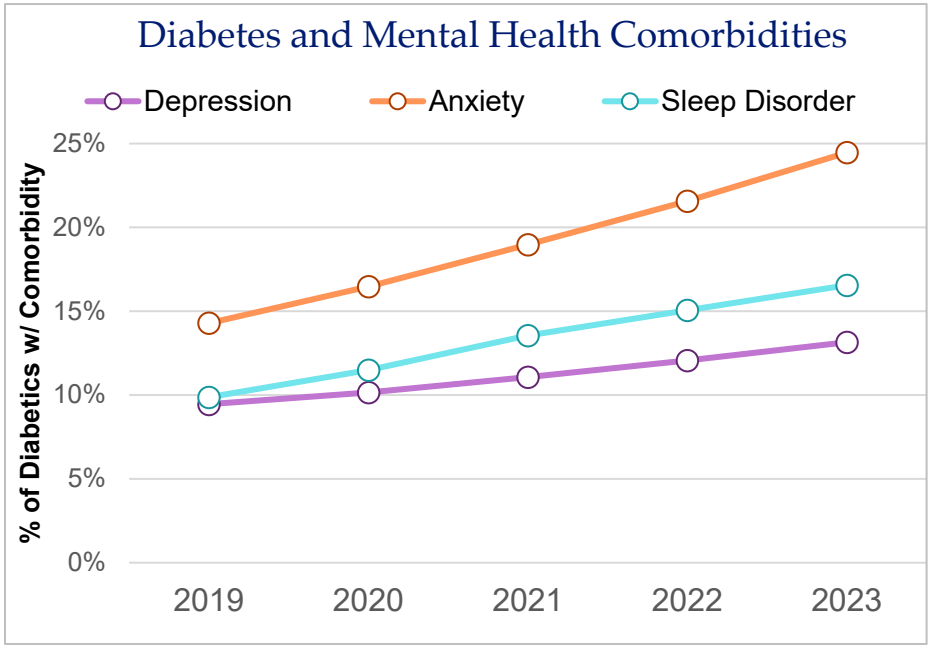
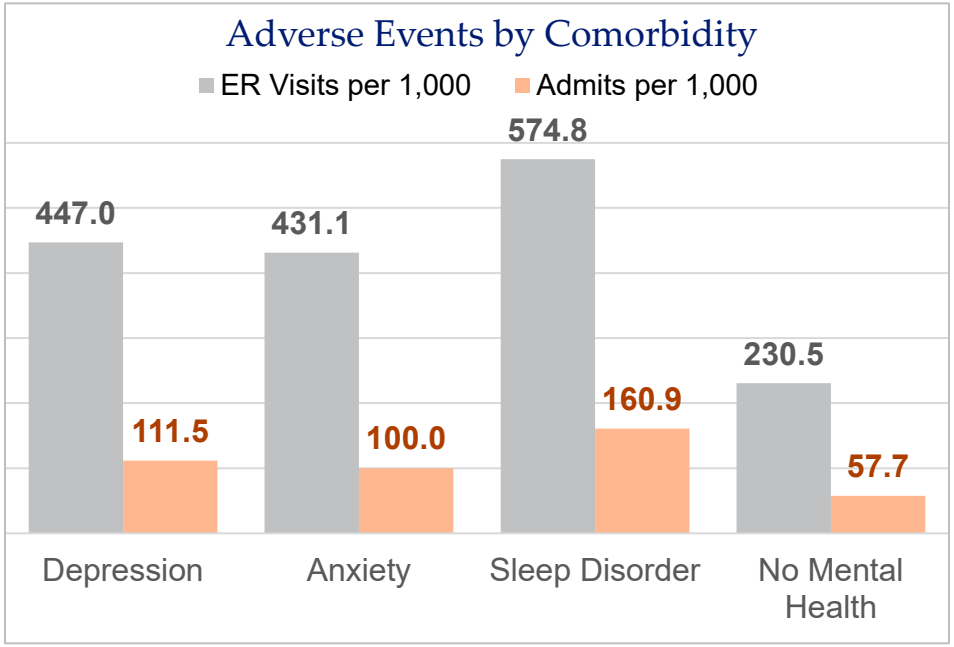


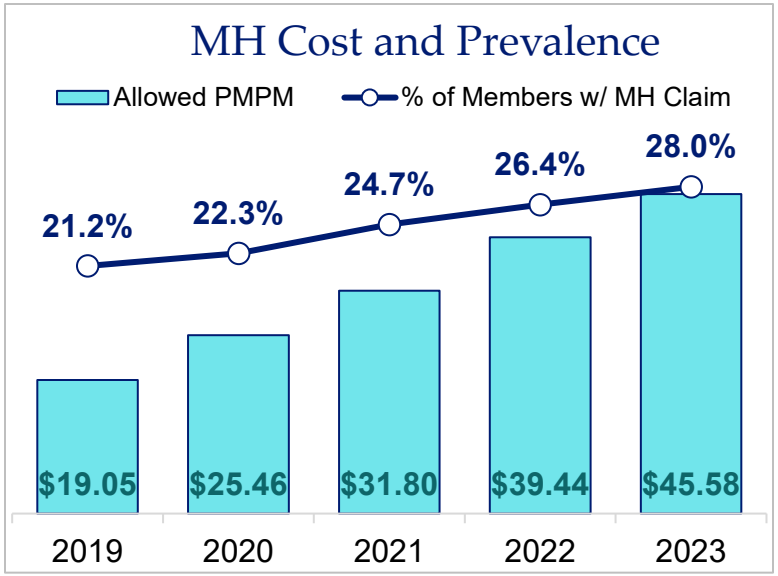


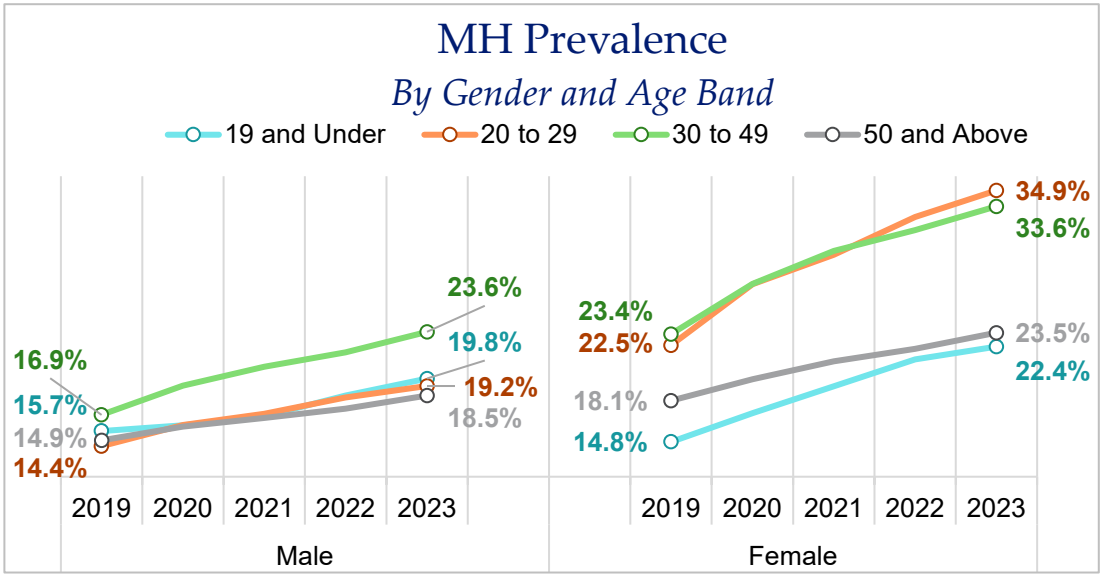
Observations

- When considering improvements in diabetes management, it is important to also factor in common mental health comorbidities that should be managed alongside diabetes.
  - The most common mental health conditions among the Plan's diabetics are anxiety, sleep disorders, and depression, in that order.
  - The prevalence of mental health comorbidities continues to increase significantly. In 2019, 52% of the Plan's diabetics did not have a mental health comorbidity versus only 39% in 2023.
- Sleep disorders have been a trend driver across Segal's book-of-business and can result in worse outcomes if not managed effectively. Diabetics with sleep disorders had significantly more ER visits per 1,000 and admissions per 1,000 than diabetics without this condition present.

Mental Health

Cost and Prevalence





Observations

- Mental health treatment has been a major trend driver for the Plan during the last several years, partly due to increased access to treatment as a result of the pandemic.
  - Prior to the pandemic in 2019, 21.2% of members had a mental health-related encounter versus 28% of members in 2023, representing a 32% increase.
  - During that time, mental health claims increased from $19.05 PMPM to $45.58 PMPM, an increase of 139% (24% annualized).
  - Not included here are the secondary costs of untreated mental health disorders, which often cause other conditions to be more difficult and more expensive to treat.
- Female members aged 20-29 now have the highest prevalence of mental health disorders at 34.9%. Prior to the pandemic, this cohort had the second highest prevalence, behind females aged 30-49, at 22.5%.

Mental Health

Medical Cost and Prevalence by Place of Service

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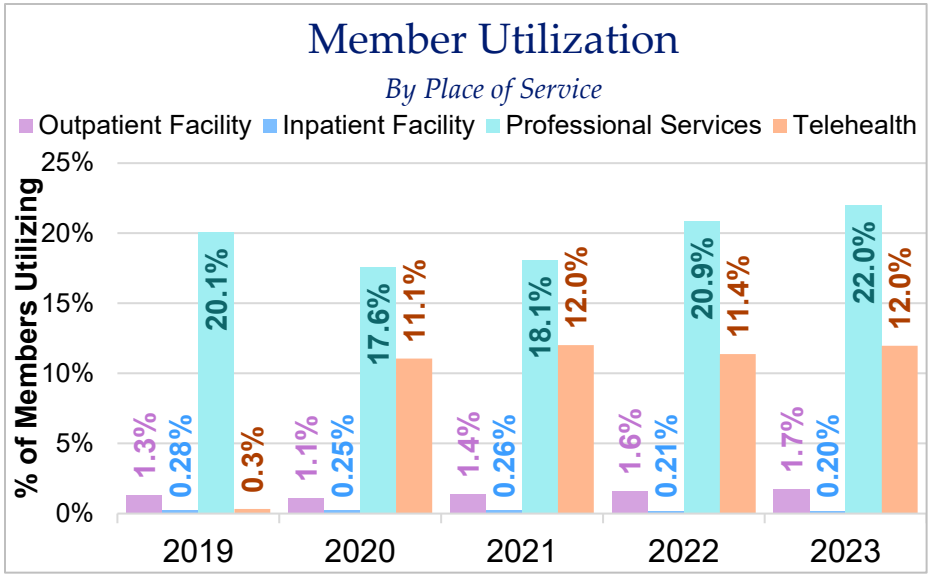

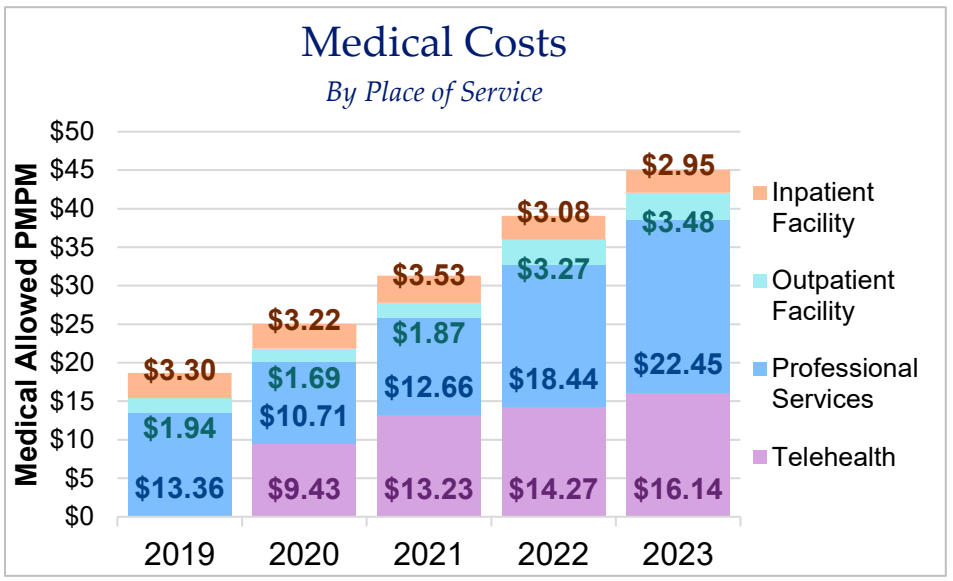

Observations

- Utilization of professional services has increased 9.4% since 2019. However, there has been a significant shift to telehealth. When combining both in-person professional services and telehealth, utilization has increased 33%, the highest of all places of service.
- To better manage costs associated with telehealth and professional services, investigate how provider quality and outcomes are tracked within the network. Higher-quality therapists greatly reduce the number of counseling sessions required for resolution of symptoms, which can reduce costs.
- Inpatient hospital utilization for mental health services has decreased the most during the experience period at -28% (from 0.28% in 2019 to 0.20% in 2023). However, outpatient utilization has increased 30% since 2019, which is similar to the increase experienced in professional services (traditional and telehealth).
- The change in spend in each place of service is more pronounced. Medical allowed PMPM in the professional setting (in-person and traditional) has increased 191% since 2019, outpatient has increased 56%, and inpatient has increased 3%. The high trend in the professional setting is encouraging as more lower-acuity / preventive care is taking place, which should result in more favorable long-term outcomes.

Mental Health

Medical Cost by Place of Service for Top Trend Drivers

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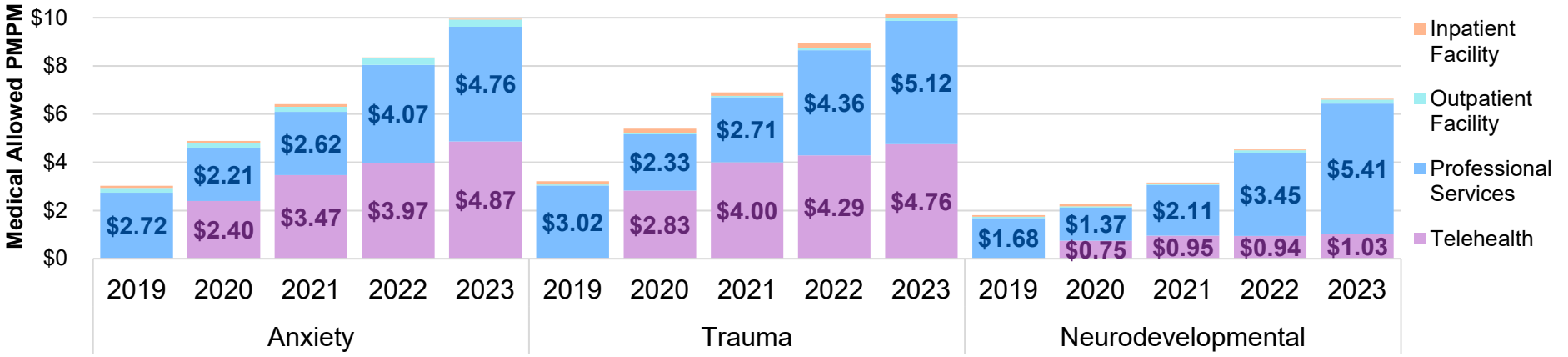
Medical Costs for Top Trend Drivers

By Place of Service



Observations

- The chart above breaks down utilization of the top-3 mental health trend drivers by place of service.
- The majority of spend for all three conditions is in the professional (in-person and telehealth) setting, which is a good sign. Very little spend occurred in the inpatient and outpatient hospital settings during the experience period.
- Inpatient hospital utilization for mental health services has mainly been driven by depressive disorders, eating disorders, bipolar disorders, and schizophrenia disorders, which are not included on this page.

Tobacco, Asthma, COPD, and Respiratory Cancer

Cost and Prevalence

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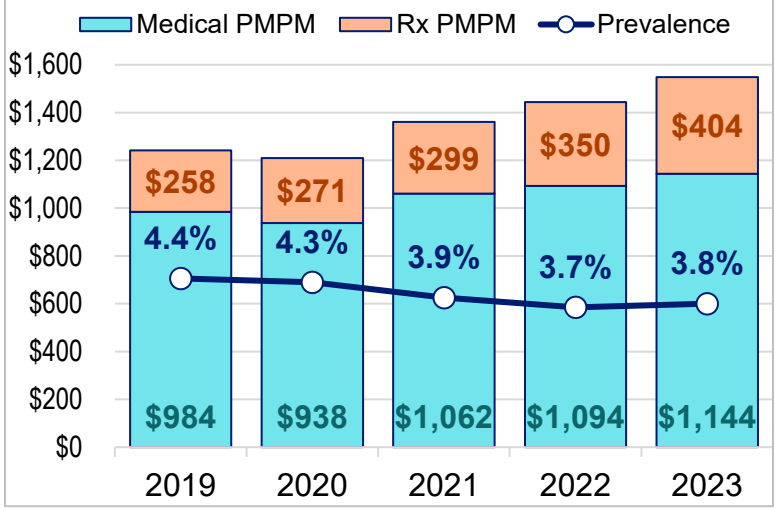
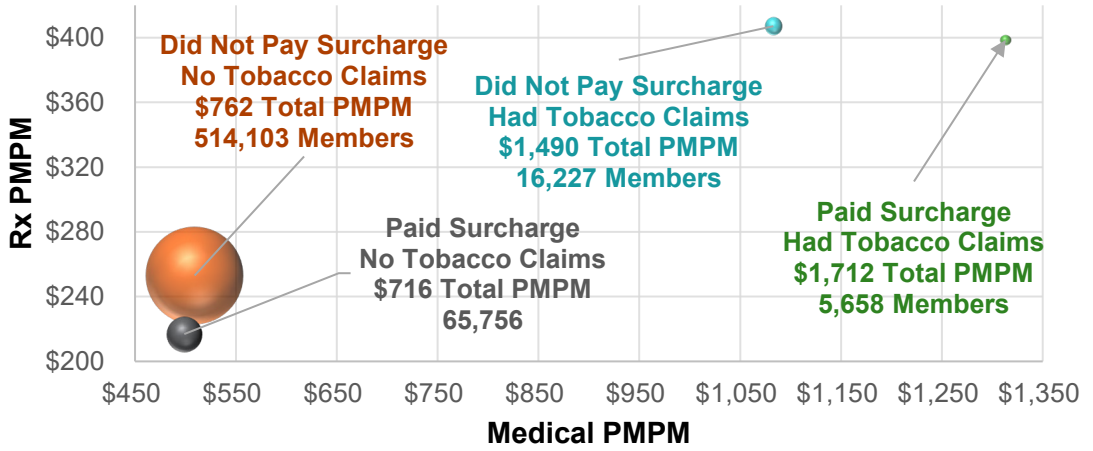
Tobacco Cost and Prevalence



Tobacco Surcharge Groups



Observations

- The Plan rewards members for abstaining from tobacco use by reducing monthly premiums by $60 for completing a tobacco attestation. However, if a member attests to being a user, they may still be eligible for the credit if they undergo at least one tobacco cessation counseling session within 90 days of enrollment. Furthermore, if members do not fill out the form correctly, they are defaulted to being a tobacco user and thus paying the surcharge. The results of the 2023 attestation are as follows:
  - 5,658 members (4,866 employees)[1] paid the surcharge and also had recent tobacco-related medical claims. These members cost $1,712 PMPM.
  - 16,227 members (12,926 employees)[1] did not pay the surcharge but had recent tobacco-related medical claims. These members cost $1,490 PMPM, which is much closer to identified tobacco users, suggesting that they did not fill out the attestation correctly.
  - 65,756 members (45,315 employees)[1] paid the surcharge but did not have recent tobacco-related medical claims. These members cost $716 PMPM, which is much closer to non-users than identified tobacco users, suggesting that they may not be tobacco users and are being penalized for non-compliance.
  - 514,103 members (318,689 employees)[1] did not pay the surcharge and did not have any recent tobacco-related medical claims. These members cost $762 PMPM.

[1] A member is any individual covered by the Plan during the year and thus will exceed the average monthly membership in the Plan. Further, If an employee attests to using tobacco, all covered dependents of that employee will be included in the cohort that pays the surcharge.

Tobacco, Asthma, COPD, and Respiratory Cancer

Asthma & COPD

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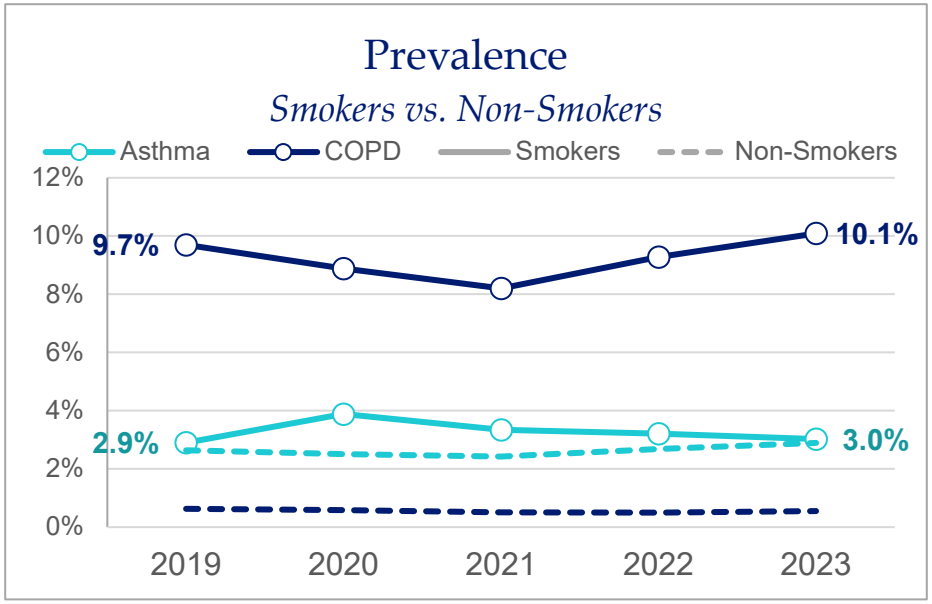
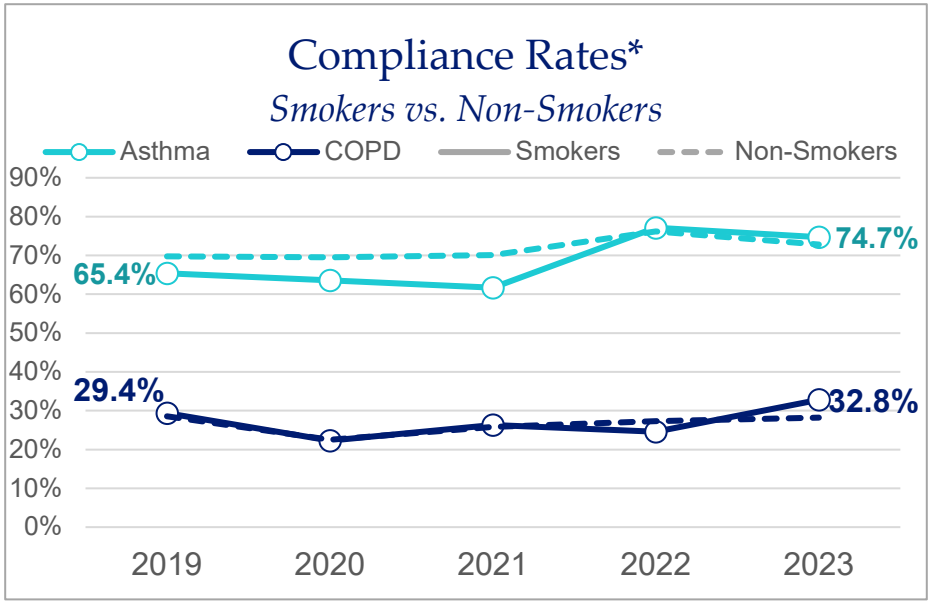




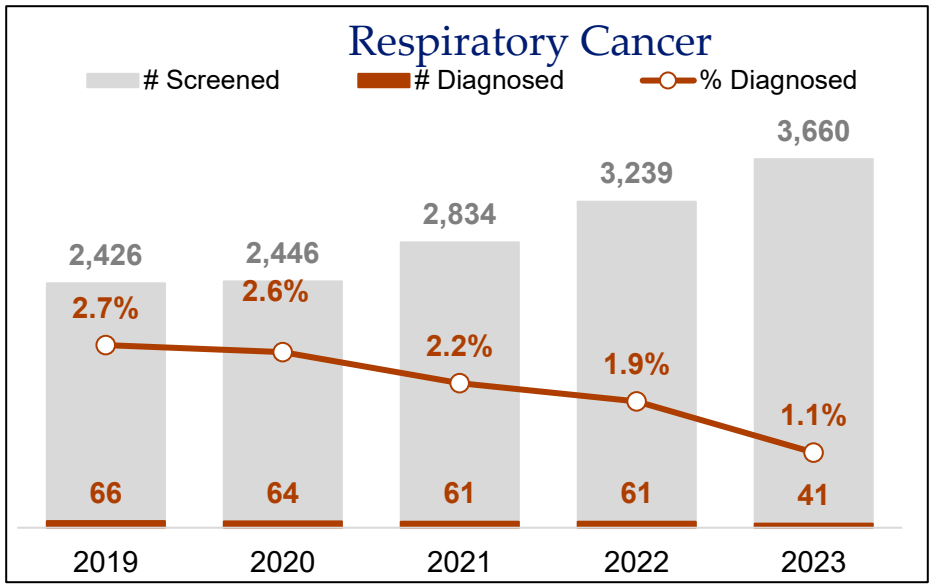
Observations

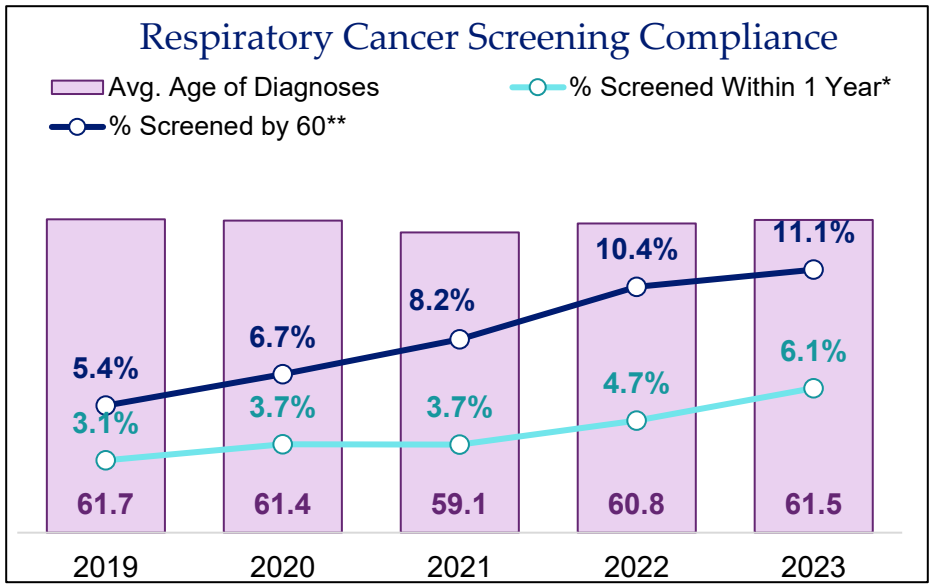
- Smoking is a significant risk factor in developing chronic obstructive pulmonary disorder (COPD). Approximately 10.1% of known tobacco users in the Plan had COPD in 2023, up from 9.7% in 2019.
  - About 0.5% of the population have been diagnosed with COPD and do not have a claims history suggesting tobacco use.
- Prevalence for both asthma and COPD have increased since 2019. As tobacco rates decrease, it's expected that prevalence for these conditions will decrease correspondingly but may take several years to manifest.
- Members with COPD are recommended to get a spirometry test every year. However, compliance is low in the Plan. Less then 1/3 of COPD members got this recommended test in 2023, which is an improvement from 29% in 2019.
- Asthmatics are recommended to get inhaled corticosteroids and/or leukotriene inhibitors each year to manage their condition and overall compliance is high at 75%. Compliance has also improved significantly from 65% in 2019.

**Compliance rates for asthmatics include getting inhaled corticosteroids and/or leukotriene inhibitors each year. Compliance rates for members with COPD include annual spirometry testing.*

Tobacco, Asthma, COPD, and Respiratory Cancer

Respiratory Cancer





Observations

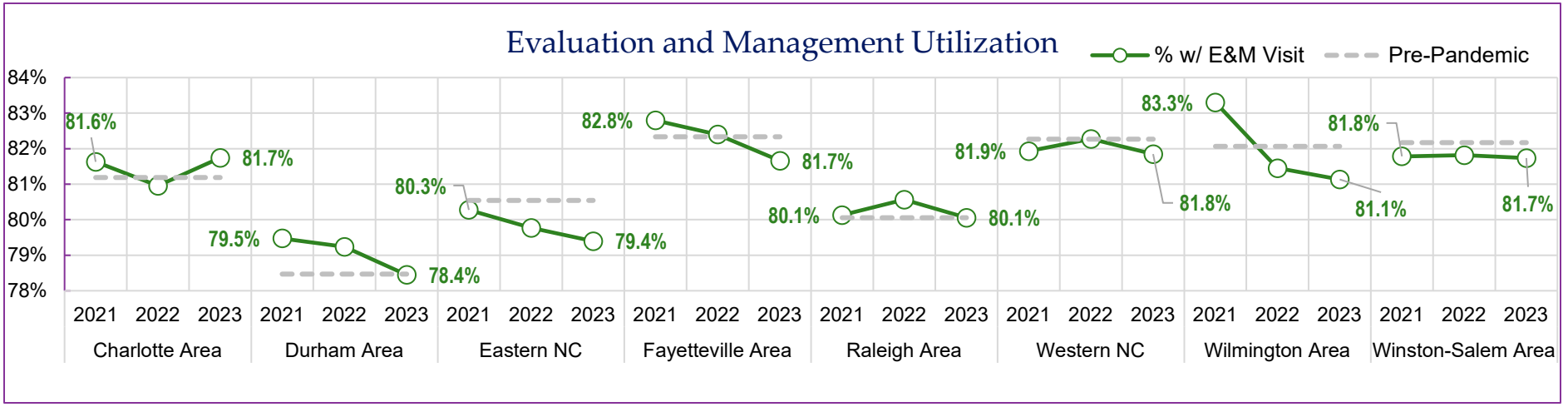
- Smoking is also a significant risk factor in developing respiratory cancers. It is recommended that members aged 50 – 80 who have a 20 pack-year smoking history who currently smoke or who have quit in the last 15 years receive an annual low-dose CT scan.
- Compliance with this screening have increased significantly during the experience period. 2,426 members had this screening in 2019 and that increased to 3,660 members in 2023.
  - The percent of tobacco users receiving the screening within one year of turning 50 increased from 3.1% in 2019 to 6.1% in 2023.
  - The percent of tobacco users who have yet to be screened by age 60 has decreased from 95% to 89%.

**Screened within one year of turning 50.*

***Only includes members enrolled in the Plan for at least one year prior to turning age 60.*

Wilmington Health Pilot

Evaluation and Management Utilization by Region



Observations

- Utilization of evaluation and management (E&M) visits in the professional setting is high at over 80% for most regions but is below pre-pandemic levels for all regions except Charlotte.
  - The pre-pandemic line (grey dotted line) represents E&M utilization rates in 2019.
- Western NC had the highest E&M utilization rate in 2023 of 82% whereas Durham had the lowest E&M utilization rate of 78.4%.
- The Wilmington Area has a pilot program in place to increase PCP engagement and the quality-of-care members receive through their PCP. The program does not appear to have increased engagement in this region as overall engagement has fallen from 83% in 2021 to 81% in 2023. However, 2021 was an exceptionally high year of engagement for this region, likely due to pent-up demand from delayed care during 2020.

See Appendix for a map of North Carolina broken down into the regions above.

Wilmington Health Pilot

Cost and Risk by Region (CY 2023)

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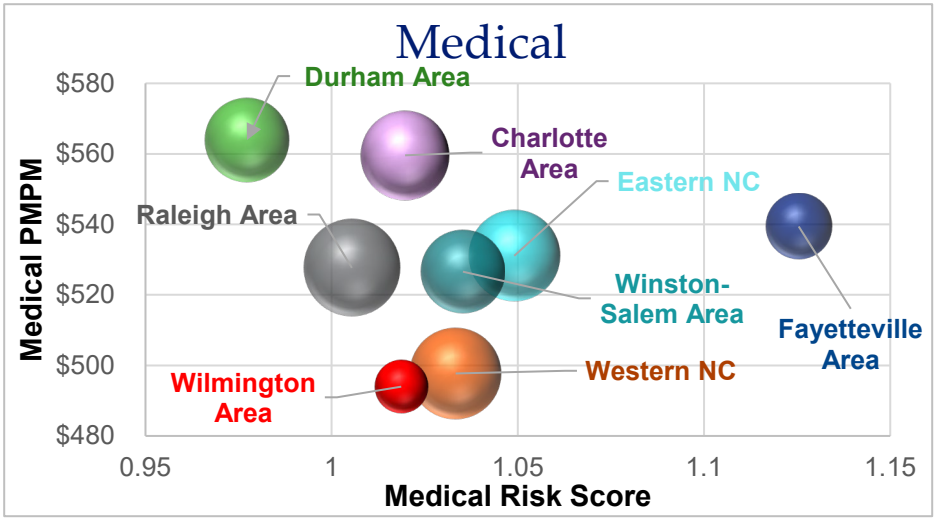

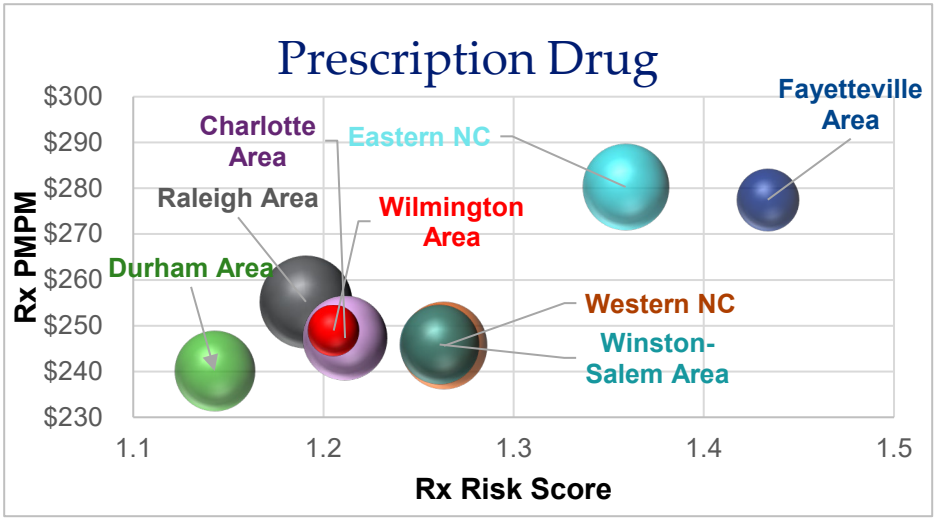

Observations

- In order to review which regions are running more efficiently, it is important to monitor cost and risk in each region. Regions that are being managed well will have lower costs than their risk scores indicate.
  - On the medical side, Fayetteville, Western NC, and Wilmington have the highest efficiency scores (i.e., costs below what their risk scores indicate).
  - On the prescription drug side, Fayetteville, Western NC, and Winston-Salem have the highest efficiency scores.
  - Durham and Raleigh have the lowest efficiency scores, which may be due to higher costs of healthcare in those regions.

Wilmington Health Pilot

Cost and Risk Trends: Wilmington vs. All Others

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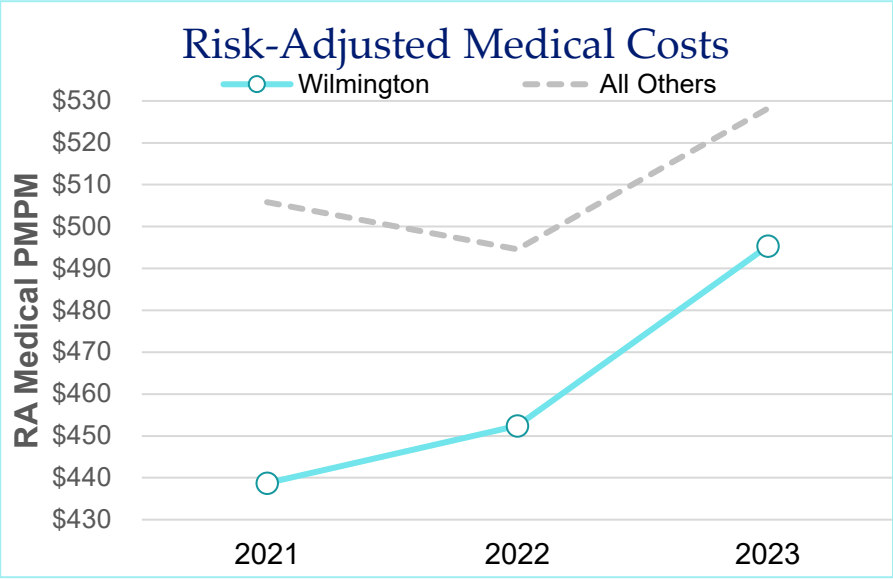
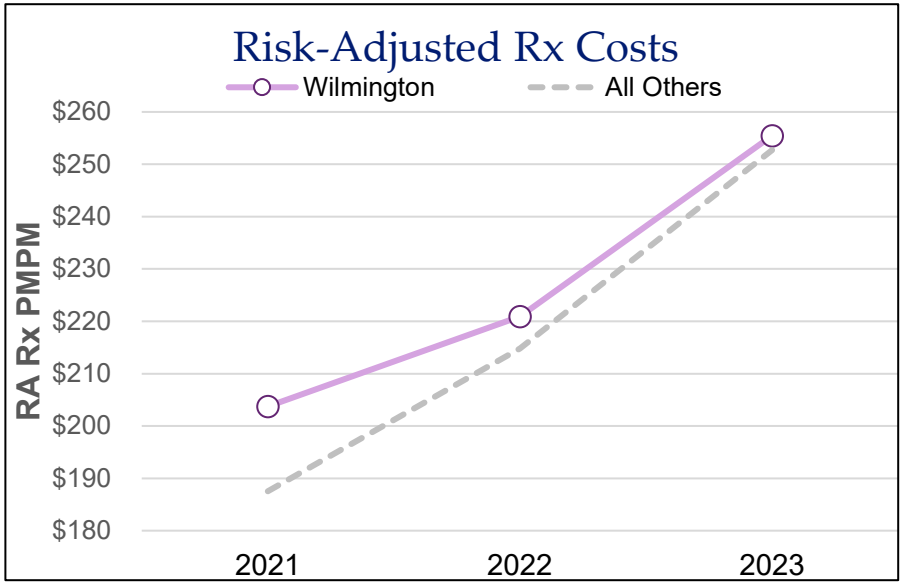


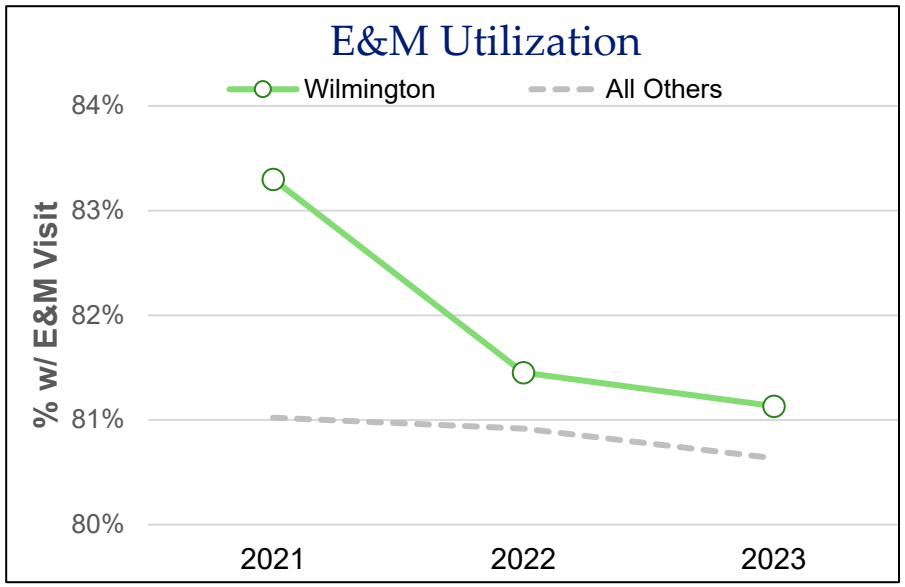


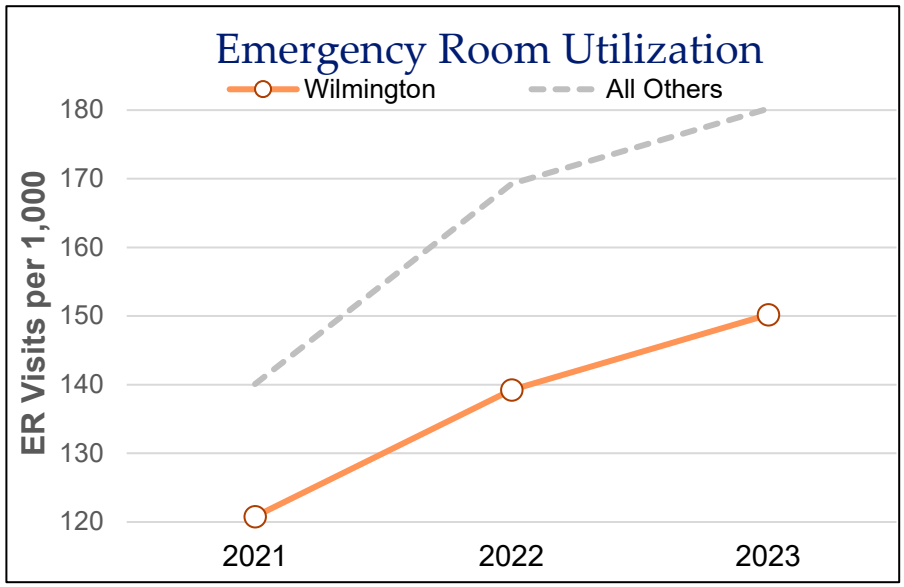
Observations

- To gauge whether the pilot program in Wilmington is having a positive effect on member costs, we have compared risk-adjusted medical and prescription drug costs for the region compared to the rest of the population.
- Risk-adjusted medical costs are lower in Wilmington, suggesting that the region is running more efficiently. However, the difference was greater prior to program implementation. Wilmington was $67 PMPM less expensive on a risk-adjusted basis in 2021 versus $33 PMPM in 2023.
- Risk-adjusted prescription drug costs are slightly higher in Wilmington. However, Wilmington was $16 PMPM more expensive on a risk-adjusted basis in 2021 versus only $2 PMPM in 2023.

Wilmington Health Pilot

E&M and ER Utilization Trends: Wilmington vs. All Others



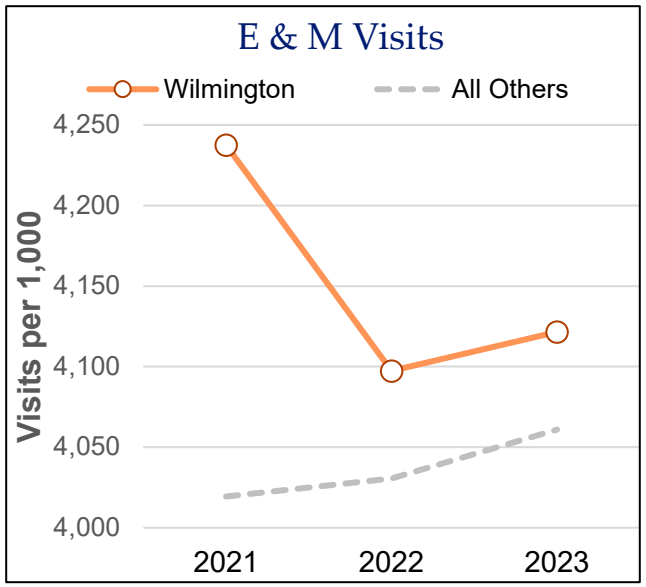


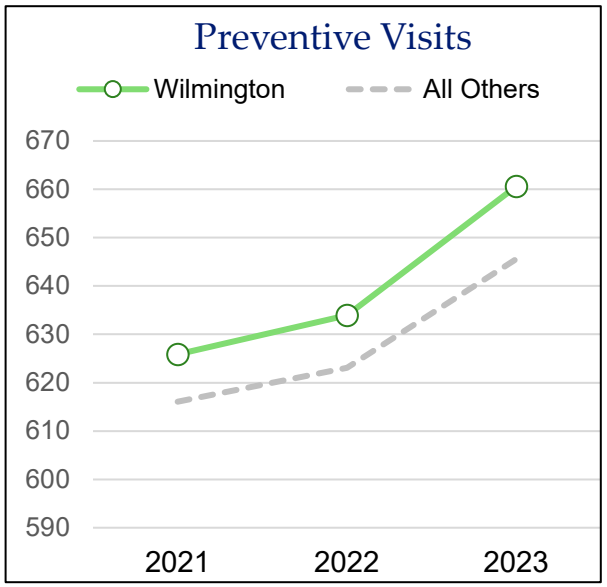
Observations

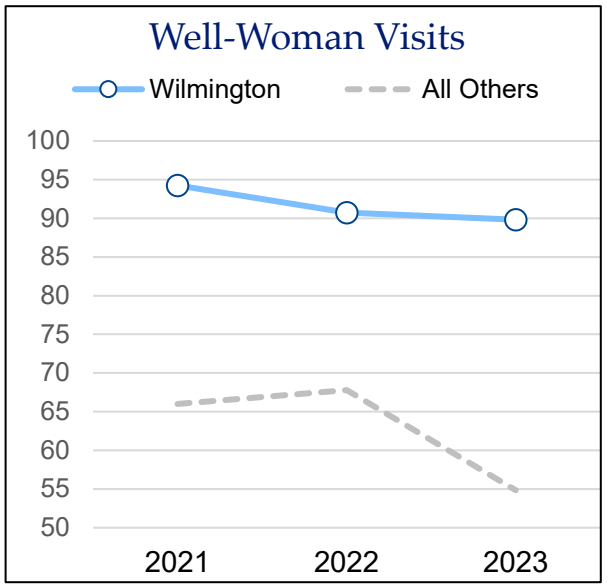
- Two other metrics used to gauge whether the pilot program in Wilmington is having a positive effect on members is evaluation and management (E&M) utilization and ER utilization. Lower E&M utilization often results in higher ER utilization where care is significantly more expensive for the Plan and members.
- Wilmington has higher utilization of E&M services than the rest of the regions. However, the difference was greater prior to program implementation.
- Wilmington has lower emergency room utilization than the rest of the group and experience for Wilmington has improved relative to the rest of the group since program implementation.

Wilmington Health Pilot

Preventive Care Trends: Wilmington vs. All Others







Observations

- Evaluation and management (E & M) visits, preventive visits, and well-woman visits, are additional quality of care metrics that should be improved through the pilot program and should be monitored.
- For E & M visits, utilization was higher for Wilmington by 61 visits per 1,000 in 2023. However, the difference was greater in 2021 by 218 visits per 1,000.
- Members in Wilmington are also utilizing preventive visits at greater rates than the other regions. Wilmington had 10 more preventive visits per 1,000 than the other regions in 2021. The difference increased to 15 more by 2023.
- Female members in Wilmington are utilizing well-woman visits at greater rates than other regions. Wilmington had 28 more well-woman visits per 1,000 than the other regions in 2021, which increased to 35 more visits per 1,000 by 2023.

Wilmington Health Pilot

Preventive Care Trends: Wilmington vs. All Others

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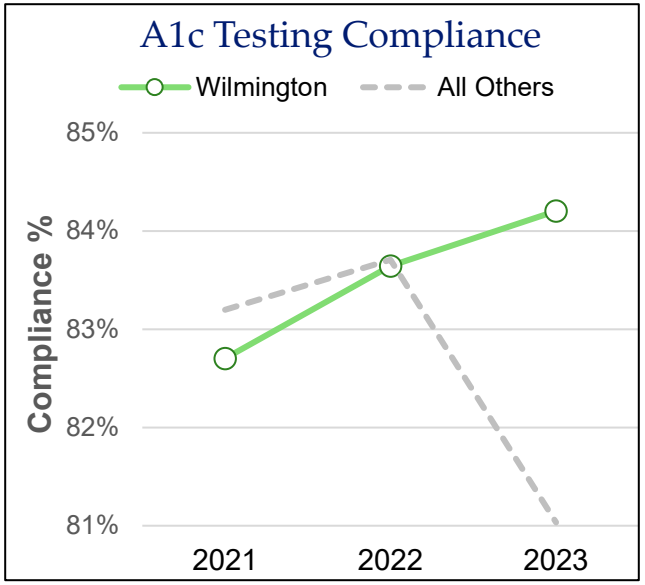

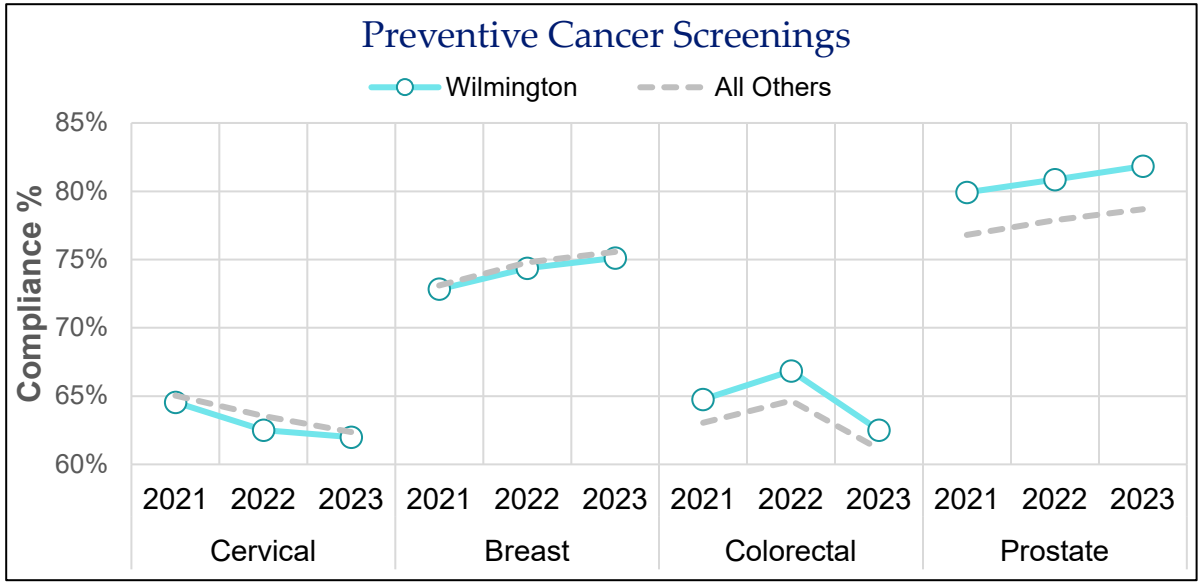

Observations

- The last metrics used to gauge whether the pilot program in Wilmington is having a positive effect on members A1c testing compliance for diabetics and preventive cancer screenings.
- The pilot program appears to be having a positive effect on A1c testing compliance. Diabetics in Wilmington continue to improve compliance rates, whereas compliance rates for the other regions decreased in 2023. The other regions had high compliance than Wilmington in 2021. However, in 2023, Wilmington had a compliance rate of 84.1% versus 80.9% for the other regions.
- The benefits from the pilot program on adherence to preventive cancer screenings is less clear. Wilmington has higher compliance rates for colorectal and prostate cancers. However, the difference was similar prior to program implementation. Screening rates for cervical and breast cancer are slightly lower for Wilmington, but the difference is consistent with pre-program experience. Note that most individuals do not need to get screened every year and it may take several years for improvements in screening compliance to manifest.

Biosimilar Drugs

Pharmacy Benefit

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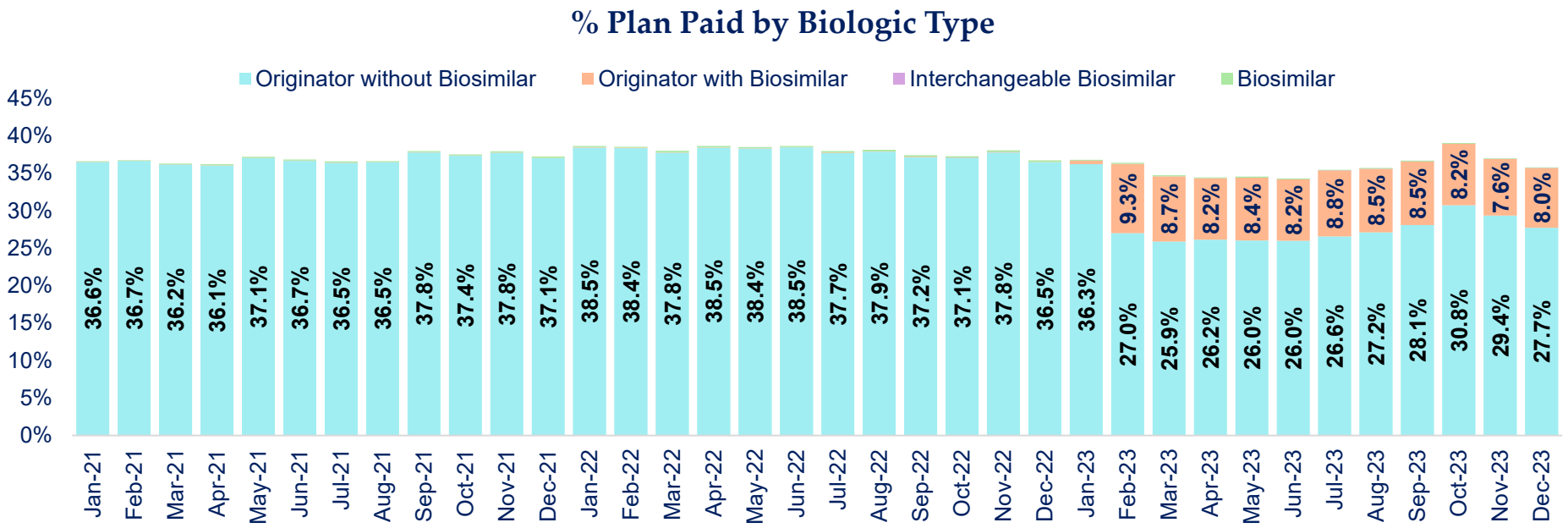

Observations

- Biologic medications account for a significant percentage of pharmacy costs paid for by the Plan, ranging from 37% in 2021 to 35.9% in 2023
- Biosimilar availability has been relatively limited under the pharmacy benefit. In 2021 and 2022, between 99.6% and 99.4% of all biologic spend was associated with a biologic agent without biosimilar availability
  - While usage has increased, biosimilars only accounted for 0.3% of all Plan spend on biologics in 2023
- However, the % of Plan spend associated with biologics with a biosimilar significantly increased in 2023 with the availability of multiple Humira biosimilars

Biosimilar Drugs

Pharmacy Benefit

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Biologic Group	Medication	Category	2021	2022	2023
Rituxan	Ruxience	Biosimilar	$7,311	$35,757	$104,466
	Rituxan (Biosimilar released)	Originator	$0	$12,951	$16,387
Remicade	Inflectra	Originator	$69,434	$0	$7,884
	Remicade (Biosimilar released)	Originator	$179,246	$562,340	$744,334
Neupogen	Zarxio	Originator	$15,996	$2,504	$2,430
	Nivestym	Originator	$256,407	$329,763	$184,005
	Neupogen (Biosimilar released)	Originator with Biosimilar	$18,188	$21,922	$12,589
Neulasta	Ziextenzo	Originator	$1,108,196	$1,887,926	$905,014
	Udenyca	Originator	$71,144	$0	$41,333
	Neulasta (Biosimilar released)	Originator with Biosimilar	$12,899	$0	$0
	Nyvepria	Originator	$0	$0	$50,515
	Fylnetra	Originator	$0	$0	$68,598
Lucentis	Lucentis (Biosimilar released)	Originator with Biosimilar	$0	$9,943	$6,511
	Lucentis (Prior to biosimilar release)	Originator without Biosimilar	$0	$1,657	$0
Lantus	Lantus (Biosimilar released)	Originator with Biosimilar	$32,924	$91,937	$76,497
	Lantus (Prior to biosimilar release)	Originator without Biosimilar	$117,382	$0	$0
	Semglee	Interchangeable Biosimilar	$0	$535	$4,985
Humira	Humira (Biosimilar released)	Originator with Biosimilar	$0	$0	$120,608,951
	Humira (Prior to biosimilar release)	Originator without Biosimilar	$123,303,448	$130,713,938	$10,542,270
	Amjevita	Biosimilar	$0	$0	$61,254
Epogen/Procrit	Epogen/Procrit (Biosimilar released)	Originator with Biosimilar	$0	$0	$0
	Retacrit	Biosimilar	$13,768	$20,566	$39,586
Total			**$125,206,342**	**$133,691,740**	**$133,477,608**

Observations

- 8 medication groups with member utilization currently have approved biosimilar products available
- A few medication groups have had more significant biosimilar utilization, such as Ruxience within the Rituxan group, Retacrit in the Epogen/Procrit group, and Amjevita in the Humira group.
- Switching to biosimilars under same settings can result in significant potential savings.
  - While too soon to know the typical average cost of therapy, the cost of Amjevita was just $6,452 for a two-pen, 4-week supply (2 doses) compared to the average 28-day cost of Humira - $7,589
  - The average 28-day cost of Semglee, a biosimilar of Lantus was $173 in 2023 – nearly 51% lower than its originator.

Biosimilar Drugs

Medical Benefit

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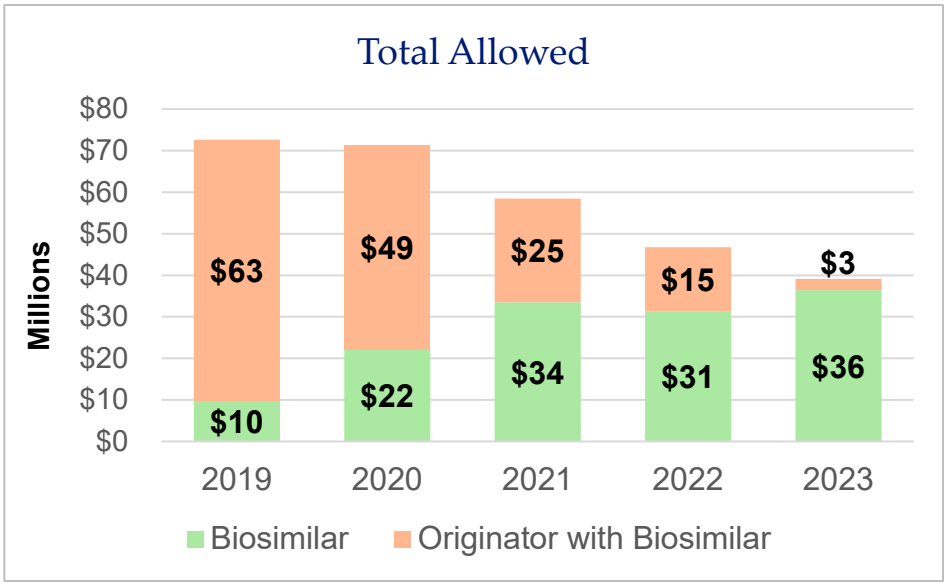
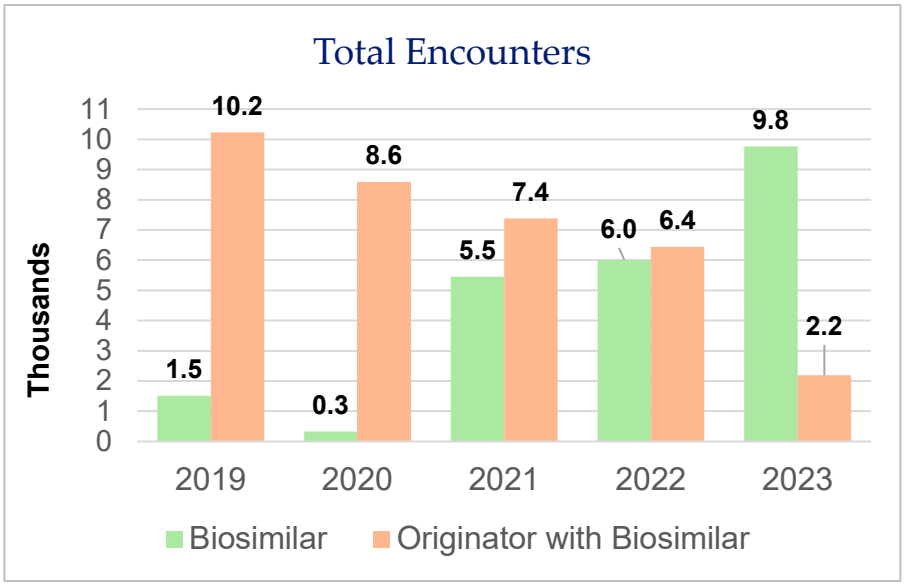
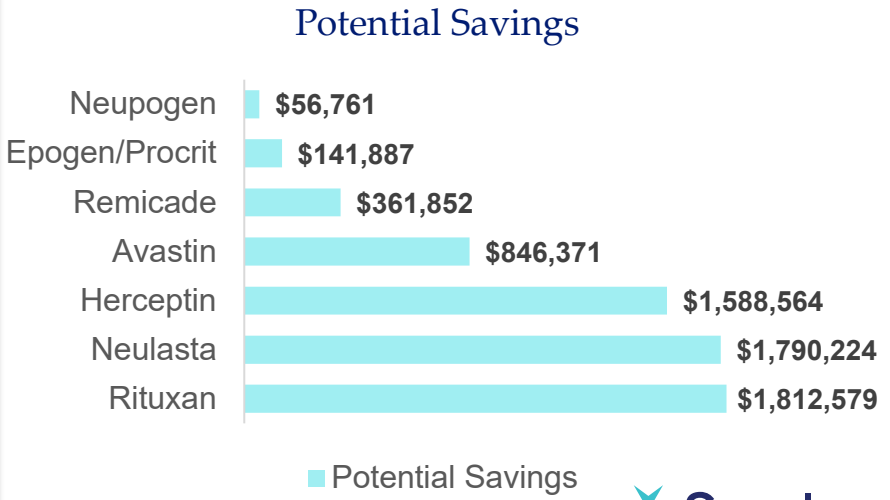




Observations

- For biologics with biosimilars now available, plan spend has shifted away from originators, decreasing from 86.8% to 6.9%. Over this time, total spend on these drug groups has decreased from $72,607,935 to $39,135,714 (a change of 46.1%). $63,028,901 was spent on originators in 2019 compared to $2,710,745 in 2023
- Biosimilar utilization has improved since 2019 growing to 93.1% from 13.2%.
- Even with usage of biosimilars, there can be price variation among the biosimilar products available within a biologic category. Based on 2023 costs, if the lowest cost biosimilar was used in all cases within the same setting (office vs outpatient hospital), the potential savings could be $6,598,238.



Appendices

Population Risk Summary: By Status

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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Actives

	CY 2023											
		% of Total		Medical			Prescription Drug			% Change from Prior		
Risk Group	Members	Members	Allowed	Allowed (millions)	PMPY	Risk Score	Allowed (millions)	PMPY	Risk Score	Members	Medical PMPY	Rx PMPY
Non-Utilizers	40,145	9.0%	0.0%	$0.0	$0	0.12	$0.0	$0	0.14	20.4%	0%	0%
Healthy	90,617	20.4%	3.9%	$102.4	$1,130	0.26	$64.4	$711	0.41	-15.4%	27.6%	33.4%
Minor Acute	44,233	10.0%	2.8%	$91.5	$2,068	0.66	$29.8	$674	0.46	-11.0%	-2.4%	1.7%
Major Acute	23,847	5.4%	4.3%	$158.0	$6,624	1.62	$26.8	$1,123	0.69	13.1%	-14.0%	4.5%
Single Chronic	96,805	21.8%	14.9%	$478.1	$4,938	1.09	$164.1	$1,695	0.95	0.2%	2.7%	5.8%
Chronic w/ Comorbidities	182,596	41.2%	61.8%	$1,638.6	$8,974	1.67	$1,029.8	$5,640	2.37	6.0%	3.2%	14.8%
Malignancies	4,515	1.0%	7.4%	$260.0	$57,582	2.47	$59.3	$13,124	3.04	3.0%	1.8%	6.5%
Catastrophic	1,037	0.2%	5.0%	$196.5	$189,453	9.78	$17.4	$16,731	5.19	14.5%	-3.3%	21.0%
Total	**483,794**	**100.0%**	**100.0%**	**$2,925.0**	**$6,046**	**1.09**	**$1,391.6**	**$2,876**	**1.29**	**-0.3%**	**6.7%**	**18.3%**

Non-Medicare Retirees

	CY 2023											
		% of Total		Medical			Prescription Drug			% Change from Prior		
Risk Group	Members	Members	Allowed	Allowed (millions)	PMPY	Risk Score	Allowed (millions)	PMPY	Risk Score	Members	Medical PMPY	Rx PMPY
Non-Utilizers	3,577	6.2%	0.0%	$0.0	$0	0.16	$0.0	$0	0.23	14.3%	0%	0%
Healthy	7,423	12.8%	1.8%	$7.9	$1,064	0.29	$7.0	$940	0.73	-15.2%	5.6%	25.2%
Minor Acute	2,300	4.0%	0.9%	$4.8	$2,073	0.71	$2.7	$1,180	0.71	-11.0%	-0.8%	36.1%
Major Acute	1,128	1.9%	1.2%	$7.9	$7,033	1.49	$2.1	$1,850	1.17	-0.1%	3.2%	-2.5%
Single Chronic	7,977	13.7%	6.1%	$35.5	$4,455	1.13	$15.4	$1,928	1.23	-2.4%	-1.3%	7.8%
Chronic w/ Comorbidities	37,466	64.6%	70.4%	$364.0	$9,715	1.83	$220.7	$5,890	2.78	3.3%	5.2%	12.7%
Malignancies	1,511	2.6%	12.0%	$77.2	$51,092	2.46	$22.5	$14,881	3.34	6.9%	2.5%	1.6%
Catastrophic	235	0.4%	7.6%	$57.8	$245,749	10.24	$5.3	$22,409	7.33	7.0%	13.7%	12.2%
Total	**61,616**	**100.0%**	**100.0%**	**$555.1**	**$9,010**	**1.46**	**$275.6**	**$4,472**	**2.11**	**-0.1%**	**8.6%**	**14.8%**

Appendices

Population Risk Summary: Cost and Risk by Subgroups (CY 2023)

North Carolina State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
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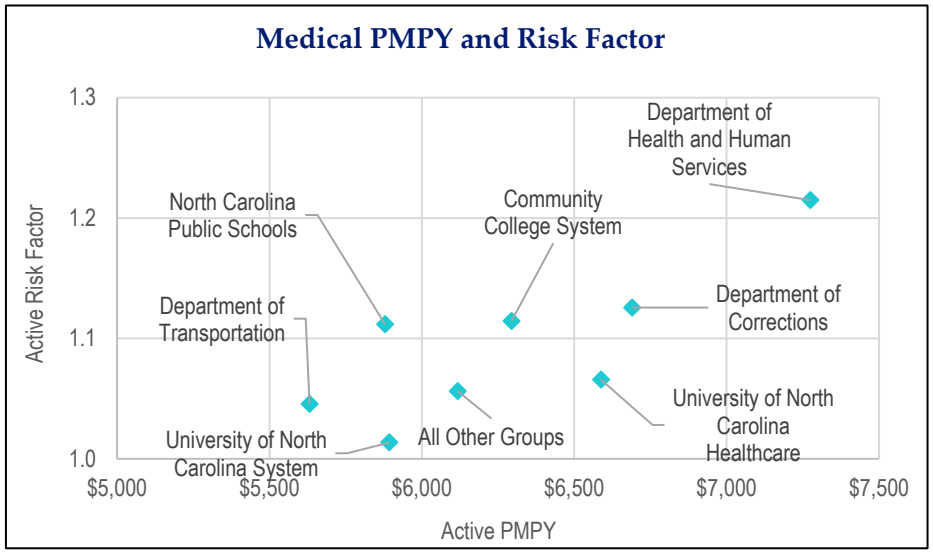
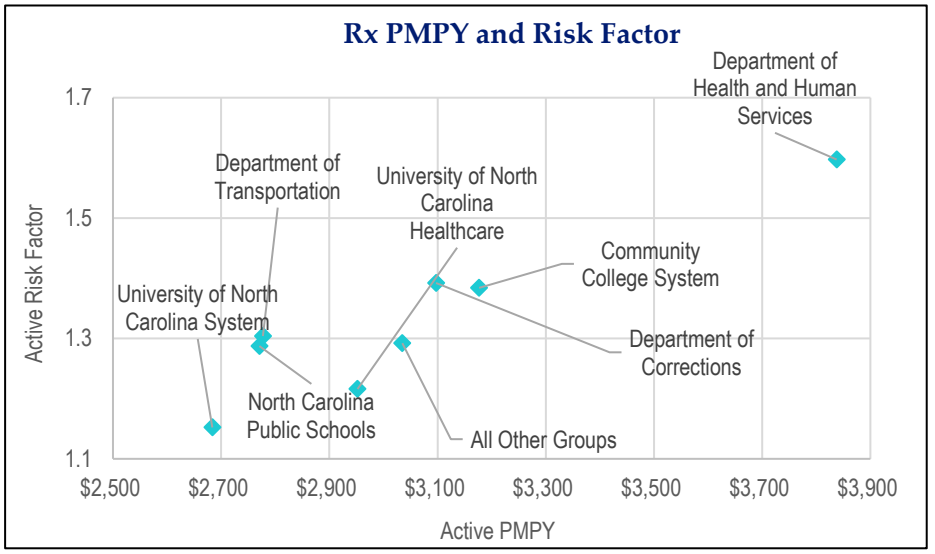
						Key Utilization (per 1,000)						
Subgroups	**Members**	**Medical PMPY**	**Medical Risk Factor**	**Rx PMPY**	**Rx Risk Factor**	**Inpatient Admissions**	**ER Visits**	**% ER Avoidable**	**Urgent Care Vistis**	**Physicals**	**Telehealth Visits**	**Rx Scripts**
1. North Carolina Public Schools	249,063	$5,879	1.112	$2,771	1.287	39.4	193	37%	215	666	1,212	11,988
2. University of North Carolina System	74,226	$5,893	1.013	$2,684	1.152	31.9	124	35%	174	693	2,142	10,255
3. Department of Corrections	25,423	$6,690	1.126	$3,097	1.392	44.0	327	40%	201	530	767	12,731
4. Community College System	24,150	$6,294	1.114	$3,177	1.384	35.6	166	35%	163	642	1,346	12,735
5. Department of Health and Human Services	18,548	$7,274	1.215	$3,838	1.597	42.6	231	38%	167	621	1,436	15,160
6. University of North Carolina Healthcare	15,836	$6,588	1.066	$2,952	1.216	41.8	183	37%	310	686	2,072	10,804
7. Department of Transportation	13,125	$5,631	1.046	$2,777	1.304	32.5	189	38%	151	547	722	12,224
8. All Other Groups	63,423	$6,117	1.056	$3,035	1.292	38.8	179	38%	186	605	1,281	12,427
9. Active Total	***483,794***	***$6,046***	***1.091***	***$2,876***	***1.288***	***38.2***	***188***	***37%***	***201***	***650***	***1,371***	***11,945***
10. Retirees (Non-Medicare)	***61,616***	***$9,010***	***1.458***	***$4,472***	***2.110***	***43.5***	***173***	***33%***	***149***	***585***	***767***	***19,116***
Total	**545,410**	**$6,381**	**1.132**	**$3,057**	**1.380**	**38.8**	**186**	**37%**	**195**	**642**	**1,302**	**12,755**





[1] Reflects the ratio of PMPY costs of members within the subgroup to the total enrolled population.

Appendices
Membership Migration (YoY)

North Carolina State Health Plan
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		CY 2023 - Member Count (% of Total within Risk Group)								CY 2022	
	Risk Group	Healthy	Minor Acute	Major Acute	Single Chronic	Chronic w/ Comorbidities	Malignant	Catastrophic	Terminated	Total Count	% of Total
CY 2022	New Members	14,244 (42%)	3,934 (12%)	3,045 (9%)	4,826 (14%)	5,082 (15%)	502 (1%)	94 (0%)	2,153 (6%)	**33,880**	**6.3%**
	Healthy	75,546 (52%)	17,547 (12%)	5,411 (4%)	21,513 (15%)	15,556 (11%)	2,958 (2%)	56 (0%)	6,747 (5%)	**145,333**	**27.0%**
	Minor Acute	14,110 (29%)	14,752 (30%)	7,241 (15%)	7,045 (15%)	2,384 (5%)	1,208 (2%)	17 (0%)	1,823 (4%)	**48,579**	**9.0%**
	Major Acute	2,921 (14%)	5,170 (25%)	6,305 (30%)	3,799 (18%)	1,243 (6%)	502 (2%)	34 (0%)	868 (4%)	**20,843**	**3.9%**
	Single Chronic	14,097 (15%)	1,164 (1%)	864 (1%)	51,278 (55%)	19,548 (21%)	2,966 (3%)	95 (0%)	3,399 (4%)	**93,410**	**17.3%**
	Chronic w/ Comorbidities	8,606 (5%)	115 (0%)	105 (0%)	6,744 (4%)	151,288(84%)	7,980 (4%)	580 (0%)	4,929 (3%)	**180,346**	**33.5%**
	Malignant	1,512 (10%)	649 (4%)	432 (3%)	2,276 (15%)	7,302 (47%)	3,065 (20%)	70 (0%)	340 (2%)	**15,647**	**2.9%**
	Catastrophic	29 (4%)	24 (3%)	45 (6%)	58 (7%)	386 (50%)	55 (7%)	101 (13%)	74 (10%)	**772**	**0.1%**
CY 2023	**Total Count**	**131,066**	**43,355**	**23,447**	**97,539**	**202,788**	**19,236**	**1,046**	**20,332**	**538,809**	
	% of Total	**24.3%**	**8.0%**	**4.4%**	**18.1%**	**37.6%**	**3.6%**	**0.2%**	**3.8%**	**100.0%**	

Observations

The table above shows how members in each of the mutually exclusive risk categories that were in the Plan in 2023 transitioned from 2022 to 2023.

- The percentages shown in each cell are additive across rows. Each percent represents the percent of members in the risk group row in 2022 that transitioned to the risk group column in 2023.
- Of the 33,880 new members in 2023, 42% were healthy versus 14% that had a single chronic condition and 15% that had multiple chronic conditions.
- 10% of catastrophic members in 2022 terminated from the Plan in 2023 and 50% had more than one chronic conditions.
- Of the 1,046 catastrophic members in 2023, 580 (55%) had more than one chronic condition.

Appendices
Top-20 CCSR Categories

North Carolina State Health Plan
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CCSR Category	CY2021			CY2022			CY2023			Annualized Trend[1]		
	Members	Medical Cost[2]	Cost PMPY	Members	Medical Cost[2]	Cost PMPY	Members	Medical Cost[2]	Cost PMPY	Members	Medical Cost[2]	Cost PMPY
Spondylopathies/spondyloarthropathy	40,960	$100.6	$2,455	41,085	$97.7	$2,378	41,949	$98.2	$2,341	2.0%	0.8%	-1.2%
Breast cancer	4,572	$93.5	$20,453	4,519	$96.0	$21,252	4,600	$96.3	$20,944	0.5%	2.1%	1.5%
Osteoarthritis	22,781	$86.2	$3,785	23,899	$87.4	$3,656	24,563	$94.3	$3,840	2.7%	2.2%	-0.6%
Benign neoplasms	51,159	$74.8	$1,461	53,012	$77.2	$1,455	56,587	$84.9	$1,501	3.1%	4.8%	1.7%
Musculoskeletal pain, not low back pain	93,008	$63.3	$680	93,529	$63.2	$676	96,650	$68.7	$711	0.9%	7.3%	6.3%
Trauma- and stressor-related disorders	31,021	$46.0	$1,482	33,370	$58.5	$1,753	35,945	$66.3	$1,844	8.9%	32.6%	21.7%
Anxiety and fear-related disorders	51,445	$43.6	$847	55,288	$55.7	$1,008	61,097	$66.2	$1,084	10.7%	33.4%	20.5%
Abdominal pain and other digestive/abdomen symptoms	52,938	$55.8	$1,053	52,149	$56.3	$1,080	53,802	$62.5	$1,161	-1.0%	2.4%	3.5%
Depressive disorders	31,054	$42.1	$1,356	32,821	$49.5	$1,508	36,723	$51.7	$1,409	7.5%	18.5%	10.2%
Neurodevelopmental disorders	23,618	$21.7	$919	26,176	$30.4	$1,161	29,701	$44.2	$1,489	8.8%	36.8%	25.7%
Cardiac dysrhythmias	9,099	$38.6	$4,243	9,291	$41.1	$4,420	9,184	$40.5	$4,412	2.6%	1.5%	-1.0%
Abnormal findings without diagnosis	82,020	$35.1	$428	85,712	$37.0	$431	90,506	$40.4	$446	2.6%	5.3%	2.6%
Biliary tract disease	4,171	$35.6	$8,542	4,188	$36.9	$8,813	4,488	$40.3	$8,977	2.1%	2.4%	0.3%
Chronic kidney disease	4,075	$46.5	$11,406	4,314	$37.6	$8,705	4,745	$39.7	$8,362	6.6%	-2.9%	-8.9%
Septicemia	1,312	$43.5	$33,134	1,185	$32.2	$27,184	1,430	$39.5	$27,630	3.3%	6.8%	3.4%
Nonspecific chest pain	24,160	$38.2	$1,583	23,424	$35.8	$1,528	24,263	$39.1	$1,612	-1.3%	-3.5%	-2.2%
Diabetes mellitus with complication	24,668	$38.6	$1,567	25,905	$35.8	$1,382	27,932	$37.8	$1,353	5.5%	3.7%	-1.7%
Calculus of urinary tract	7,042	$31.8	$4,520	7,248	$34.3	$4,736	7,673	$34.6	$4,505	1.3%	1.8%	0.5%
Obesity	40,652	$38.0	$935	41,703	$38.7	$928	56,477	$34.5	$610	10.7%	-0.2%	-9.8%
Liveborn	7,593	$34.2	$4,503	6,489	$34.3	$5,283	6,321	$33.5	$5,297	-4.8%	-1.5%	3.5%

Observations

The above table summarizes the top-20 CCSR categories by total allowed charges in 2023. Members can be in more than one CCSR category.

- The top-4 conditions with the highest trend are all mental health-related.

[1] Annualized trend reflects the average annual trend between CY 2019 and CY 2023.
[2] In millions

Appendices

Top-20 SegalRx Categories

North Carolina State Health Plan
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SegalRx Category	CY2021				CY2022				CY2023				Annualized Trend[1]			
	Members	Total Cost[2]	Cost PMPY	Cost per Script	Members	Total Cost[2]	Cost PMPY	Cost per Script	Members	Total Cost[2]	Cost PMPY	Cost per Script	Members	Total Cost[2]	Cost PMPY	Cost per Script
Antidiabetic Agents	28,472	$170.9	$6,001	$804	33,871	$206.7	$6,104	$874	39,959	$263.1	$6,584	$924	10.7%	21.1%	9.4%	11.5%
Disease-Modifying Antirheumatic Drugs	3,425	$183.5	$53,581	$8,011	3,507	$195.3	$55,690	$8,243	3,714	$203.7	$54,835	$8,475	2.4%	8.4%	5.9%	5.0%
Antiobesity Agents	10,427	$45.9	$4,401	$1,193	14,723	$80.0	$5,433	$1,244	26,576	$174.0	$6,547	$1,296	30.1%	51.4%	16.4%	7.5%
Antipsoriatics	2,474	$90.5	$36,568	$9,153	3,476	$117.9	$33,913	$9,551	5,299	$139.6	$26,344	$8,736	21.2%	32.0%	8.9%	11.6%
Oncology	21,198	$81.6	$3,848	$1,462	23,296	$92.4	$3,966	$1,603	21,649	$104.4	$4,821	$1,937	-2.8%	5.4%	8.4%	10.7%
Asthma/COPD	64,023	$44.9	$702	$178	72,556	$48.6	$670	$186	73,240	$55.8	$763	$216	-0.5%	6.0%	6.6%	7.9%
Insulin	10,908	$60.6	$5,556	$839	10,636	$57.3	$5,385	$847	10,164	$52.1	$5,125	$861	-4.7%	-4.6%	0.1%	2.7%
Skin Disorders	93,680	$36.4	$388	$166	91,199	$42.6	$467	$202	94,117	$51.6	$548	$239	-1.8%	18.8%	20.9%	19.3%
HIV/AIDS	2,006	$46.0	$22,930	$3,319	2,217	$48.7	$21,987	$3,379	2,316	$47.9	$20,703	$3,422	4.7%	3.5%	-1.1%	4.1%
Multiple Sclerosis/Paralysis	671	$48.5	$72,245	$11,369	642	$49.3	$76,786	$11,237	646	$46.0	$71,197	$10,624	-4.8%	-2.0%	3.0%	0.5%
Headaches	17,538	$25.2	$1,436	$303	18,169	$34.8	$1,916	$403	19,075	$45.5	$2,386	$487	3.8%	49.5%	44.1%	35.9%
ADHD	30,806	$28.7	$931	$129	33,993	$32.1	$943	$133	36,937	$41.0	$1,110	$163	6.8%	11.7%	4.6%	6.5%
Antidepressants	125,378	$33.6	$268	$50	128,302	$33.8	$263	$50	130,331	$38.0	$292	$57	1.7%	4.6%	2.8%	5.3%
Inflammatory/Autoimmune	85,712	$25.4	$296	$175	101,359	$27.2	$268	$160	105,353	$29.4	$279	$169	0.2%	6.5%	6.3%	6.6%
Anticoagulants	9,996	$20.8	$2,083	$460	9,676	$21.1	$2,178	$506	9,839	$23.2	$2,355	$549	-5.7%	3.8%	10.1%	13.7%
Blood Disorders	22,047	$13.2	$598	$223	21,204	$16.2	$764	$298	22,028	$21.0	$953	$383	-0.8%	12.4%	13.3%	15.7%
Antihypertensive	143,526	$25.5	$177	$28	144,212	$21.2	$147	$25	145,569	$20.8	$143	$25	-2.0%	-8.0%	-6.2%	-1.7%
Antipsychotics	10,284	$17.5	$1,703	$317	10,765	$20.0	$1,857	$353	11,450	$19.5	$1,703	$333	3.1%	7.9%	4.7%	6.0%
Lipid/Cholesterol Disorders	79,974	$14.9	$187	$45	81,798	$15.5	$189	$48	83,949	$19.3	$230	$60	-1.2%	1.8%	3.0%	6.2%
Diabetic Supplies/Monitoring	8,028	$3.4	$423	$190	9,338	$9.3	$995	$273	10,693	$16.2	$1,511	$336	6.1%	75.0%	64.9%	28.5%

Observations

The above table shows the top-20 SegalRx categories by total allowed charges in 2023. Members can be in more than one SegalRx category.

- Headaches had the largest increase in cost per script from 2019. This is mainly driven by Nurtec and a few other newer drugs to market.

[1] Annualized trend reflects the average annual trend between CY 2019 and CY 2023.
[2] In Millions. Rebates are not included

Appendices
Musculoskeletal

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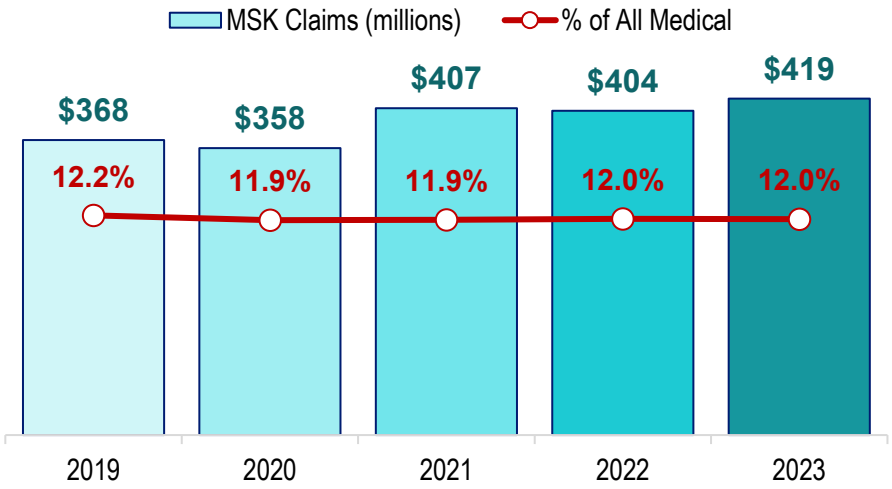
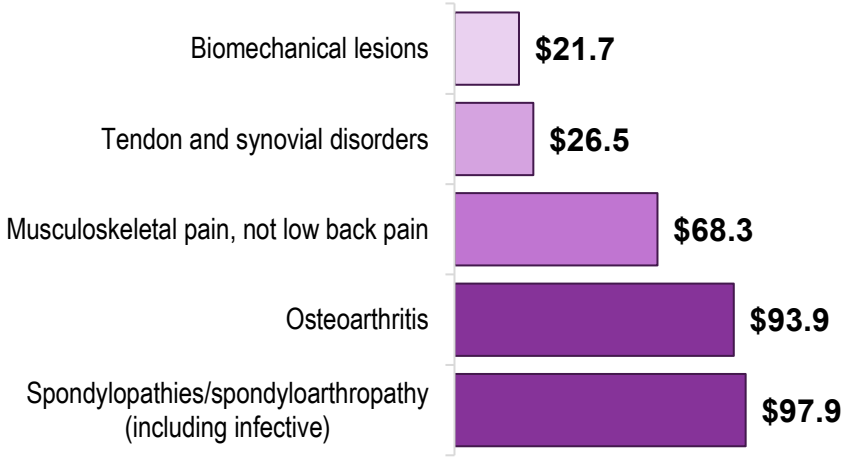
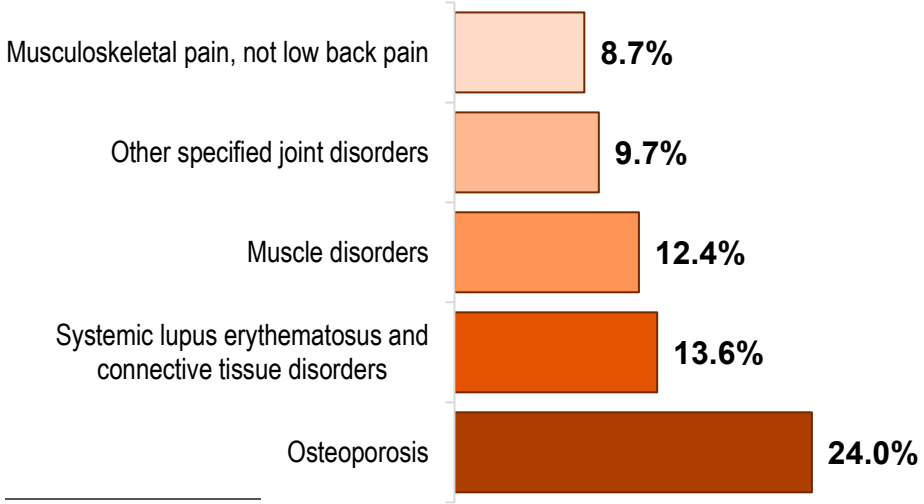
MSK Summary



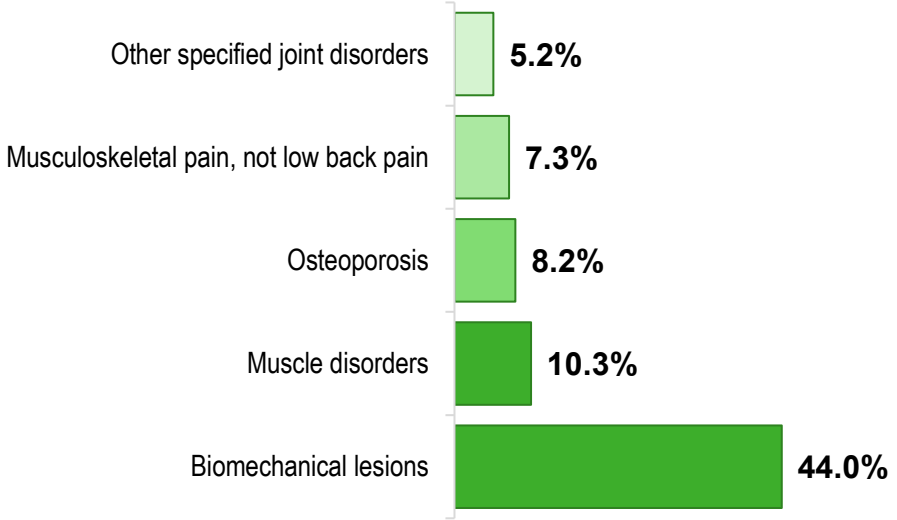
Top Conditions by Cost
CY 2023 (millions)



Emerging Trend Drivers



Historical Trend Drivers



Note: Emerging trend drivers represent the conditions with the greatest year-over-year increase in costs whereas historical trend drivers represent conditions with the greatest increase in costs from 2019 to 2023.

Appendices
Malignancies

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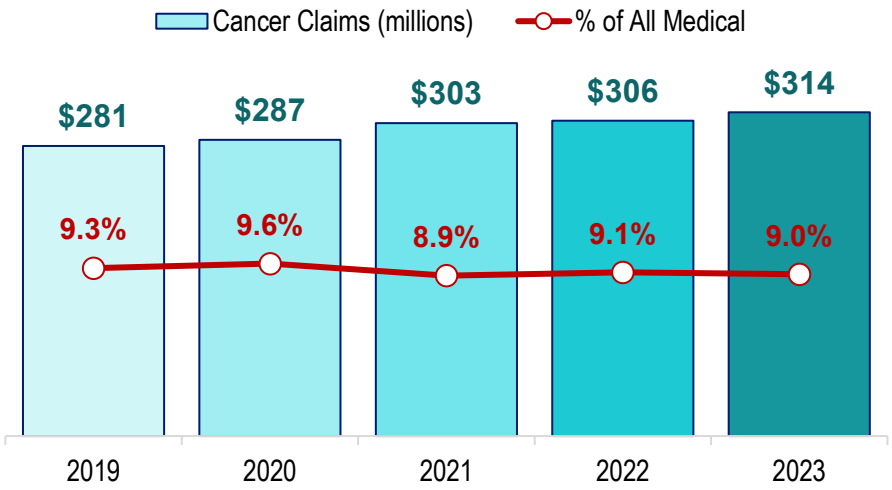
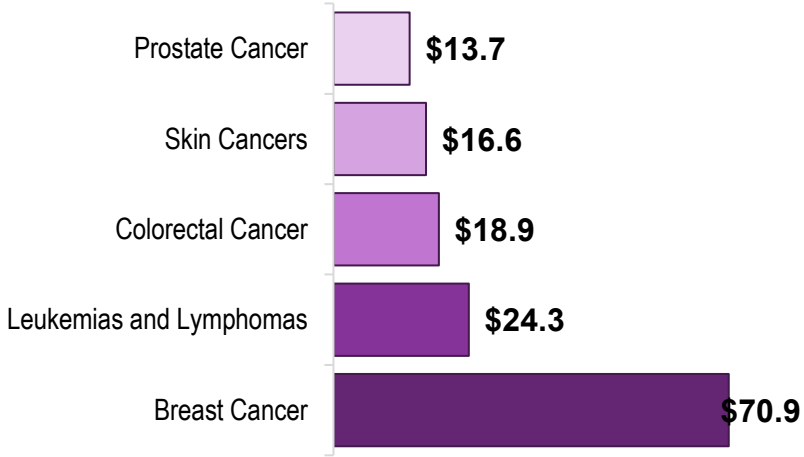
Cancer Summary

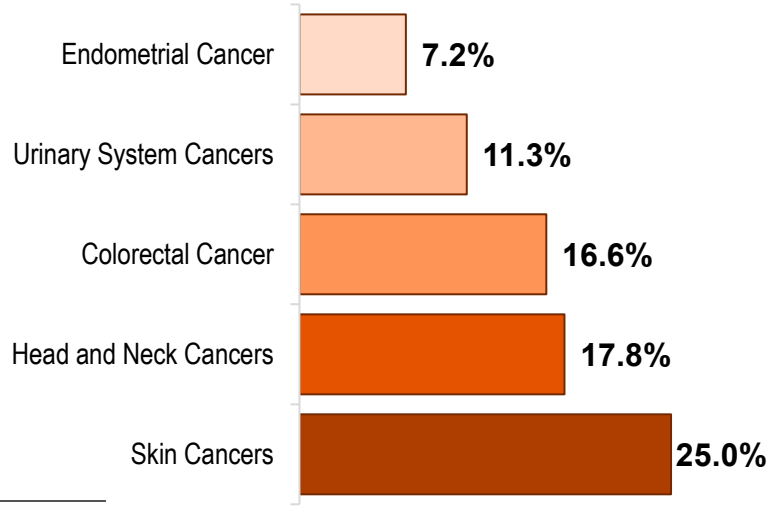


Top Conditions by Cost

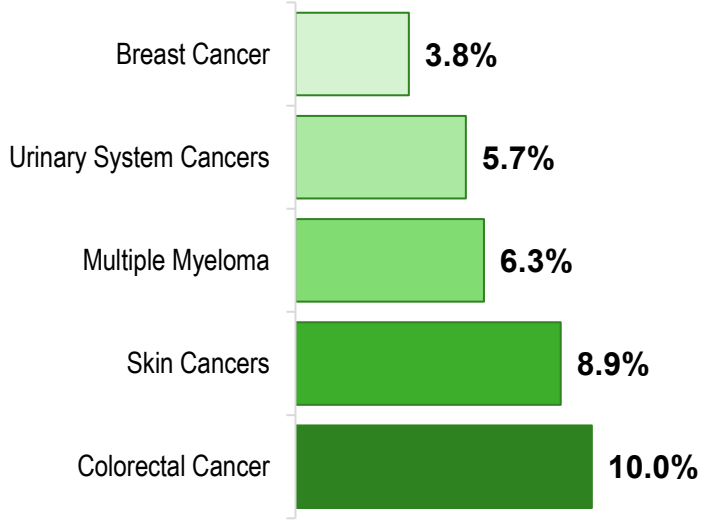
CY 2023 (millions)



Emerging Trend Drivers



Historical Trend Drivers



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Segal

Appendices
Mental Health

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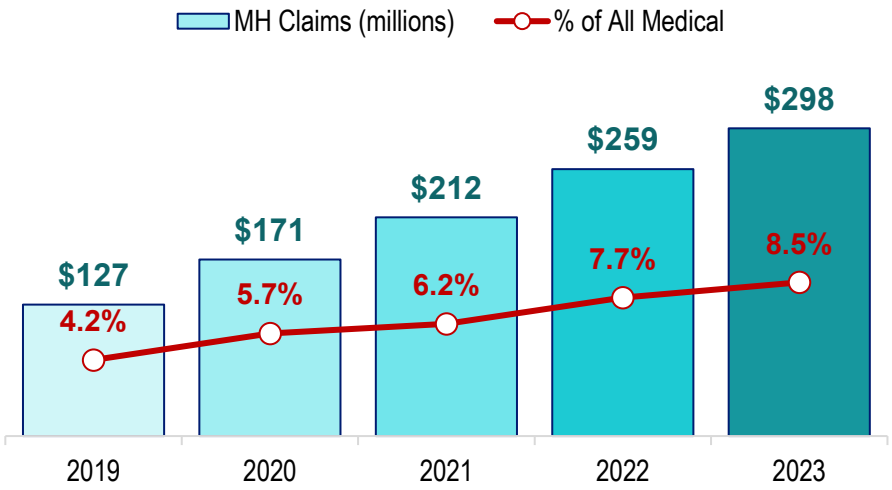
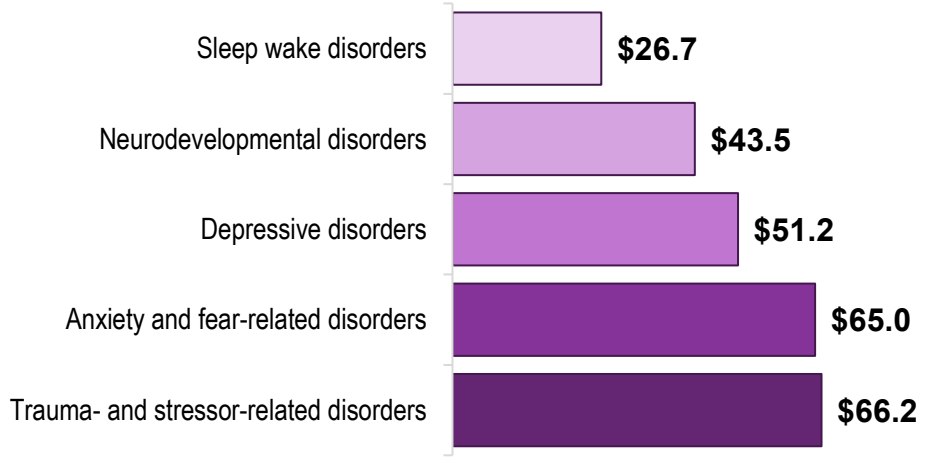
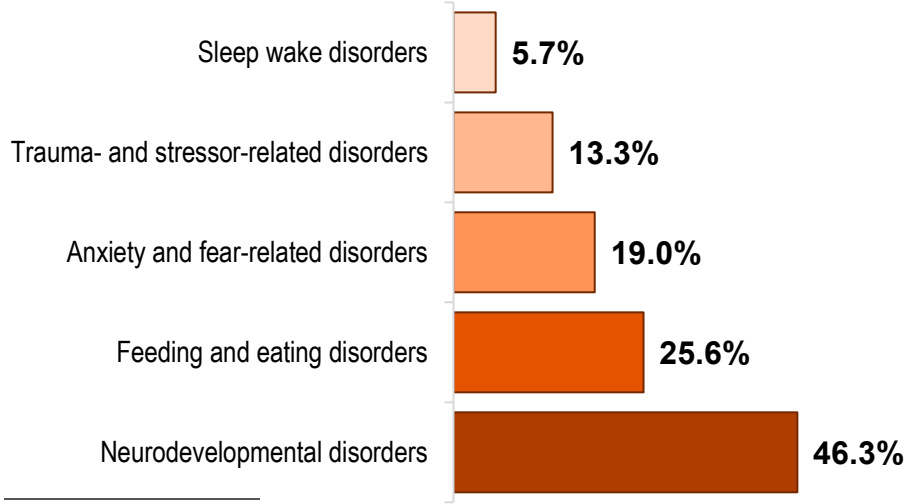
MH Summary



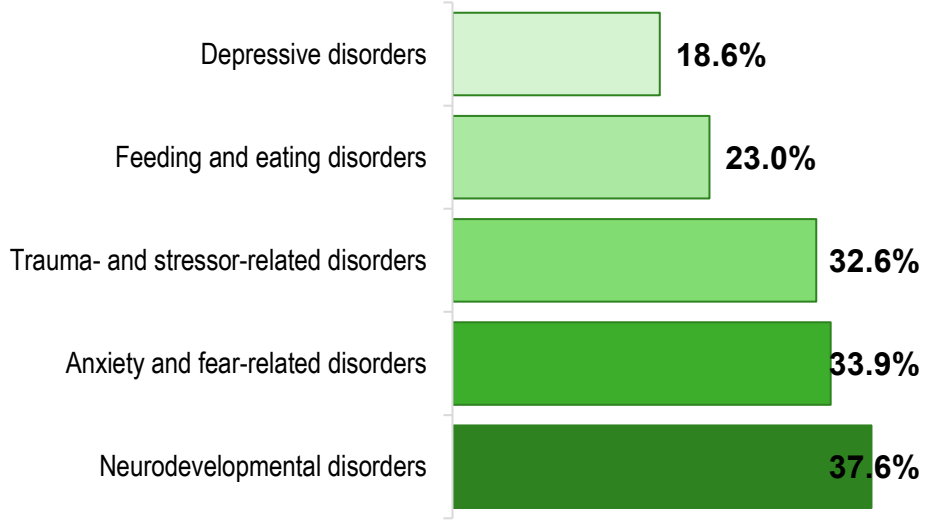
Top Conditions by Cost
CY 2023 (millions)



Emerging Trend Drivers



Historical Trend Drivers



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Appendices
Substance Use Disorder

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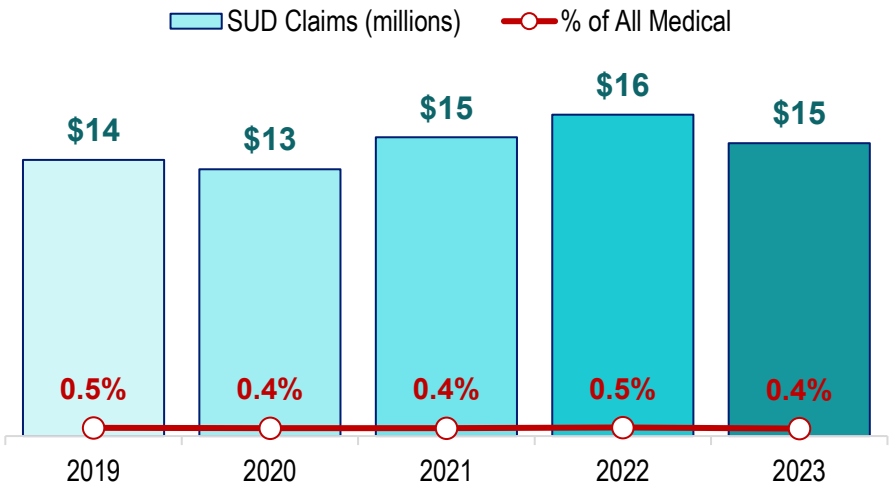
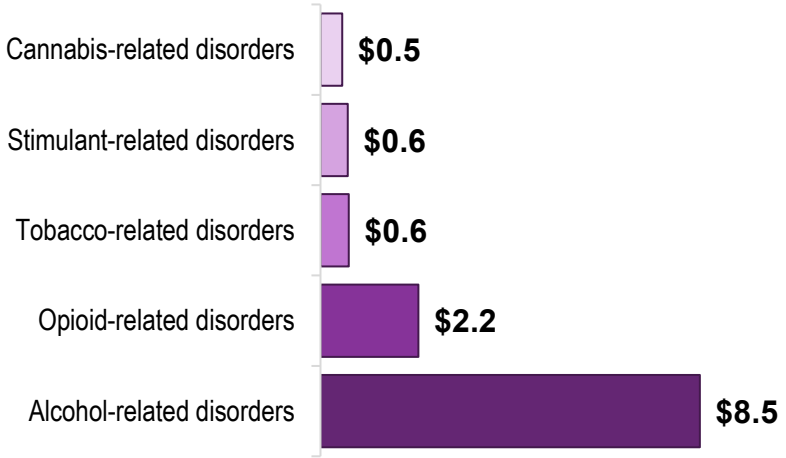
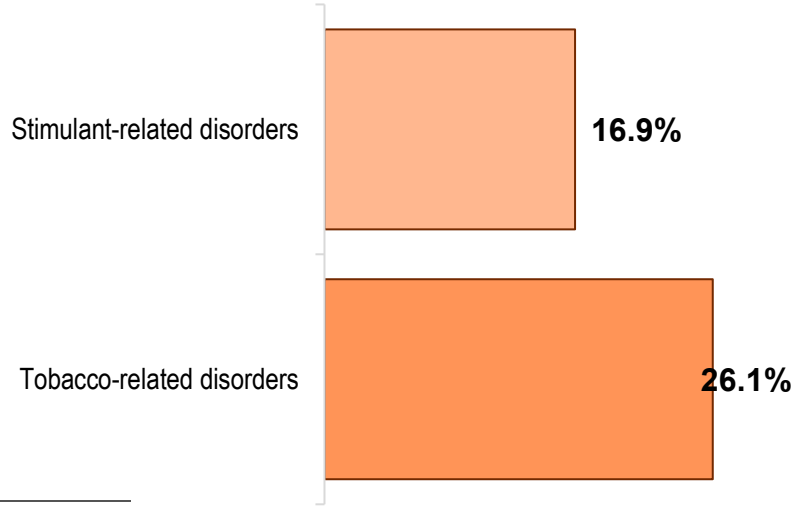
SUD Summary



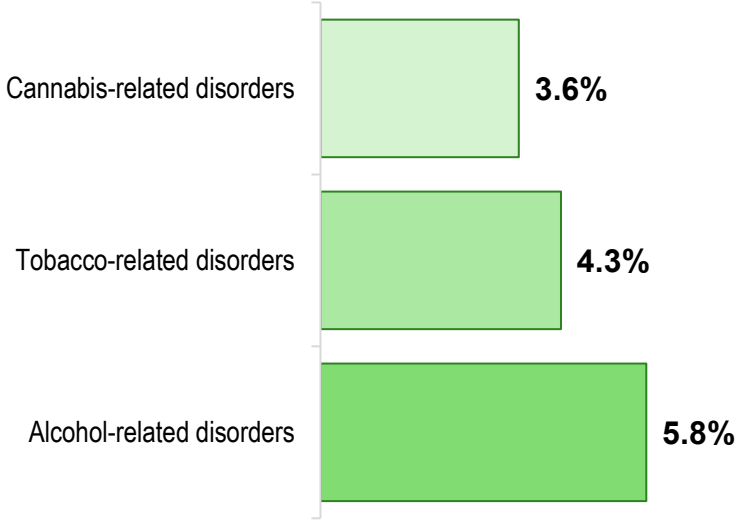
Top Conditions by Cost
CY 2023 (millions)



Emerging Trend Drivers



Historical Trend Drivers



Note: Emerging trend drivers represent the conditions with the greatest year-over-year increase in costs whereas historical trend drivers represent conditions with the greatest increase in costs from 2019 to 2023.

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Regions

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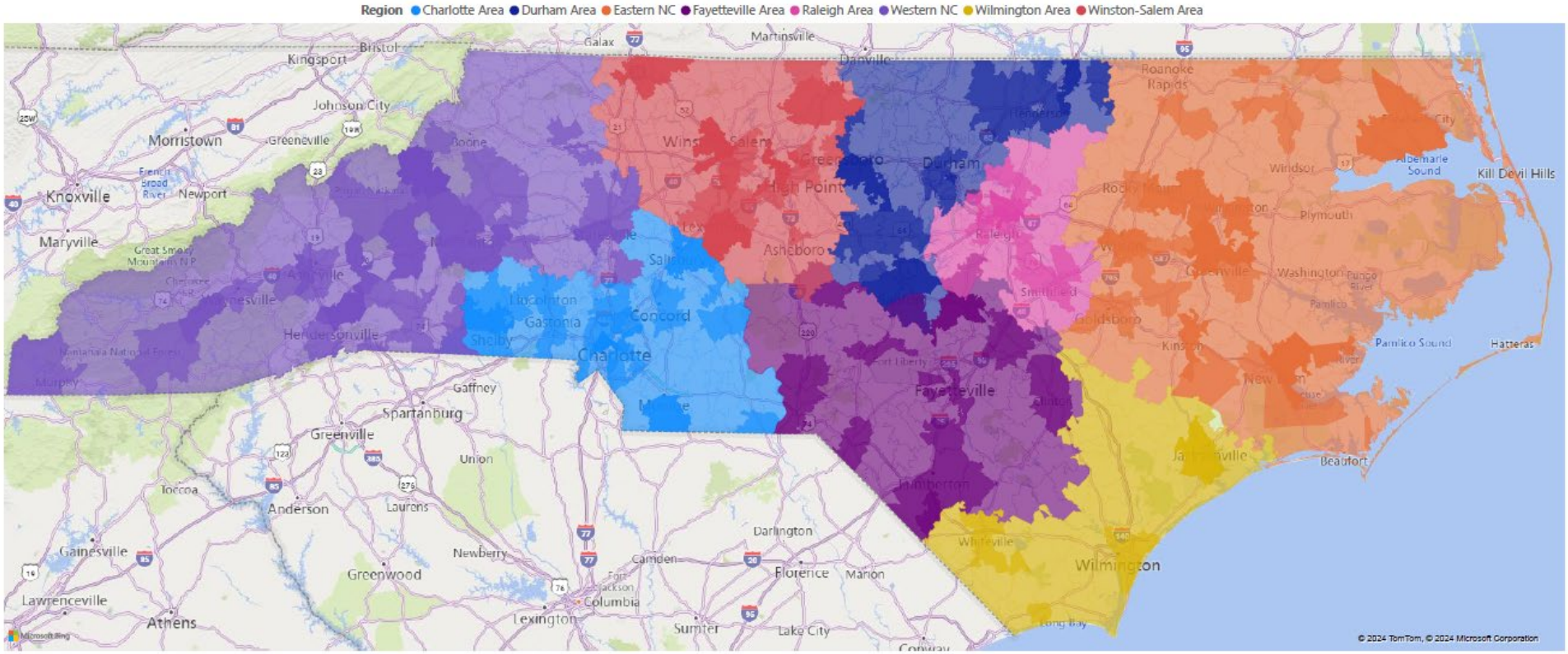

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Data Included

- This detailed risk study includes the following members of the SHP:
  - Actives: Any individual that is actively working, including Medicare-eligible members, and their eligible dependents
  - COBRA: Any individual receiving coverage through the Consolidated Omnibus Budget Reconciliation Act and their eligible dependents
  - Non-Medicare Retiree: Any individual enrolled in retiree coverage through the SHP and not yet eligible for Medicare and their non-Medicare-eligible dependents
- Note that individuals with any record of Medicare enrollment during a given year are excluded from this study.
- Medical and prescription drug claims incurred through 2023 and paid through April 2024.

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Member Profiles: Risk Group Definitions

- **Non-Utilizers:** Members who did not have any medical or prescription drug claims
- **Healthy:** Any member with a CCSR condition score below 2.4
- **Minor acute:** Members without a chronic condition identified who had a CCSR condition score between 2.4 and 6.8
- **Major acute:** Members without a chronic condition identified who had a CCSR condition score between 6.8 and 58.2
- **Single Chronic:** Members with exactly one identified chronic condition[1]
- **Chronic w/ Comorbidities:** Members with more than one identified chronic condition[1]
- **Malignancies:** Any member having the highest spend in a CCSR category related to malignancies
- **Catastrophic:** Any member with a CCSR condition score greater than 58.2

Member Profiles: Risk Group Examples

Risk Group	Description/Example of CCSR Category
1. Non-Utilizers	n/a
2. Healthy	Contraceptive and procreative management; upper respiratory infections; skin inflammation
3. Minor Acute	Urinary tract infections
4. Major Acute	Newborn affected by maternal conditions or complications of labor/delivery
5. Single Chronic	Diabetes mellitus, Type 2
6. Chronic w/ Comorbidities	Coronary atherosclerosis and other heart disease with heart failure and depressive disorders
7. Malignancies	Nervous system Malignancies - brain
8. Catastrophic	Septicemia

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Member Profiles: Member Group Definitions

- **New:** Members who were not in the Plan in the prior period.
- **Continuing:** Members who were in the Plan in the prior period and the succeeding period.
- **Terminated:** Members who were not in the Plan in the succeeding period.
  - Includes members who were both new and terminated in the same year.
  - Does not include members who transition to a Medicare plan.

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Projection Methodology

- Segal based the projections on the Risk Group (i.e., healthy, minor acute, etc.) and Status (active vs. non-Medicare retiree) profile migration for the five-year period, CY 2019 through CY 2023.
- The migration patterns for new entrants, terminations/deaths, and remaining members were accumulated separately.
- Projections assume membership remains level at CY 2023 of 545,410.
- Each year, members are terminated/deceased based on their profile. New entrants replace the terminations/deaths.
- Members who became Medicare-eligible were considered to be terminated for purposes of this study.
- Terminations/deaths are based on historical experience while new entrants are assumed to join the plan with similar risk and migration patterns as prior new entrants.

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Why Risk Adjust?

- While allowed PMPM reflects impact of utilization and unit costs, it also reflects underlying conditions of members.
- Utilization and cost can vary significantly by health condition beyond age and gender.
- To create fair comparisons among different population sets (e.g., group, plan, carrier), risk adjustment methods can be used to normalize for differences in health conditions.
- Risk scoring, or adjusting for the health status or case mix of a population, is a way to provide a meaningful, on-level measure of a population's utilization or expenditures, whether at the patient level, provider level, hospital level, or for particular diseases.
- Population-based risk grouper models can be used for a number of business applications, including:
  - Determine the escalation of health status over time
  - Identify and stratify (prioritize) members for outreach strategies
  - Enable member outreach to improve care compliance
  - Evaluate the saving of case management and wellness program that are "true savings" and not simply a regression to the mean
  - Accurately profile providers for utilization review and quality of care
  - Support risk-based contracts and gain sharing

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What is CCSR?

- Clinical Classifications Software Refined (CCSR) is a database developed as part of the Healthcare Cost and Utilization Project (HCUP), a Federal –State-Industry partnership sponsored by the Agency of Healthcare Research and Quality (AHRQ).
- The CCSR grouper uses medical diagnosis codes to identify one of 544 clinical categories to which members can be grouped and risk adjusted.
  - All valid ICD-10 codes are mapped to a clinical category.
- The CCS software is open-source, allowing greater flexibility in using its grouping methodology.
- Separate demographic and condition scores are provided:
  - Demographic score based on age, sex, and enrollment duration
  - Condition score based on ICD-10 diagnoses and procedure codes
- Starting data set used was the IBM Watson Marketscan Commercial data (26 million members nationwide).
  - Random forest modeling was used to develop demographic and condition-specific values by eligibility band (e.g., 1-3 months, 4-6 month, 7-9 months, 10-11 months, 12 months).
- Members can fall into multiple different condition categories. Below are some examples of CCSR diagnosis categories:
  - CIR007 Essential hypertension
  - CIR008 Hypertension with complications and secondary hypertension
  - CIR009 Acute myocardial infarction
  - CIR011 Coronary atherosclerosis and other heart disease

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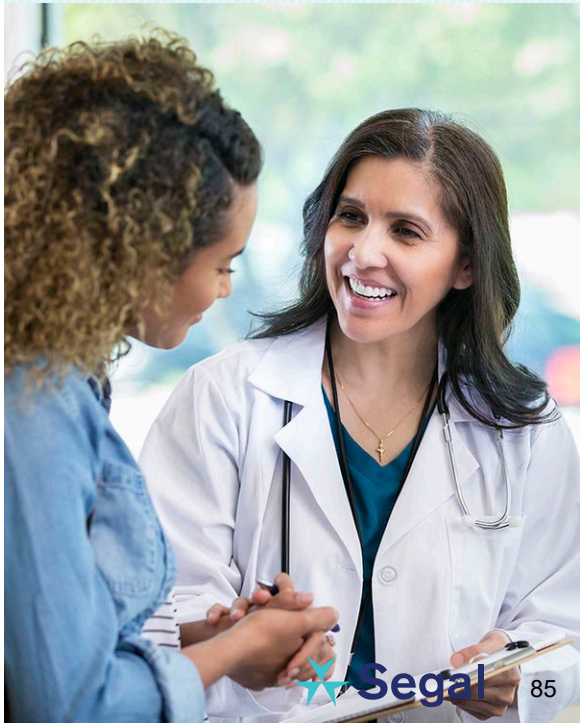
What is SegalRx?

- SegalRx was developed by health actuaries at Segal and utilizes the Medi-Span Generic Product Identifier grouper to allocate 56,167 different prescription drugs to one of 69 different conditions, based on National Drug Codes (NDCs).
- Up to four severity levels are established within each condition. Each condition category is hierarchical, meaning if a member utilizes drugs within multiple severity levels of the same condition, only the highest severity will be used for risk adjustment.
- In total, there are 135 different condition and severity levels in which prescription drugs are grouped.
- Risk scores were developed utilizing multiple regression modeling from 2023 pharmacy data in Segal's Data Warehouse (2.0 million members in the calibration sample).
  - Members with less than 12 months of enrollment or with any record of Medicare enrollment were excluded from the calibration sample.
- Risk scores were developed for both demographic and condition-specific values.
  - Risk scores are adjusted depending on how many months of enrollment an individual has during the experience period.
  - The total risk score for an individual is a sum of the demographic and condition values.
- Members can fall into multiple different condition categories. Below are some examples of SegalRx condition categories:
  - Disease modifying anti-rheumatic agents
  - Anti-hepatitis C (HCV) agents
  - Immunosuppressive agents
  - Anti-arrhythmic agents

Appendices
A Word About Privacy

- Data presented has been “de-identified,” which means it does not contain names or SSNs, etc.
- Specific medical conditions are identified.
- If the plan administrator knows the identity of individuals with a specific condition, that information is considered PHI.
- PHI is subject to the HIPAA Privacy Rule’s protections, which means it must be kept confidential and cannot be used for any reason other than health plan administration (e.g., using it for employment purposes, or by other benefit plans, is prohibited).



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