



Population Assessment

2021

Responsible Staff:

Dr. Diane Bohner, MD
Clinical Operations Director-CareVio

Michelle Passaretti, MSN, BSN, RN, CCM
Corporate Director, CareVio

Jami Jones, MSN, RN
Director CareVio Contracts, Quality & Performance Improvement

Kris Livingston, BS, MBA, RHA, CPHQ, LSSGB, CPHI
Senior Project Manager, Contracts, Quality & Performance Improvement

Greg Fisher, MBA, MSN, RN, CHC
Quality/Performance Improvement Program Manger

Megha Arora, MBA
Manager, Population Health Analytics

Kristi Cubin, MBA
Health Data Scientist, Population Health Analytics

Kundan Kunapareddy
Business Intelligence Developer, Population Health Analytics

George Rockett
Data Analyst, Population Health Analytics

CareVio Population Health Assessment

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CareVio© (CareVio) is an innovative care management organization that includes an interdisciplinary care coordination team comprised of Medical Directors, nurse care managers, social workers, pharmacists, respiratory therapists, and support staff who work to support primary care and specialist physicians in caring for their patients. CareVio's objective is to provide real-time robust clinical analytics and performance measurement to assist the primary care physician in improving quality, health outcomes, and member experience, while lowering cost and optimizing resource utilization. All phases of care are addressed, especially those transitions of care, that are typically difficult to manage.

CareVio collaborates with providers in acute, post-acute, urgent, and community settings. In addition, CareVio partners with community resources to identify health equity opportunities within our servicing area. CareVio recognizes the value of the National Committee for Quality Assurance (NCQA) Accreditation for Health Plans and other organizations and its rigorous standards to improve the quality of care provided to the members served. Our programs, policies and procedures are NCQA compliant and accredited, providing nationally recognized care management services to members within contractual populations living in Delaware, New Jersey, Maryland, and Pennsylvania.

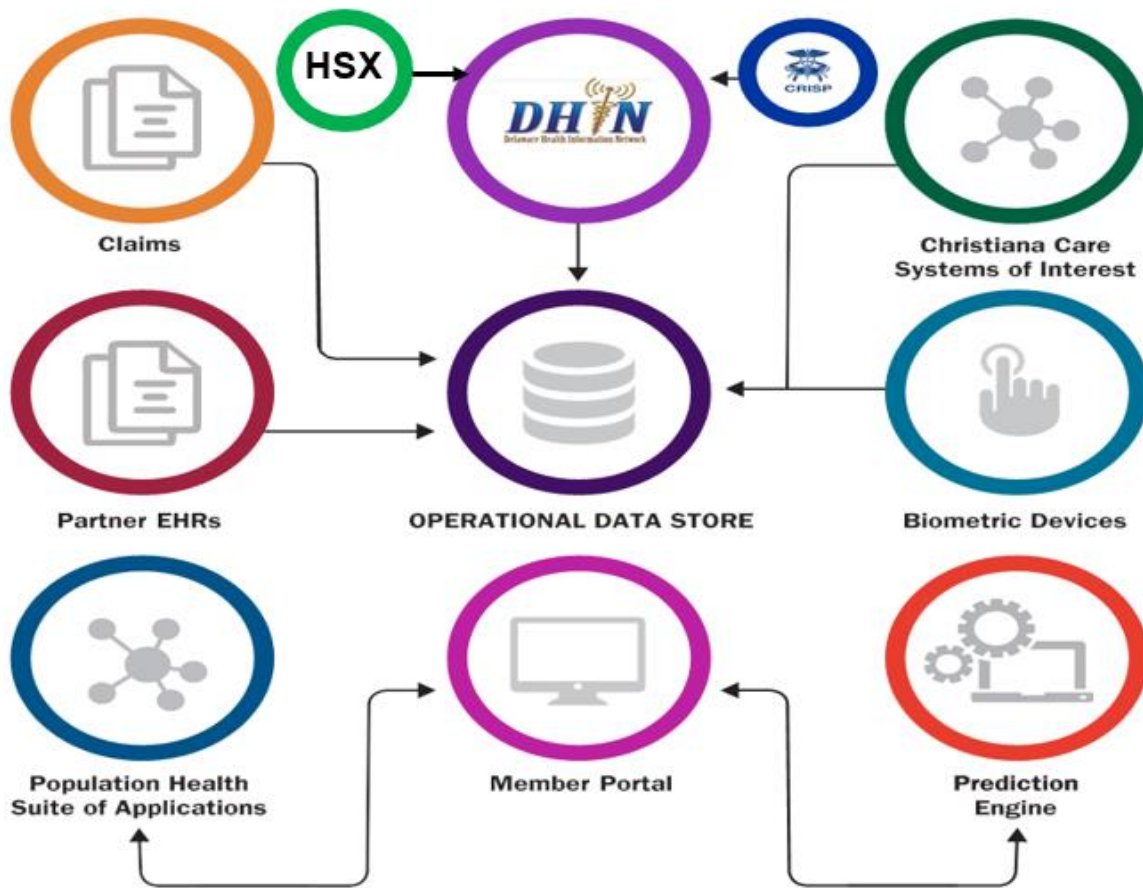
CareVio's mission is to deliver caring, compassionate, quality care and engage patients in their health and wellness journey. Our main service area is identified as the three counties in Delaware: New Castle, Kent and Sussex. In Sussex County, the population of those individuals ≥ 65 years of age is 27.0% , while the majority of New Castle County's population of is 18-64 years of age, representing 63.2% (State of Delaware, 2022).

I. Population Assessment Overview

CareVio's Population Assessment evaluates member demographics, health conditions, cultural/linguistic needs, Social Determinants of Health, health equity opportunities. CareVio utilized the following data sources: payer claims, clinical systems data from electronic health platform records, and health information exchanges . In addition, CareVio gathered and analyzed data from secondary sources, such as United States Census Bureau data. Denominators and numerators used in the calculations were based on standard definitions which were vetted through detailed review and guidance by the CareVio Clinical Operations Director. This analysis focused on targeted populations, subpopulations, disease management programs, and Social Determinants of Health (SDOH). The objective of this assessment is to ensure that CareVio activities and resources address its member needs.

II. Data Sources

CareVio's Population Assessment involved the collection and descriptive analyses of several secondary data sources. An example of the Operational Data Store Components is shown below.



Secondary Data Sources: The following sources of secondary data were used to analyze and develop CareVio’s 2021 Population Assessment. CareVio used the most up-to-date version of each data set; however, there may be a slight variation in data reporting periods. Furthermore, receipt of complete claims data for 2021 may be outstanding prior to completion of this assessment.

A. CareVio Data Sources

- (1) CareVio Claims and Encounter Data: Claims and encounter data for the entire member population were obtained from CareVio’s internal medical and administrative databases. The data in this report represents claims and encounter data received by CareVio from service providers for dates of service between January 1st through December 31, 2021.
 - (a) Methodology: Descriptive analyses of CareVio’s findings with claims and encounter data were performed
- (2) PowerChart data: Data entered into PowerChart was utilized to capture data not readily available from claims.(PowerChart is a secondary data source Electronic Health Record)
- (3) Program Data: Data entered into the CareVio Electronic Health Platform was utilized specifically for sub-population data and analysis.

B. Delaware Population 2022

(1) Delaware's median age is 39.6 years of age, with a slight gender gap of 51.6% females vs. 48.4% males (2021 World Population by Country, 2022).

(2) Black or African American population ranked second in the entire state population accounting for 22.18%; while those with the racial composition of white was ranked at 68.75% (2021 World Population by Country, 2022).

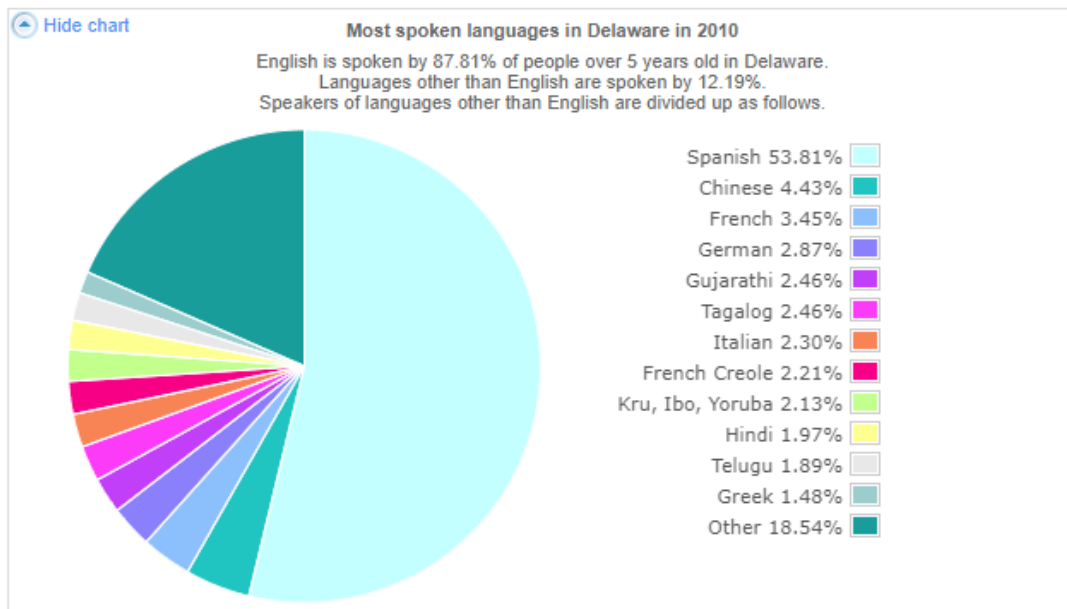
(3) The total population of Delaware identified as 91% Non-Hispanic ethnicity, while 9% identified with an ethnicity of Hispanic (State of Delaware, 2022)

C. U.S. Census Bureau

(1) Data pulled from the 2020 Delaware Census (U.S. Census Bureau: Delaware Census, 2020) identified that the total approximate population of Delaware was 989,948. Data showed that the greatest populated area was New Castle County, followed by Sussex County, and Kent County which has the smallest population of the three counties.

D. Modern Language Association (MLA) Language Map

(1) According to the MLA Language Map, English is the predominant language spoken throughout Delaware, followed by Spanish. The graph below notates the languages spoken other than English.



E. Geocoding

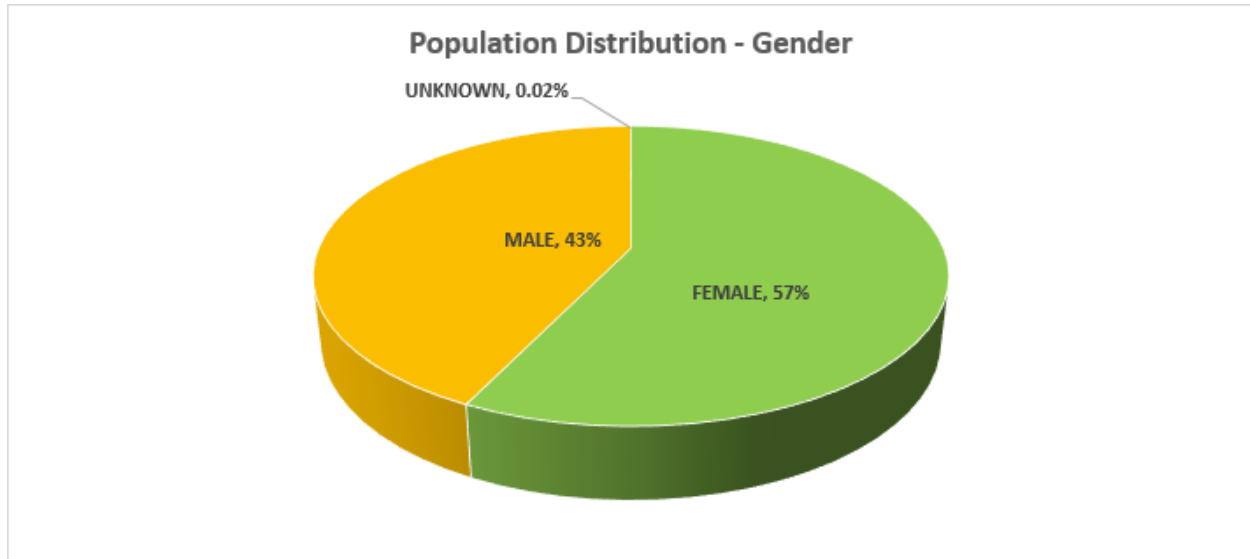
(1) Claims data was analyzed utilizing a geocoding map to identify areas within the CareVio population relating to zip code location. These analyses will be discussed further into this report.

III. Key Findings by CareVio Population By:

Data Source: CareVio Claims Data

A. Gender

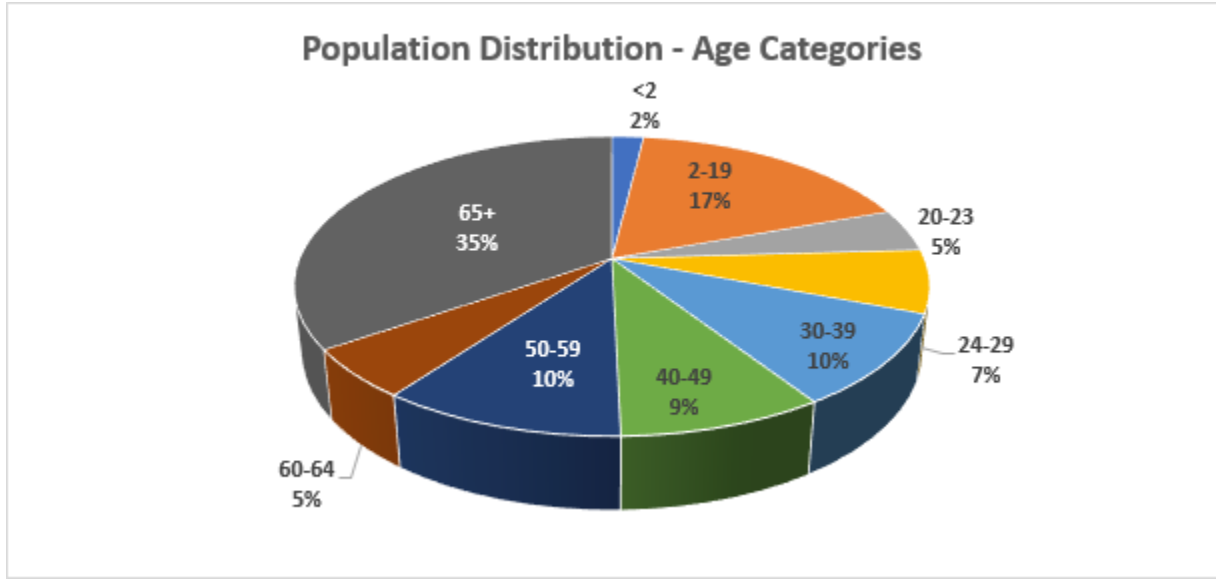
| Gender Code | Gender | PLR Mbr Count | PLR Mbr % |
|-------------|---------|----------------|----------------|
| F | Female | 68,574 | 57% |
| M | Male | 51,212 | 43% |
| U | Unknown | 27 | 0.02% |
| | | 119,813 | 100.00% |



B. Age

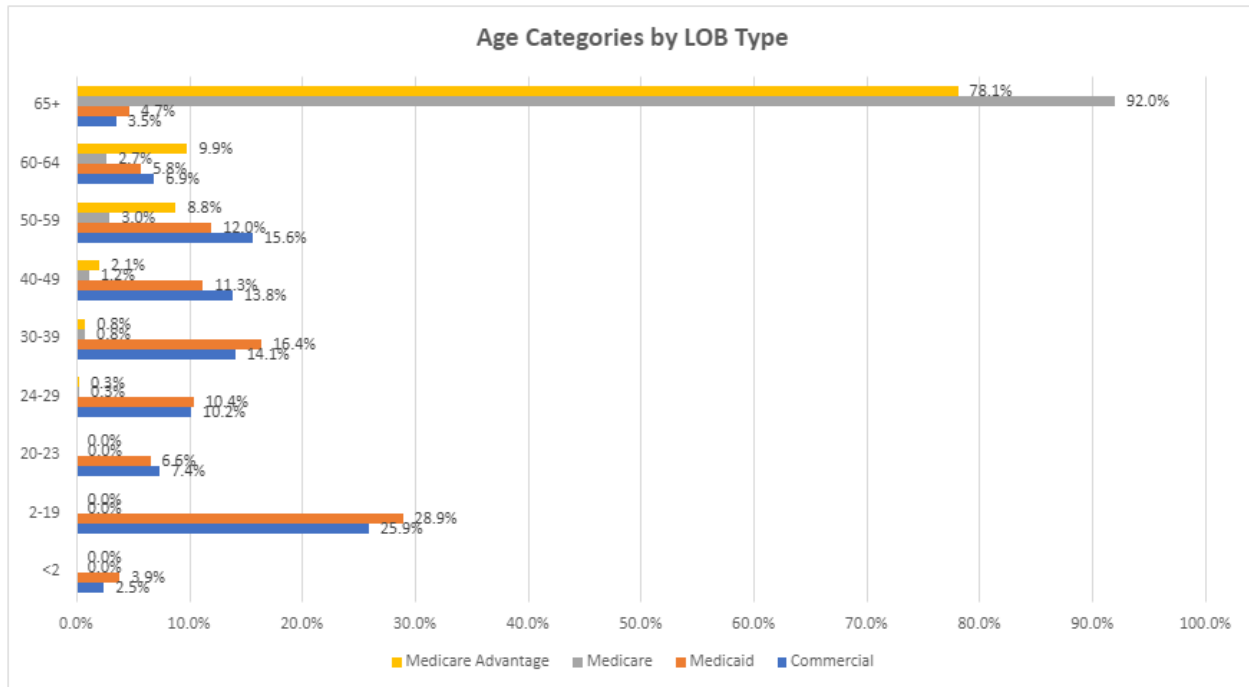
| Mbr Age Distribution | PLR Mbr Count | PLR Mbr % |
|----------------------|----------------|----------------|
| Age < 02 | 2,298 | 1.9% |
| Age 02-19 | 20,975 | 17.5% |
| Age 20-23 | 5,554 | 4.6% |
| Age 24-29 | 8,118 | 6.8% |
| Age 30-39 | 11,932 | 10.0% |
| Age 40-49 | 10,586 | 8.8% |
| Age 50-59 | 12,557 | 10.5% |
| Age 60-64 | 6,359 | 5.3% |
| Age >= 65 | 41,434 | 34.6% |
| TOTAL | 119,813 | 100.00% |

1. Total Population



2. Claim Information by Age

| Mbr Age Distribution | Commercial | Medicaid | Medicare | Medicare Advantage | TOTAL Mbr Count |
|----------------------|-------------|-------------|-------------|--------------------|-----------------|
| Age < 02 | 2.5% | 3.9% | 0.0% | 0.0% | 2,298 |
| Age 02-19 | 25.9% | 28.9% | 0.0% | 0.0% | 20,975 |
| Age 20-23 | 7.4% | 6.6% | 0.0% | 0.0% | 5,554 |
| Age 24-29 | 10.2% | 10.4% | 0.3% | 0.3% | 8,118 |
| Age 30-39 | 14.1% | 16.4% | 0.8% | 0.8% | 11,932 |
| Age 40-49 | 13.8% | 11.3% | 1.2% | 2.1% | 10,586 |
| Age 50-59 | 15.6% | 12.0% | 3.0% | 8.8% | 12,557 |
| Age 60-64 | 6.9% | 5.8% | 2.7% | 9.9% | 6,359 |
| Age >= 65 | 3.5% | 4.7% | 92.0% | 78.1% | 41,44 |
| TOTAL | 100% | 100% | 100% | 100% | 119,813 |

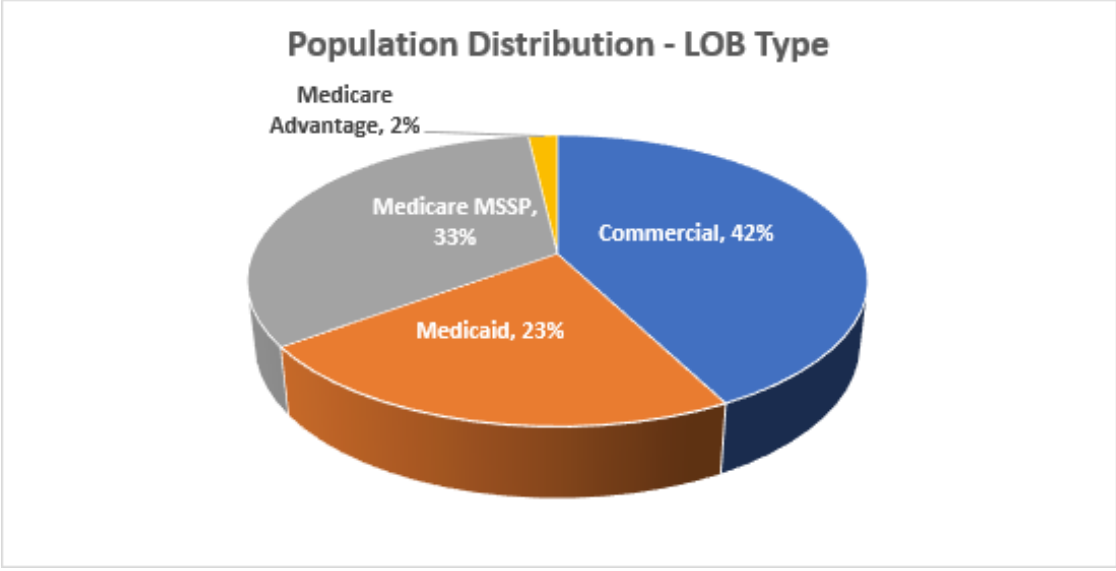


C. Line of Business (LOB)

Data Source: CareVio Claims Data

CareVio Population Distribution by Line of Business (LOB)

| LOB | PLR Mbr Count | PLR Mbr % |
|--------------------|----------------|----------------|
| Commercial | 50,782 | 42% |
| Medicaid | 27,014 | 23% |
| Medicare | 39,847 | 33% |
| Medicare Advantage | 2,170 | 2% |
| TOTAL | 119,813 | 100.00% |

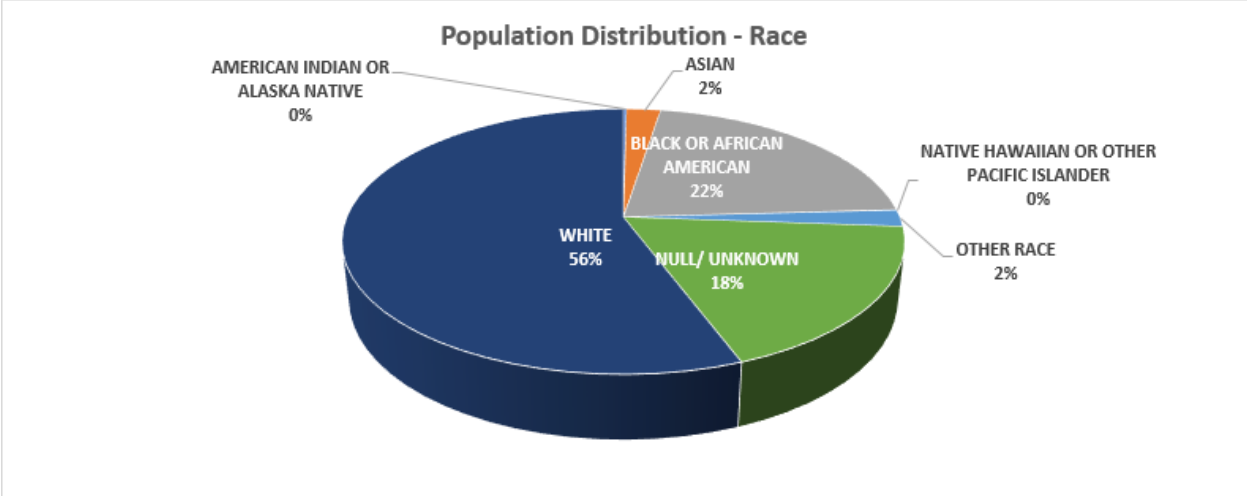


D. Race

Data Source: CareVio Claims Data

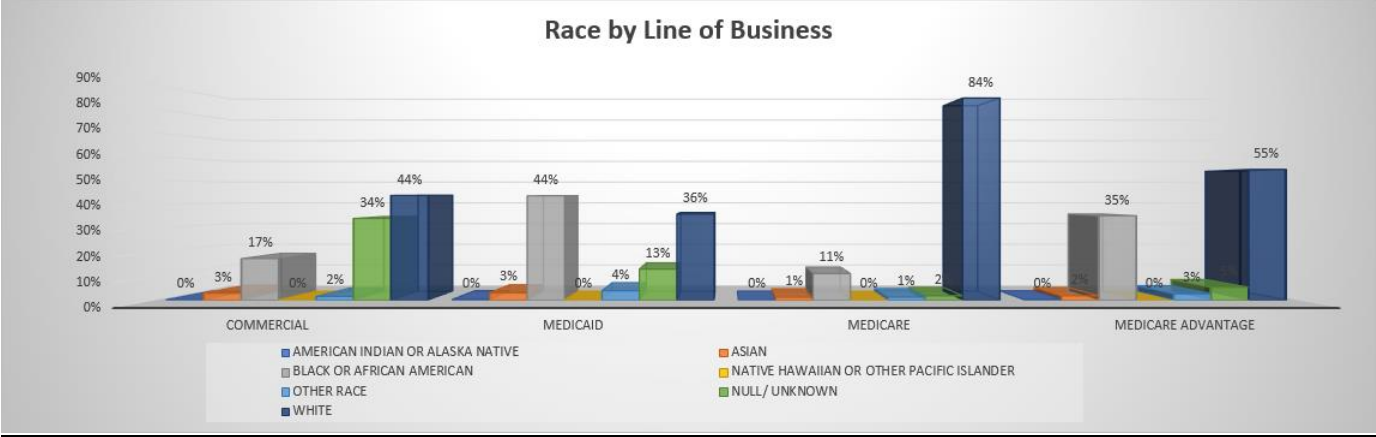
1. Total Population

| Race | PLR Mbr Count | PLR Mbr % |
|---|----------------|----------------|
| American Indian or Alaska Native | 247 | 0% |
| Asian | 2,810 | 2% |
| Black or African American | 25,794 | 22% |
| Native Hawaiian or Other Pacific Islander | 65 | 0% |
| Null/Unknown | 21,694 | 18% |
| Other Race | 2,418 | 2% |
| White | 66,785 | 56% |
| | 119,813 | 100.00% |



2. By Line of Business

| | Commercial | Medicaid | Medicare | Medicare Advantage |
|---|-------------|-------------|-------------|--------------------|
| American Indian or Alaska Native | 0% | 0% | 0% | 0% |
| Asian | 3% | 3% | 1% | 2% |
| Black or African American | 17% | 44% | 11% | 35% |
| Native Hawaiian or Other Pacific Islander | 0% | 0% | 0% | 0% |
| Other Race | 2% | 4% | 1% | 3% |
| Null/Unknown | 34% | 13% | 2% | 5% |
| White | 44% | 36% | 84% | 5% |
| TOTAL | 100% | 100% | 100% | 100% |

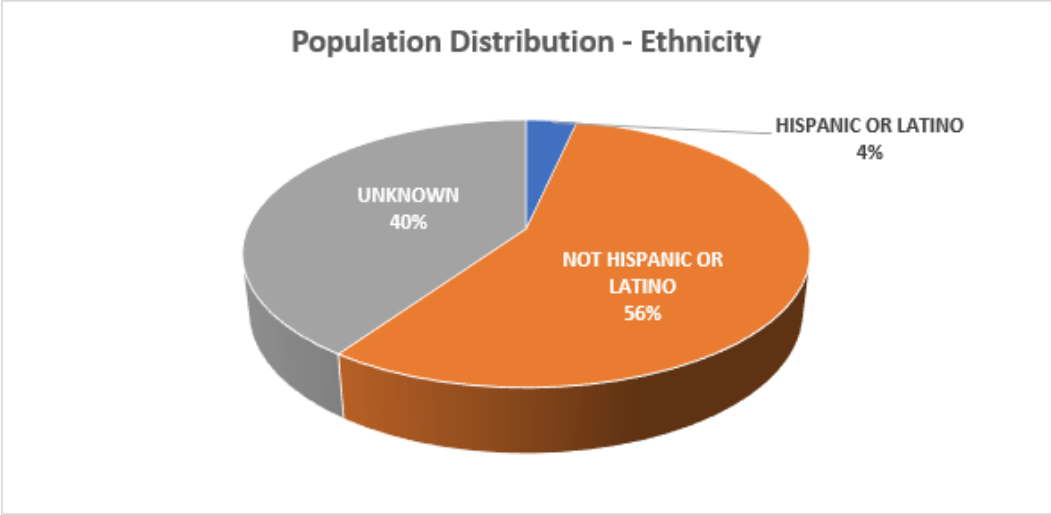


E. Ethnicity

Data Source: CareVio Claims Data

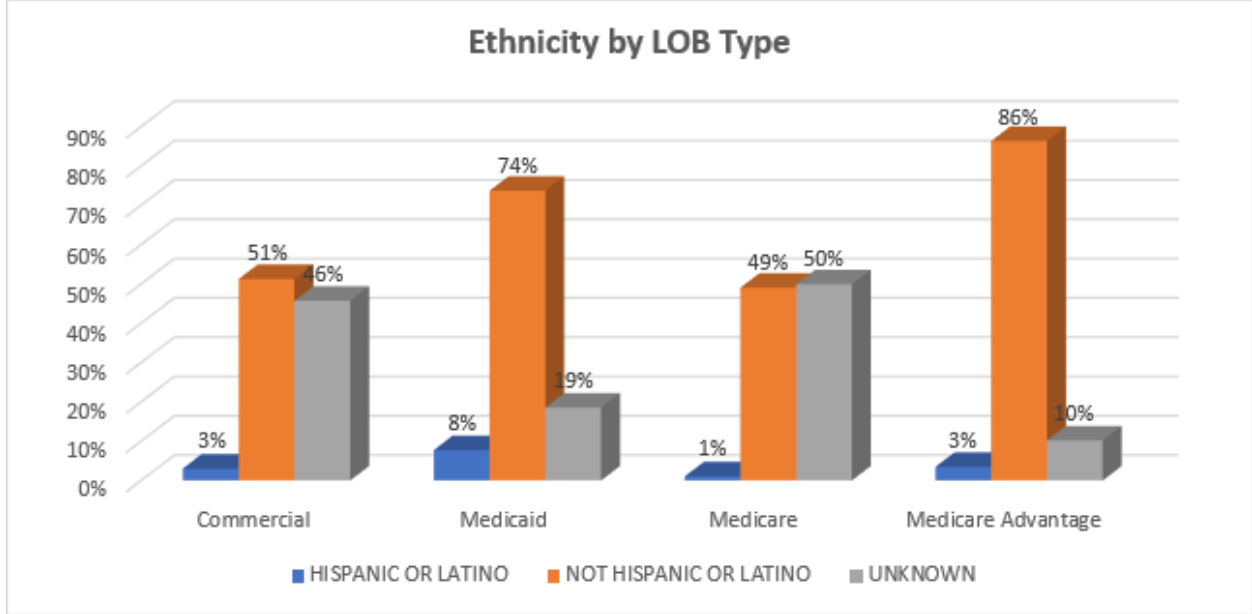
1. Total Populations

| Ethnicity | Member Count | Member % |
|------------------------|----------------|-------------|
| Hispanic or Latino | 4,140 | 4% |
| Not Hispanic or Latino | 67,336 | 56% |
| Unknown | 48,337 | 40% |
| TOTAL | 119,813 | 100% |



2. By Line of Business

| | Commercial | % | Medicaid | % | Medicare | % | Medicare Advantage | % | TOTAL |
|------------------------|---------------|-------------|---------------|-------------|---------------|-------------|--------------------|-------------|----------------|
| Hispanic or Latino | 1,558 | 3% | 2,090 | 8% | 417 | 1% | 75 | 3% | 4,140 |
| Not Hispanic or Latino | 26,020 | 51% | 19,909 | 74% | 19,533 | 49% | 1,874 | 86% | 67,336 |
| Unknown | 23,204 | 46% | 5,015 | 19% | 19,897 | 50% | 221 | 10% | 48,337 |
| TOTAL | 50,782 | 100% | 27,014 | 100% | 39,847 | 100% | 2,170 | 100% | 119,819 |



F. Primary Language

Data Source: CareVio Claims Data

1. Population by Primary Language

| Primary Language | Member Count | Member % |
|------------------|----------------|----------------|
| English | 76,872 | 64.16% |
| Unavailable | 41,714 | 34.82% |
| Spanish | 612 | 0.51% |
| Mandingo | 138 | 0.12% |
| Arabic | 116 | 0.10% |
| Slovenian | 71 | 0.06% |
| Bengali | 73 | 0.06% |
| Korean | 48 | 0.04% |
| Vietnamese | 40 | 0.03% |
| Hindi | 23 | 0.02% |
| French | 21 | 0.02% |
| Urdu | 17 | 0.01% |
| Gujarati | 21 | 0.02% |
| Russian | 11 | 0.01% |
| Turkish | 12 | 0.01% |
| Tagalong | 8 | 0.01% |
| Italian | 8 | 0.01% |
| Swahili | 3 | 0.00% |
| Greek | 1 | 0.00% |
| Other | 2 | 0.00% |
| Polish | 2 | 0.00% |
| TOTAL | 119,813 | 100.00% |

2. Primary Language by Line of Business

| Language | Commercial | Medicaid | Medicare | Medicare Advantage | Total |
|--------------|-------------|-------------|-------------|--------------------|-------------|
| English | 62.28% | 83.04% | 52.25% | 91.66% | 64.16% |
| Unavailable | 37.31% | 14.43% | 46.99% | 6.59% | 34.82% |
| Spanish | 0.25% | 1.13% | 0.39% | 1.11% | 0.51% |
| Mandingo | 0.02% | 0.32% | 0.11% | 0.05% | 0.12% |
| Arabic | 0.01% | 0.39% | 0.01% | 0.05% | 0.10% |
| Slovenian | 0.01% | 0.12% | 0.08% | 0.05% | 0.06% |
| Bengali | 0.06% | 0.13% | 0.01% | 0.23% | 0.06% |
| Korean | 0.01% | 0.10% | 0.04% | 0.00% | 0.04% |
| Vietnamese | 0.00% | 0.10% | 0.03% | 0.14% | 0.03% |
| Hindi | 0.01% | 0.04% | 0.01% | 0.00% | 0.02% |
| French | 0.02% | 0.04% | 0.01% | 0.00% | 0.02% |
| Urdu | 0.00% | 0.05% | 0.01% | 0.00% | 0.01% |
| Gujarati | 0.00% | 0.03% | 0.03% | 0.09% | 0.02% |
| Russian | 0.00% | 0.02% | 0.01% | 0.00% | 0.01% |
| Turkish | 0.00% | 0.04% | 0.00% | 0.05% | 0.01% |
| Tagalong | 0.00% | 0.02% | 0.01% | 0.00% | 0.01% |
| Italian | 0.00% | 0.00% | 0.02% | 0.00% | 0.01% |
| Swahili | 0.00% | 0.01% | 0.00% | 0.00% | 0.00% |
| Greek | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Other | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Polish | 0.00% | 0.00% | 0.01% | 0.00% | 0.00% |
| Total | 100% | 100% | 100% | 100% | 100% |

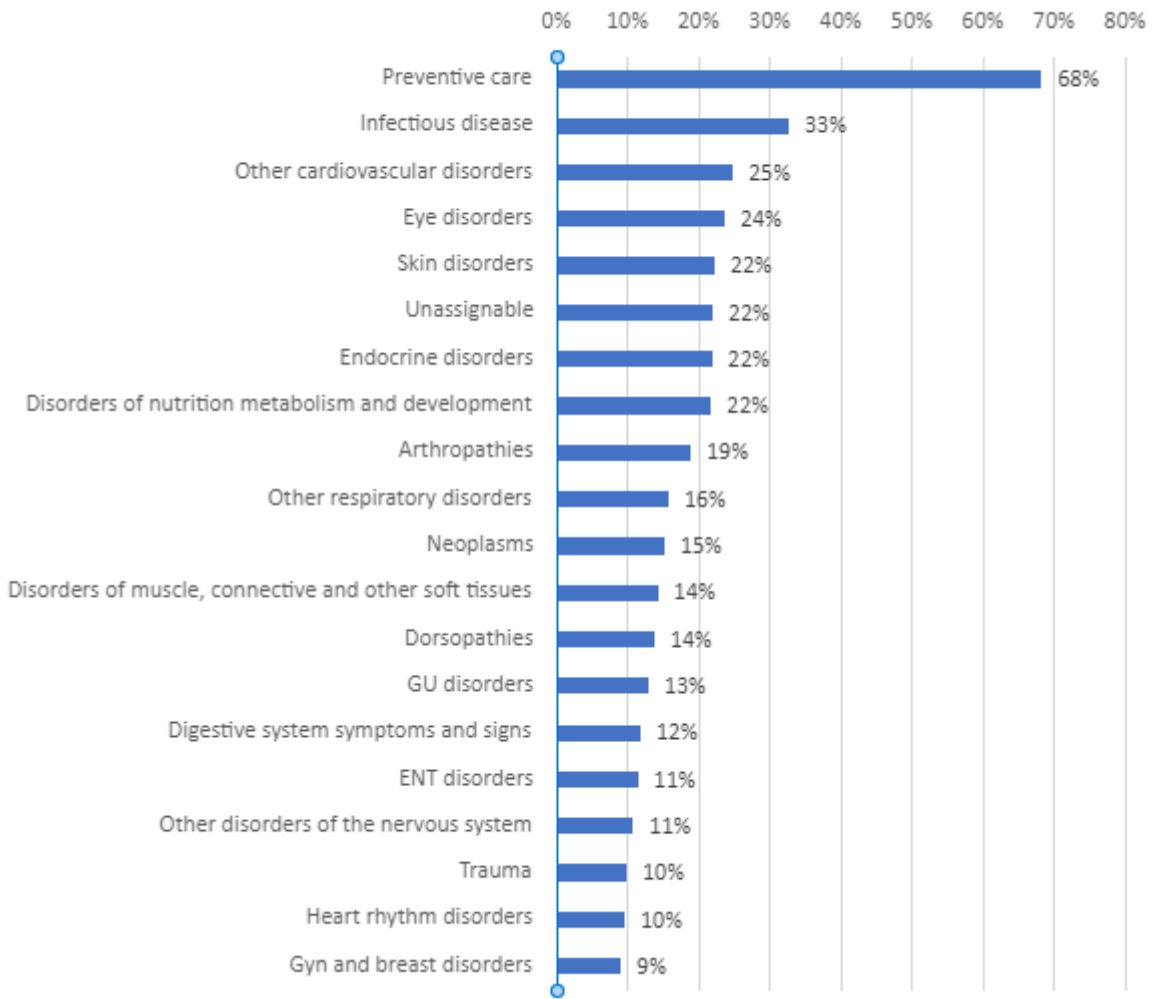
G. Top 20 Physical Health Conditions

Data Source: CareVio Claims Data

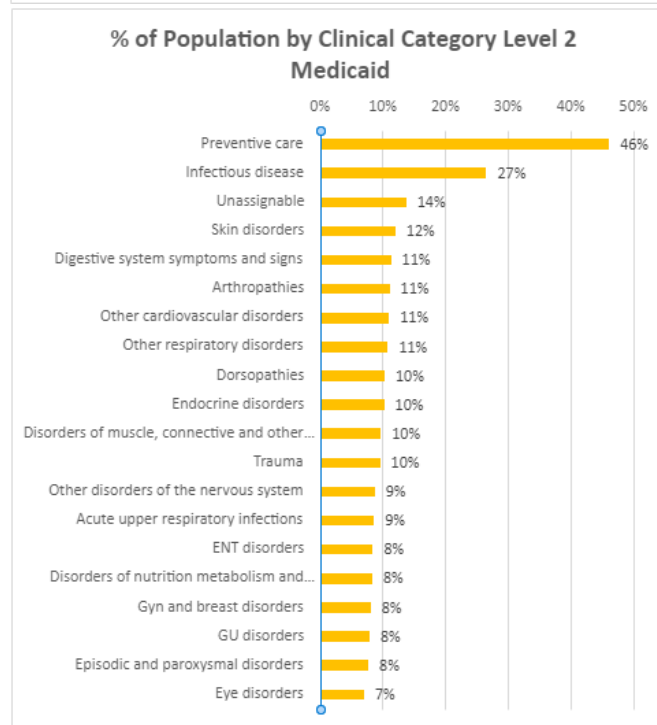
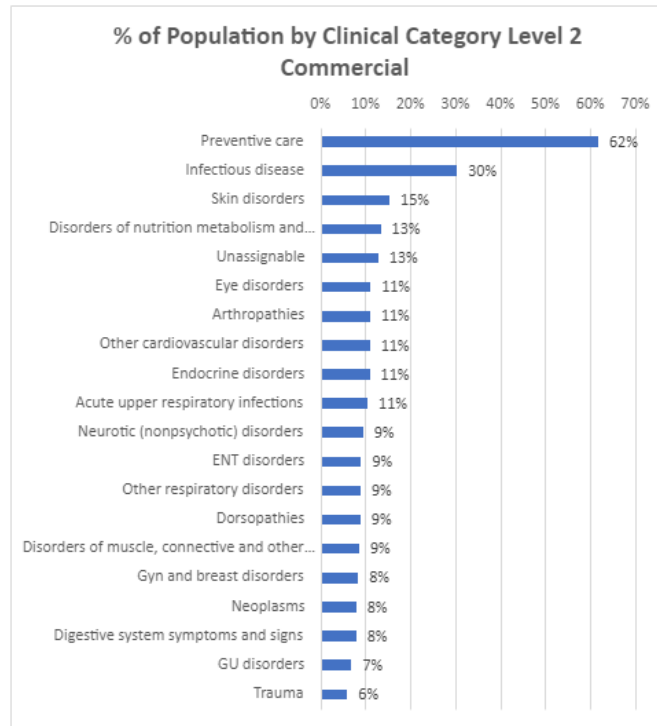
1. Population – Top 20 Physical Health Conditions

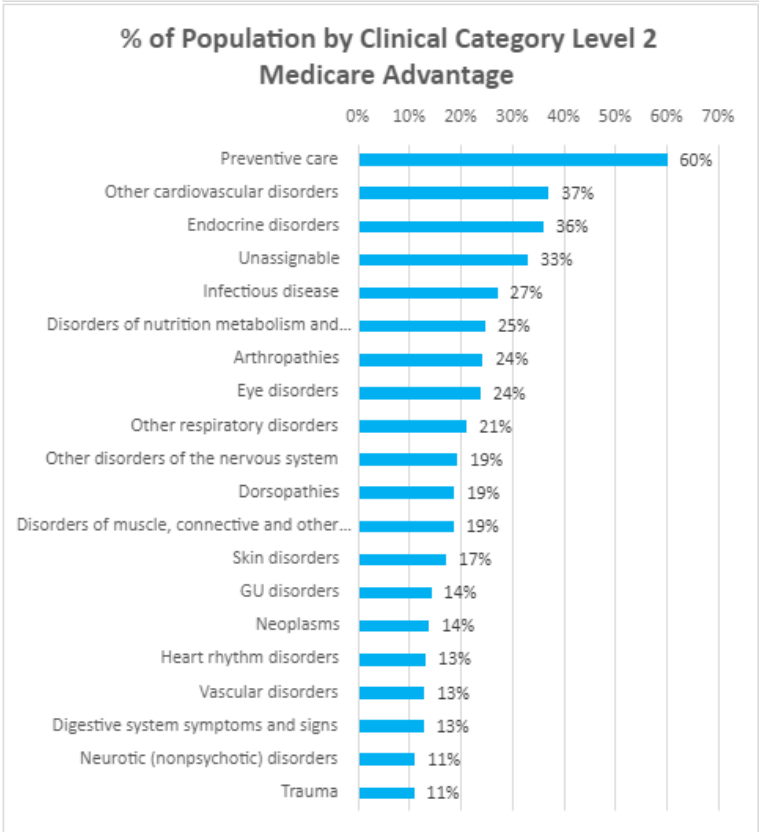
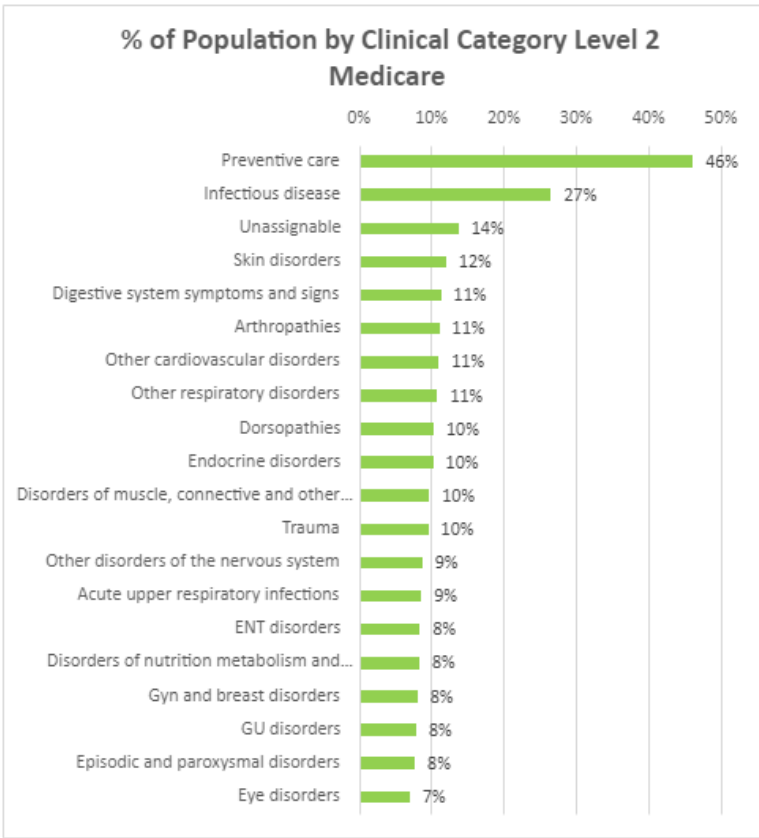
| Claim Line Condition Name | Claim Member Count | Claim Member % |
|--|--------------------|----------------|
| Preventive care | 81,819 | 68% |
| Infectious disease | 39,164 | 33% |
| Other cardiovascular disorders | 29,742 | 25% |
| Eye disorders | 28,335 | 24% |
| Skin disorders | 26,630 | 22% |
| Unassignable | 26,307 | 22% |
| Endocrine disorders | 26,209 | 22% |
| Disorders of nutrition metabolism and development | 26,040 | 22% |
| Arthropathies | 22,634 | 19% |
| Other respiratory disorders | 18,834 | 16% |
| Neoplasms | 18,209 | 15% |
| Disorders of muscle, connective and other soft tissues | 17,116 | 14% |
| Dorsopathies | 16,513 | 14% |
| GU disorders | 15,502 | 13% |
| Digestive system symptoms and signs | 14,127 | 12% |
| ENT disorders | 13,726 | 11% |
| Other disorders of the nervous system | 12,981 | 11% |
| Trauma | 11,849 | 10% |
| Heart rhythm disorders | 11,519 | 10% |
| Gyn and breast disorders | 10,854 | 9% |

% of Total Population by Clinical Category Level 2



2. Top Clinical Categories by Line of Business

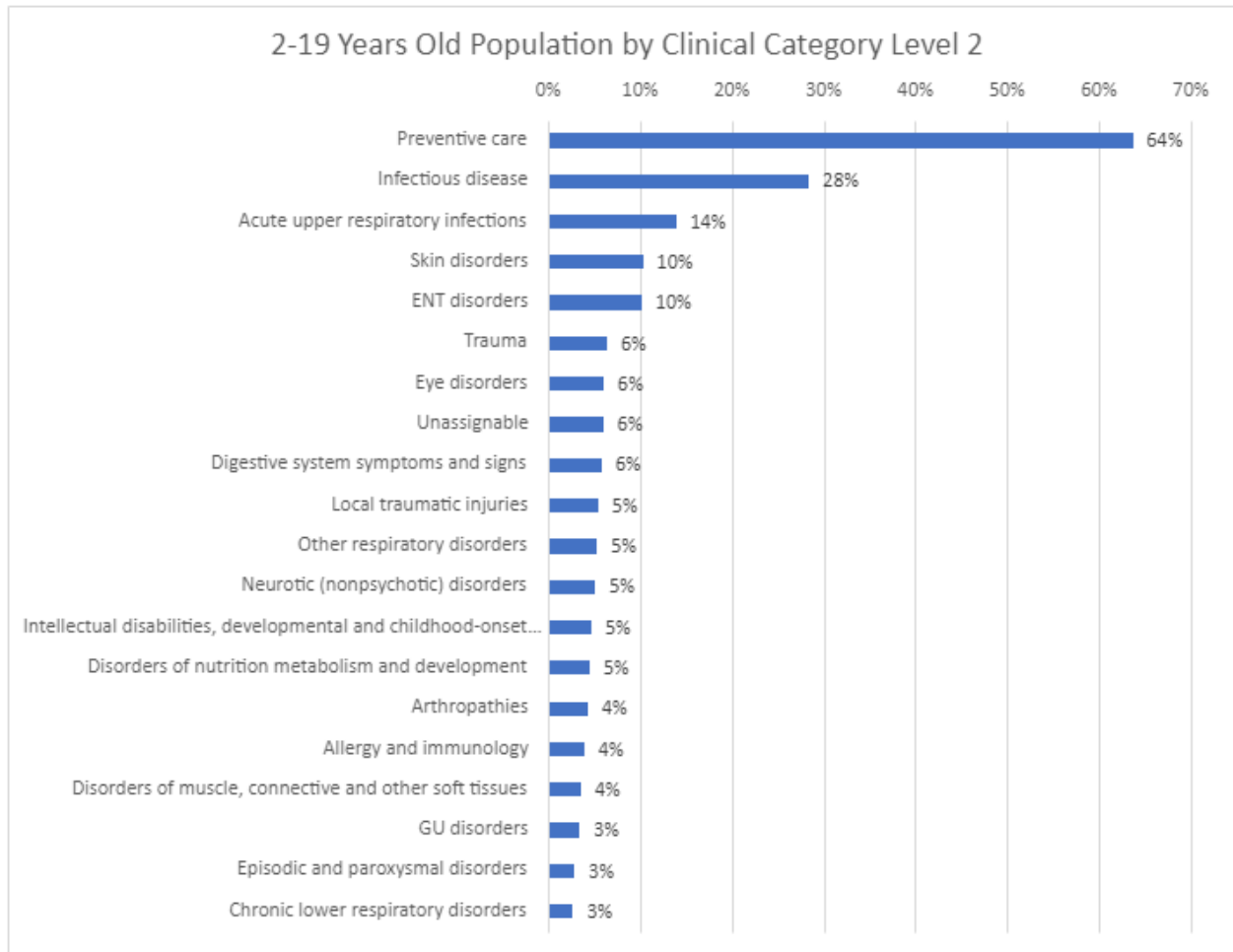




H. Children and Adolescents (ages 2-19)

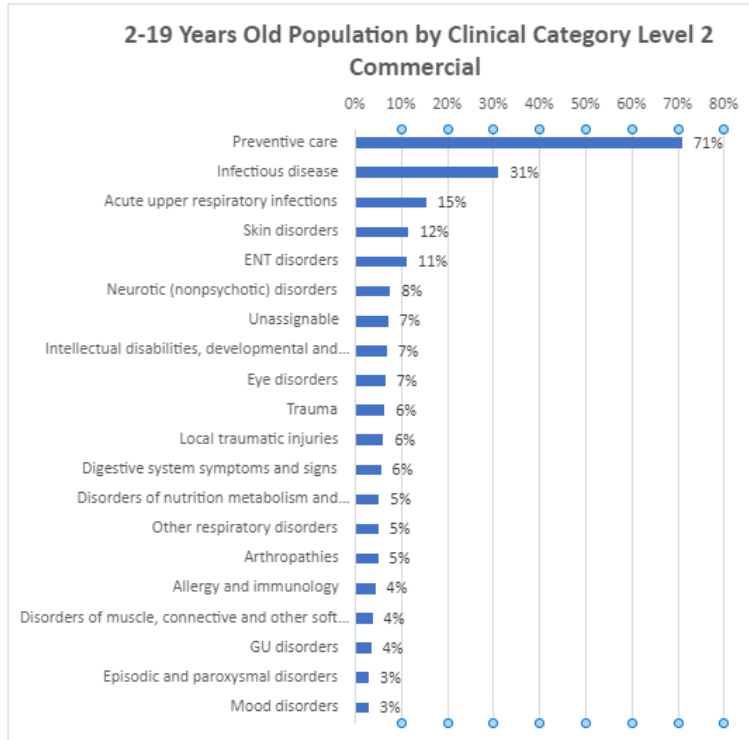
Data Source: CareVio Claims Data

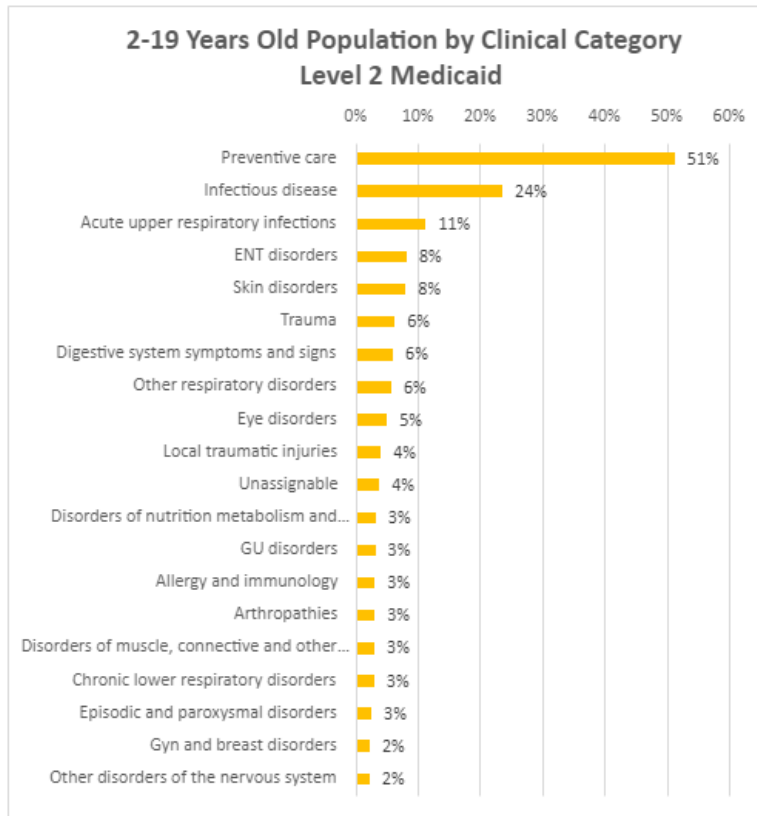
1. Children and Adolescent Population – Top 20 Physical Health Conditions



2. Children and Adolescents Clinical Category by Line of Business

Data Source: CareVio Claims Data





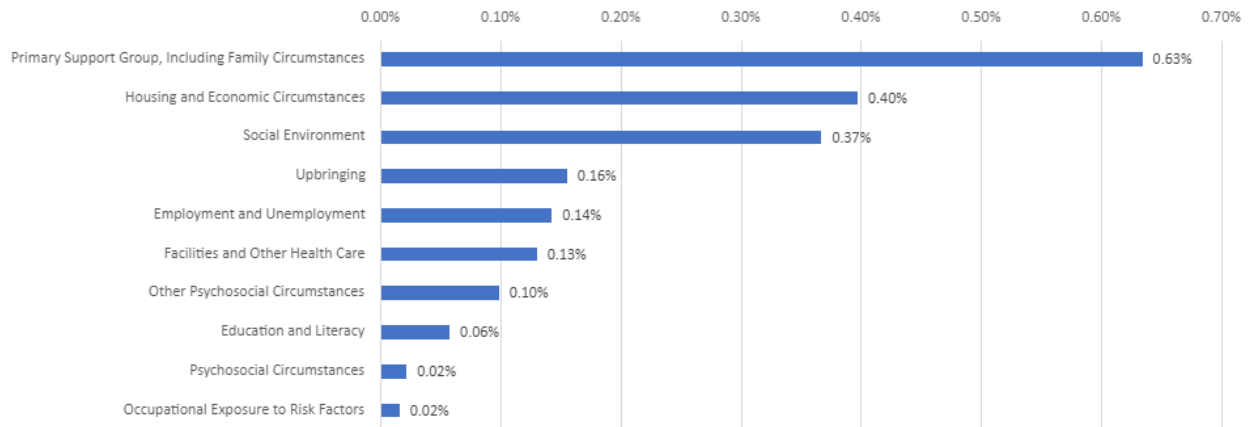
I. Social Determinants of Health

Data Source: CareVio Claims Data

1. Total Population

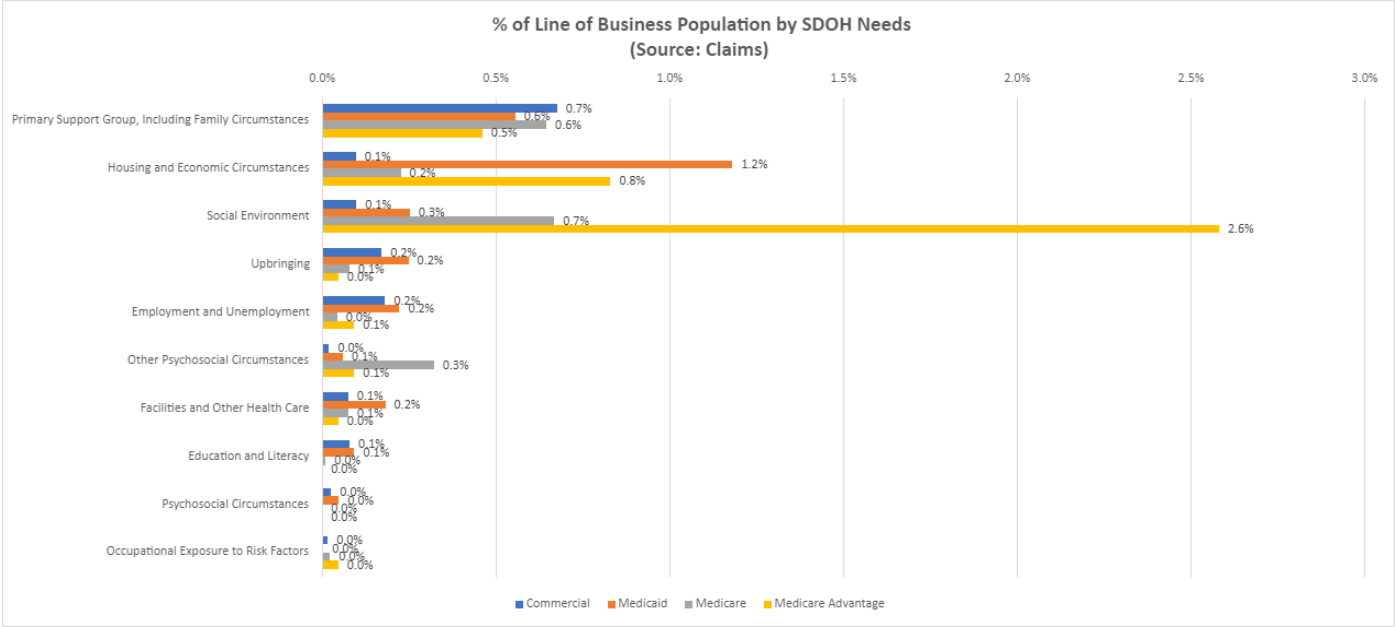
| Social Determinants of Health | PLR Mbr % |
|---|--------------|
| Primary Support Group, Including Family Circumstances | .063% |
| Housing and Economic Circumstances | 0.40% |
| Social Environment | 0.37% |
| Upbringing | 0.16% |
| Employment and Unemployment | 0.14% |
| Facilities and other Health Care | 0.13% |
| Other Psychosocial Circumstances | 0.10% |
| Education and Literacy | 0.06% |
| Psychosocial Circumstances | 0.02% |
| Occupational Exposure to Risk Factors | 0.02% |
| TOTAL | 2.03% |

**% of Total Population by SDOH Needs
(Source: Claims)**



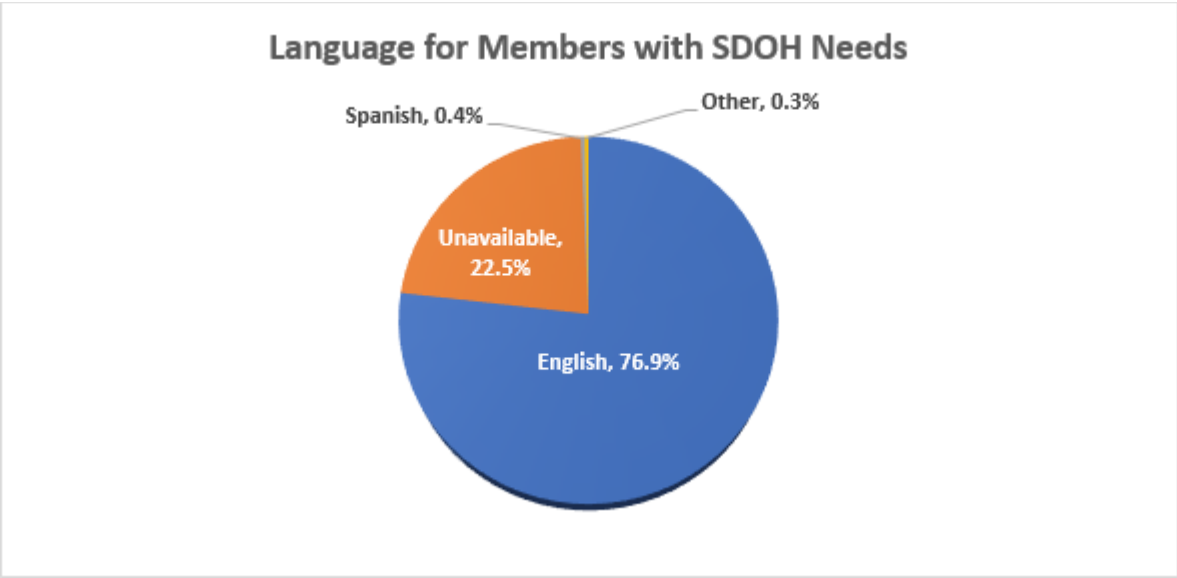
2. By Line of Business

| SDOH Needs | Commercial | Medicaid | Medicare | Medicare Advantage | Grand Total |
|---|-------------|-------------|-------------|--------------------|--------------|
| Primary Support Group, Including Family Circumstances | 0.7% | 0.6% | 0.6% | 0.5% | 0.63% |
| Housing and Economic Circumstances | 0.1% | 1.2% | 0.2% | 0.8% | 0.40% |
| Social Environment | 0.1% | 0.3% | 0.7% | 2.6% | 0.37% |
| Upbringing | 0.2% | 0.2% | 0.1% | 0.0% | 0.16% |
| Employment and Unemployment | 0.2% | 0.2% | 0.0% | 0.1% | 0.14% |
| Other Psychosocial Circumstances | 0.0% | 0.1% | 0.3% | 0.1% | 0.13% |
| Facilities and Other Health Care | 0.1% | 0.2% | 0.1% | 0.0% | 0.10% |
| Education and Literacy | 0.1% | 0.1% | 0.0% | 0.0% | 0.06% |
| Psychosocial Circumstances | 0.0% | 0.0% | 0.0% | 0.0% | 0.02% |
| Occupational Exposure to Risk Factors | 0.0% | 0.0% | 0.0% | 0.0% | 0.02% |
| TOTAL | 1.5% | 2.9% | 2.0% | 4.1% | 2.03% |

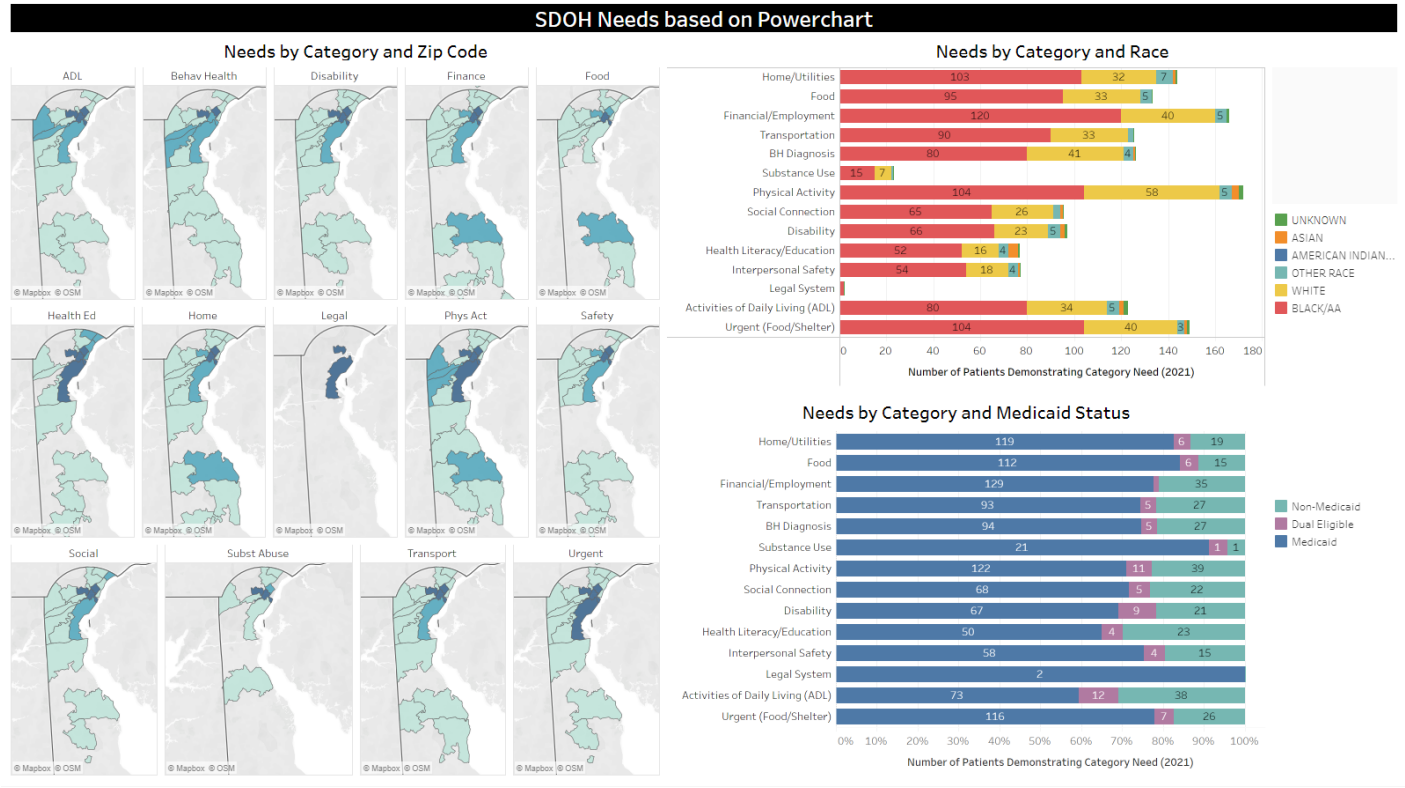


3. *Language Literacy among Members with SDOH Needs*

| Language | Total% |
|--------------|----------------|
| English | 76.9% |
| Unavailable | 22.5% |
| Spanish | 0.4% |
| Other | 0.3% |
| TOTAL | 100.00% |



4. Medicaid – SDOH Needs from PowerChart



J. Members with Disabilities

Data Source: CareVio Claims Data

| | Intellectual Disabilities Member Count | Pervasive and Specific Developmental Disorders | TOTAL |
|--------------------|--|--|-------------|
| Commercial | 53 | 613 | 666 |
| Medicaid | 73 | 160 | 233 |
| Medicare | 283 | 234 | 517 |
| Medicare Advantage | 6 | 4 | 10 |
| TOTAL | 415 | 1,011 | 1426 |

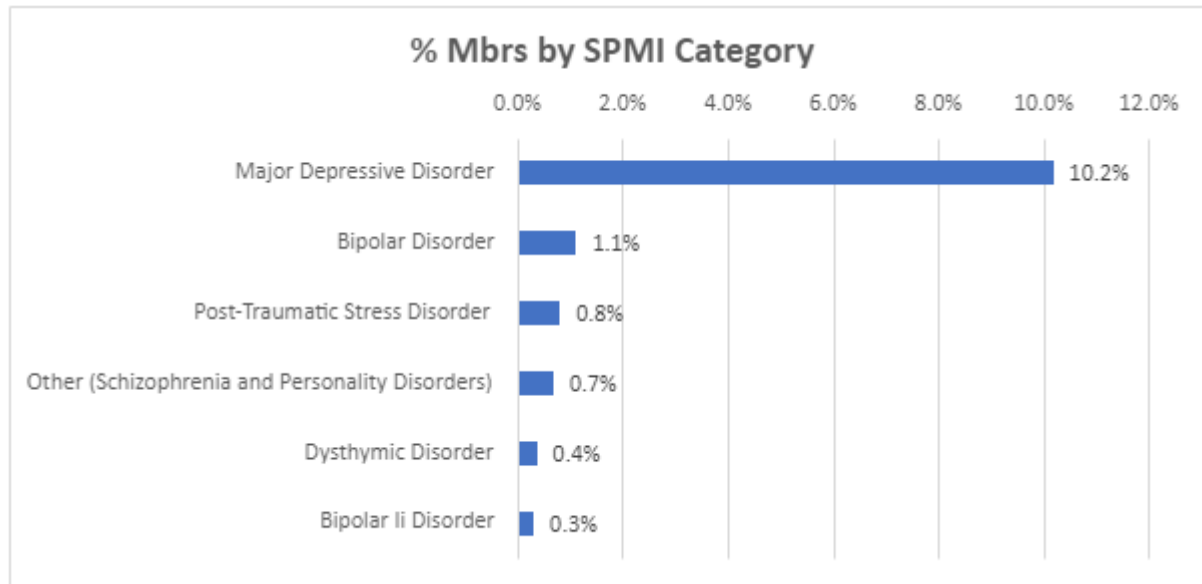
Total Population with Disabilities accounts for 1.1% of total CareVio Population

K. Members with Serious and Persistent Mental Illness

Data Source: CareVio Claims Data

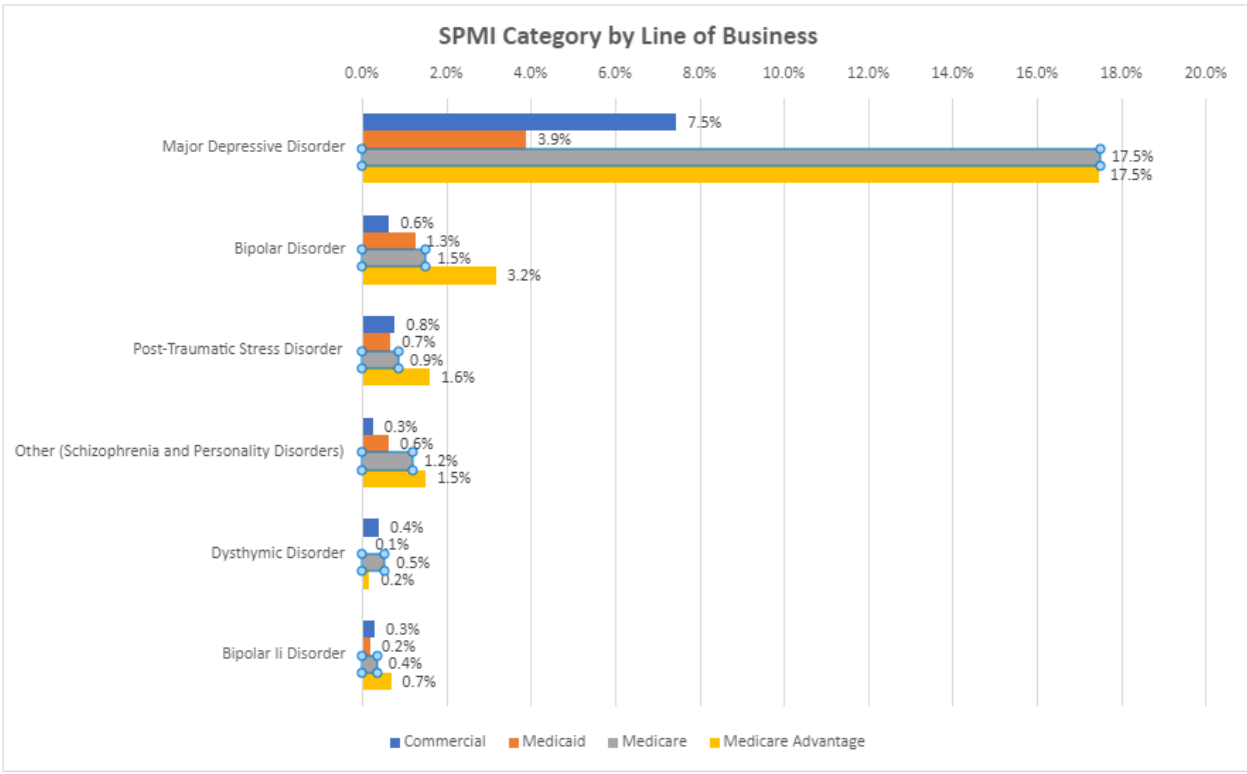
5. Total Population

| SPMI CATEGORY | Member Count | % of Total members with SPMI Claims | % of Total Population |
|--|----------------|-------------------------------------|-----------------------|
| Major Depressive Disorder | 12,199 | 87.6% | 10.2% |
| Bipolar Disorder | 1,345 | 9.7% | 1.1% |
| Post-Traumatic Stress Disorder | 967 | 6.9% | 0.8% |
| Multiple (Schizophrenia and Personality Disorders) | 821 | 5.9% | 0.7% |
| Dysthymic Disorder | 442 | 3.2% | 0.4% |
| Bipolar II Disorder | 3714 | 2.7% | 0.3% |
| Members with SPMI Diagnoses (Claims) | 13,926 | | |
| TOTAL POPULATION (denominator) | 119,813 | 11.6% | |



6. By Line of Business

| SPMI Category | Commercial | Medicaid | Medicare | Medicare Advantage | Total |
|---|------------|----------|----------|--------------------|-------|
| Major Depressive Disorder | 7.5% | 3.9% | 17.5% | 17.5% | 10.2% |
| Bipolar Disorder | 0.6% | 1.3% | 1.5% | 3.2% | 1.1% |
| Post-Traumatic Stress Disorder | 0.8% | 0.7% | 0.9% | 1.6% | 0.8% |
| Other (Schizophrenia and Personality Disorders) | 0.3% | 0.6% | 1.2% | 1.5% | 0.7% |
| Dysthymic Disorder | 0.4% | 0.1% | 0.5% | 0.2% | 0.4% |
| Bipolar II Disorder | 0.3% | 0.2% | 0.4% | 0.7% | 0.3% |



L. Other Subpopulations

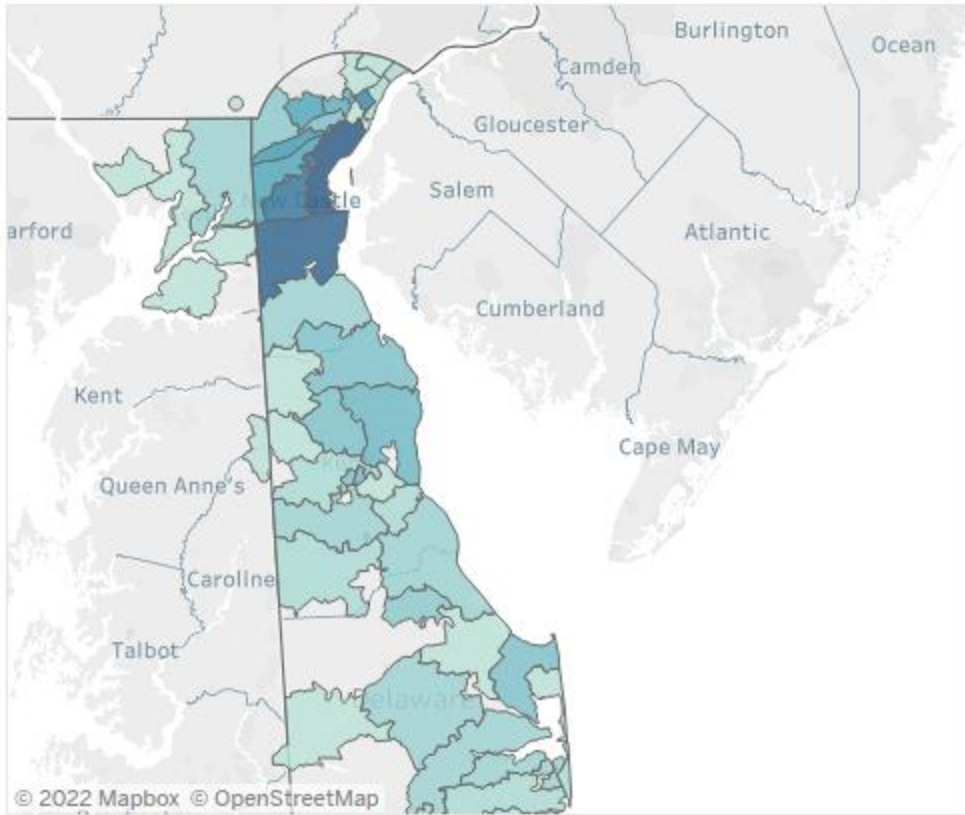
Data Source: CareVio Program Data (enrolled in program)

1. Comprehensive Case Management (CCM)

CCM Age Distribution

| Enrolled Pgm Desc | Member Age Distribution | Mbr Count | Mbr % |
|-------------------|-------------------------|------------|-------------|
| CCM | Age >= 65 | 113 | 62.09% |
| CCM | 60-64 | 20 | 10.99% |
| CCM | 50-59 | 27 | 14.84% |
| CCM | 40-49 | 12 | 6.59% |
| CCM | 30-39 | 5 | 2.75% |
| CCM | 24-29 | 3 | 1.65% |
| CCM | 20-23 | 0 | 0% |
| CCM | 2-19 | 2 | 1.10% |
| CCM | <2 | 0 | 0% |
| TOTAL | | 182 | 100% |

Patient Distribution



High Risk CCM Race Distribution

| Race | Member Count | Member % |
|---------------------------|--------------|-------------|
| White | 122 | 67.03% |
| Black or African American | 56 | 30.77% |
| Other | 3 | 1.65% |
| Asian | 1 | 0.55% |
| TOTAL | 182 | 100% |

High Risk CCM Ethnicity Distribution

| Ethnicity | Member Count | Member % |
|------------------------|--------------|-------------|
| Not Hispanic or Latino | 147 | 80.77% |
| Not Available | 25 | 13.74% |
| Hispanic or Latino | 5 | 2.75% |
| Unknown | 5 | 2.75% |
| TOTAL | 182 | 100% |

High Risk CCM SPMI Distribution

| SPMI | Member Count | Member % |
|---------------------------------|--------------|-------------|
| N/A | 108 | 51.18% |
| Major Depressive Disorder | 70 | 33.18% |
| Bipolar Disorder | 12 | 5.69% |
| Post-Traumatic Stress Disorder | 7 | 3.32% |
| Schizophrenia | 4 | 1.90% |
| Schizoaffective Disorder | 3 | 1.42% |
| Dysthymic Disorder | 2 | 0.95% |
| Unspecified Schizophrenia | 1 | 0.47% |
| Personality Disorder | 1 | 0.47% |
| Other Bipolar Disorder | 1 | 0.47% |
| Delusional Disorders | 1 | 0.47% |
| Borderline Personality Disorder | 1 | 0.47% |
| TOTAL | 182 | 100% |

High Risk CCM SDOH

| SPMI | Member Count | Member % |
|---|--------------|-------------|
| N/A | 163 | 87.63% |
| Social Environment | 12 | 6.45% |
| Facilities and Other Health Care | 4 | 2.15% |
| Upbringing | 2 | 1.08% |
| Primary Support group, Including Family Circumstances | 2 | 1.08% |
| Housing and Economic Circumstances | 2 | 1.08% |
| Employment and Unemployment | 1 | 0.54% |
| TOTAL | 182 | 100% |

High Risk CCM Disabilities Distribution

| SDOH | Member Count |
|----------------------------------|--------------|
| Childhood onset fluency disorder | 1 |
| TOTAL | 1 |

High Risk CCM Member Enrollment by Line of Business

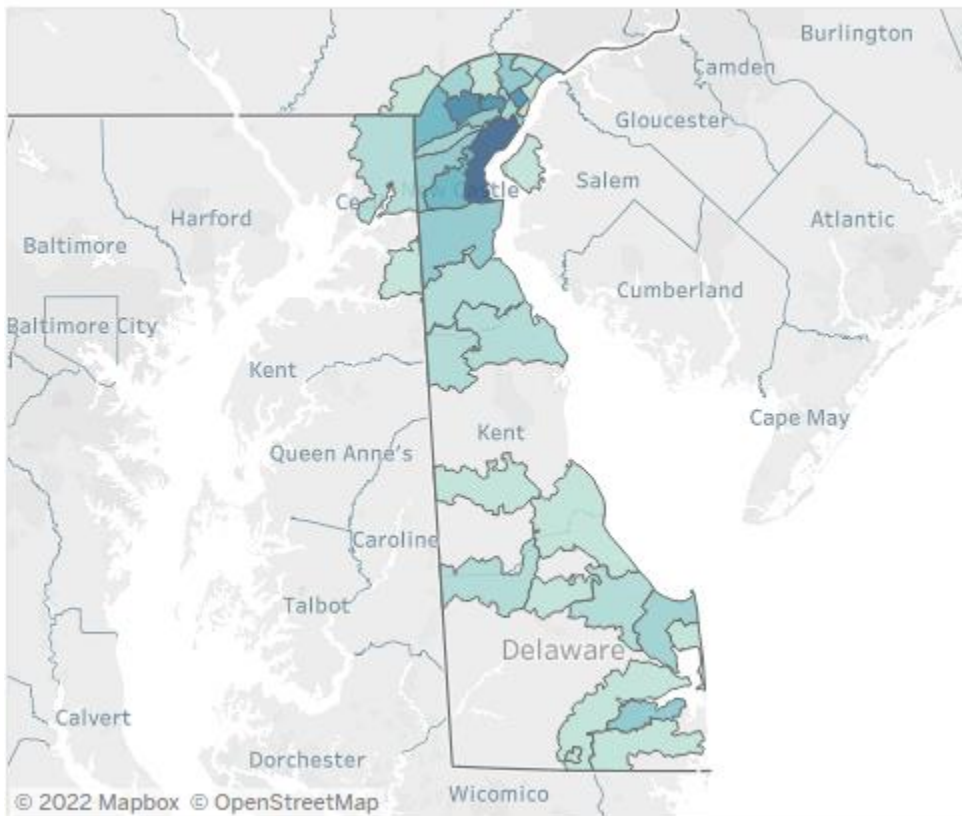
| Line of Business | Member Count | Member % |
|--------------------|--------------|---------------|
| Medicare | 122 | 76.82% |
| Medicaid | 38 | 17.51% |
| Medicare Advantage | 10 | 2.73% |
| Commercial | 21 | 2.94% |
| TOTAL | 182 | 100.0% |

2. High Risk Congestive Heart Failure (CHF)

CHF Age Distribution

| Enrolled Pgm Desc | Member Age Distribution | Mbr Count | Mbr % |
|-------------------|-------------------------|------------|-------------|
| CHF | Age >= 65 | 97 | 82.20% |
| CHF | 60-64 | 6 | 5.08% |
| CHF | 50-59 | 10 | 8.47% |
| CHF | 40-49 | 3 | 2.54% |
| CHF | 30-39 | 1 | 0.85% |
| CHF | 24-29 | 1 | 0.85% |
| CHF | 20-23 | 0 | 0% |
| CHF | 2-19 | 0 | 0% |
| CHF | <2 | 0 | 0% |
| TOTAL | | 118 | 100% |

Patient Distribution



CHF Race Distribution

| Race | Member Count | Member % |
|---------------------------|--------------|-------------|
| White | 80 | 67.80% |
| Black or African American | 34 | 28.81% |
| Other | 3 | 2.54% |
| Asian | 1 | 0.85% |
| TOTAL | 118 | 100% |

CHF Ethnicity Distribution

| Ethnicity | Member Count | Member % |
|------------------------|--------------|-------------|
| Not Hispanic or Latino | 102 | 86.44% |
| Not Available | 12 | 10.17% |
| Hispanic or Latino | 4 | 3.39% |
| TOTAL | 118 | 100% |

CHF SDOH Distribution

| SDOH | Member Count | Member % |
|---------------------------------------|--------------|-------------|
| N/A | 106 | 89.83% |
| Social Environment | 6 | 5.08% |
| Facilities and other Health Care | 2 | 1.69% |
| Housing and Economic Circumstances | 3 | 2.54% |
| Occupational Exposure to Risk Factors | 1 | 0.85% |
| TOTAL | 118 | 100% |

CHF SPMI

| SPMI | Member Count | Member % |
|--------------------------------|--------------|-------------|
| N/A | 89 | 72.95% |
| Major Depressive Disorder | 26 | 21.31% |
| Bipolar Disorder | 2 | 1.64% |
| Post-Traumatic Stress Disorder | 3 | 2.46% |
| Dysthymic Disorder | 2 | 1.64% |
| TOTAL | 118 | 100% |

CHF Member Enrollment by Line of Business

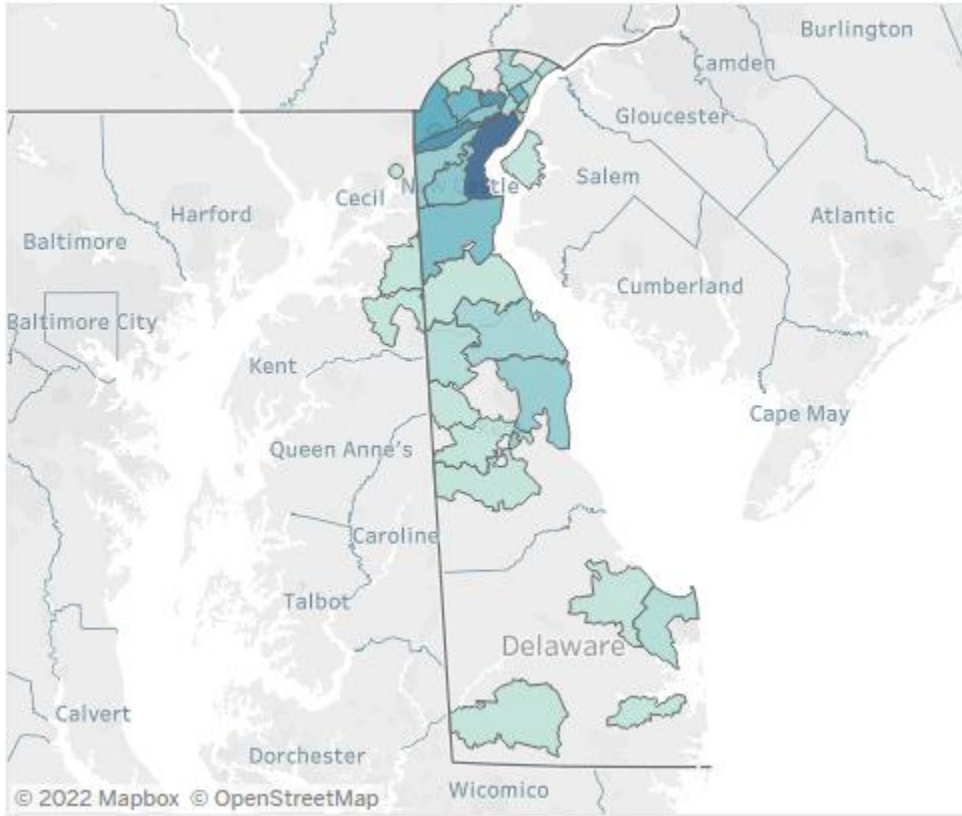
| Line of Business | Member Count | Member % |
|--------------------|--------------|----------------|
| Medicare | 90 | 56.90% |
| Medicaid | 19 | 20.24% |
| Medicare Advantage | 11 | 21.90% |
| Commercial | 4 | 0.95% |
| TOTAL | 118 | 100.00% |

3. High Risk Diabetes

High Risk Diabetes Age Distribution

| Enrolled Pgm Desc | Member Age Distribution | Mbr Count | Mbr % |
|-------------------|-------------------------|------------|-------------|
| Diabetes | Age >= 65 | 48 | 42.11% |
| Diabetes | 60-64 | 15 | 13.16% |
| Diabetes | 50-59 | 27 | 23.68% |
| Diabetes | 40-49 | 15 | 13.16% |
| Diabetes | 30-39 | 6 | 5.26% |
| Diabetes | 24-29 | 1 | 0.88% |
| Diabetes | 20-23 | 0 | 0% |
| Diabetes | 2-19 | 2 | 1.75% |
| Diabetes | <2 | 0 | 0% |
| TOTAL | | 114 | 100% |

Patient Distribution



High Risk Diabetes Race Distribution

| Race | Member Count | Member % |
|----------------------------------|--------------|-------------|
| White | 49 | 42.98% |
| Black or African American | 54 | 47.37% |
| Other | 4 | 3.51% |
| Unknown | 2 | 1.75% |
| N/A | 2 | 1.75% |
| American Indian or Alaska Native | 1 | 0.88% |
| Asian | 2 | 1.75% |
| TOTAL | 114 | 100% |

High Risk Diabetes Ethnicity Distribution

| Ethnicity | Member Count | Member % |
|------------------------|--------------|-------------|
| Not Hispanic or Latino | 96 | 84.21% |
| Not Available | 9 | 7.89% |
| Hispanic or Latino | 7 | 6.14% |
| Unknown | 2 | 1.75% |
| TOTAL | 114 | 100% |

High Risk Diabetes SDOH Distribution

| SDOH | Member Count | Member % |
|---|--------------|-------------|
| N/A | 110 | 96.49% |
| Social Environment | 3 | 2.63% |
| Primary Support Group, Including Family Circumstances | 1 | 0.88% |
| TOTAL | 114 | 100% |

High Risk Diabetes SPMI

| SPMI | Member Count | Member % |
|--------------------------------|--------------|-------------|
| N/A | 83 | 66.94% |
| Major Depressive Disorder | 28 | 22.58% |
| Bipolar Disorder | 5 | 4.03% |
| Post-Traumatic Stress Disorder | 3 | 2.42% |
| Dysthymic Disorder | 1 | 0.81% |
| Other Bipolar Disorder | 2 | 1.61% |
| TOTAL | 118 | 100% |

High Risk Diabetes Disabilities Distribution

| SDOH | Member Count | Member % |
|------------------------------------|--------------|----------|
| Moderate intellectual Disabilities | 1 | 0.008% |
| TOTAL | 114 | |

High Risk Diabetes Member Enrollment by Line of Business

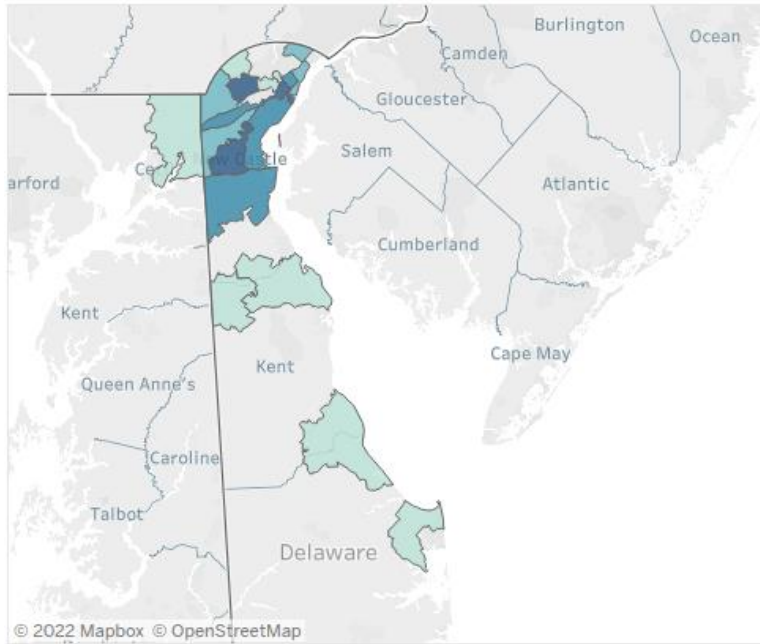
| Line of Business | Member Count | Member % |
|--------------------|--------------|-------------|
| Medicare | 49 | 50.77% |
| Medicaid | 29 | 32.92% |
| Medicare Advantage | 12 | 5.85% |
| Commercial | 29 | 10.46% |
| TOTAL | 114 | 100% |

4. High Risk Chronic Obstructive Pulmonary Disease (COPD)

High Risk COPD Age Distribution

| Enrolled Pgm Desc | Member Age Distribution | Mbr Count | Mbr % |
|-------------------|-------------------------|-----------|-------------|
| COPD | Age >= 65 | 30 | 75 % |
| COPD | 60-64 | 4 | 10% |
| COPD | 50-59 | 6 | 15% |
| COPD | 40-49 | 0 | 0% |
| COPD | 30-39 | 0 | 0% |
| COPD | 24-29 | 0 | 0% |
| COPD | 20-23 | 0 | 0% |
| COPD | 2-19 | 0 | 0% |
| COPD | <2 | 0 | 0% |
| TOTAL | | 40 | 100% |

Patient Distribution



High Risk COPD Race Distribution

| Race | Member Count | Member % |
|---------------------------|--------------|----------------|
| White | 29 | 72.50% |
| Black or African American | 10 | 25.00% |
| Other | 1 | 2.50% |
| TOTAL | 40 | 100.00% |

High Risk COPD Ethnicity Distribution

| Ethnicity | Member Count | Member % |
|------------------------|--------------|-------------|
| Not Hispanic or Latino | 36 | 90.00% |
| Not Available | 3 | 7.50% |
| Hispanic or Latino | 1 | 2.50% |
| TOTAL | 40 | 100% |

High Risk COPD SDOH Distribution

| SDOH | Member Count | Member % |
|---|--------------|----------------|
| N/A | 33 | 82.50% |
| Social Environment | 4 | 10.00% |
| Primary Support Group, Including Family Circumstances | 1 | 5.00% |
| Housing and Economic Circumstances | 2 | 2.50% |
| TOTAL | 40 | 100.00% |

High Risk COPD SPMI

| SPMI | Member Count | Member % |
|---------------------------|--------------|-------------|
| N/A | 23 | 56.10% |
| Major Depressive Disorder | 15 | 36.59% |
| Bipolar Disorder | 2 | 4.88% |
| Personality Disorder | 1 | 2.44% |
| TOTAL | 40 | 100% |

High Risk COPD Disabilities Distribution

| SDOH | Member Count | Member % |
|--------------|--------------|----------|
| | 0 | |
| TOTAL | 0 | |

High Risk COPD Member Enrollment by Line of Business

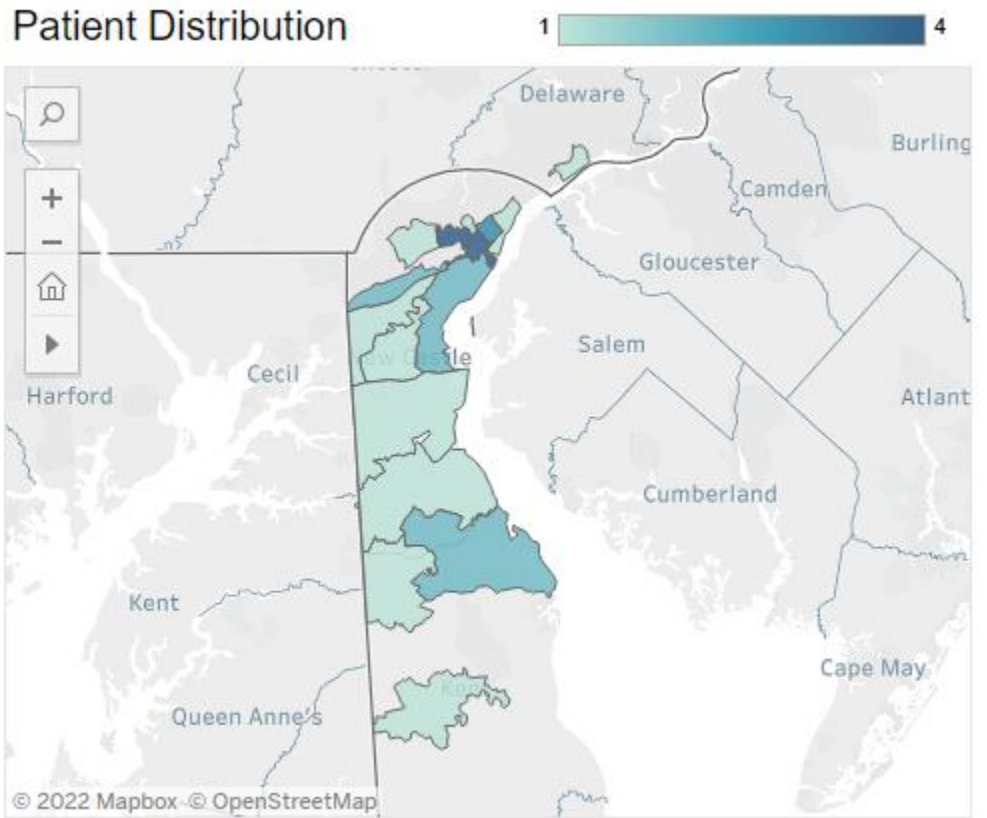
| Line of Business | Member Count | Member % |
|--------------------|--------------|-------------|
| Medicare | 29 | 87.28% |
| Medicaid | 10 | 11.84% |
| Medicare Advantage | 1 | 0.88% |
| Commercial | 0 | 0% |
| TOTAL | 40 | 100% |

5. High Risk Pregnancy

High Risk Pregnancy Age Distribution

| Enrolled Pgm Desc | Member Age Distribution | Mbr Count | Mbr % |
|-------------------|-------------------------|-----------|-------------|
| Pregnancy | 30-39 | 13 | 48.15% |
| Pregnancy | 24-39 | 9 | 33.33% |
| Pregnancy | 20-23 | 4 | 14.81% |
| Pregnancy | 2-19 | 1 | 3.70% |
| TOTAL | | 27 | 100% |

Patient Distribution



High Risk Pregnancy Race Distribution

| Race | Member Count | Member % |
|---------------------------|--------------|----------------|
| White | 4 | 14.81% |
| Black or African American | 18 | 66.67% |
| N/A | 3 | 11.11% |
| Other | 2 | 7.41% |
| TOTAL | 27 | 100.00% |

High Risk Pregnancy Ethnicity Distribution

| Ethnicity | Member Count | Member % |
|------------------------|--------------|----------------|
| Not Hispanic or Latino | 21 | 77.78% |
| Not Available | 3 | 11.11% |
| Hispanic or Latino | 3 | 11.11% |
| TOTAL | 27 | 100.00% |

High Risk Pregnancy SDOH Distribution

| SDOH | Member Count | Member % |
|------------------------------------|--------------|-------------|
| N/A | 24 | 85.71% |
| Social Environment | 1 | 3.57% |
| Upbringing | 1 | 3.57 |
| Housing and Economic Circumstances | 2 | 7.14% |
| TOTAL | 28 | 100% |

**Member can be in more than 1 SDOH category

High Risk Pregnancy SPMI

| SPMI | Member Count | Member % |
|--------------------------------|--------------|----------------|
| N/A | 22 | 73.33% |
| Major Depressive Disorder | 4 | 13.33% |
| Post-Traumatic Stress Disorder | 2 | 6.67% |
| Bipolar Disorder | 2 | 6.67% |
| TOTAL | 30 | 100.00% |

**Member can be in more than 1 SPMI category

High Risk Pregnancy Disabilities Distribution

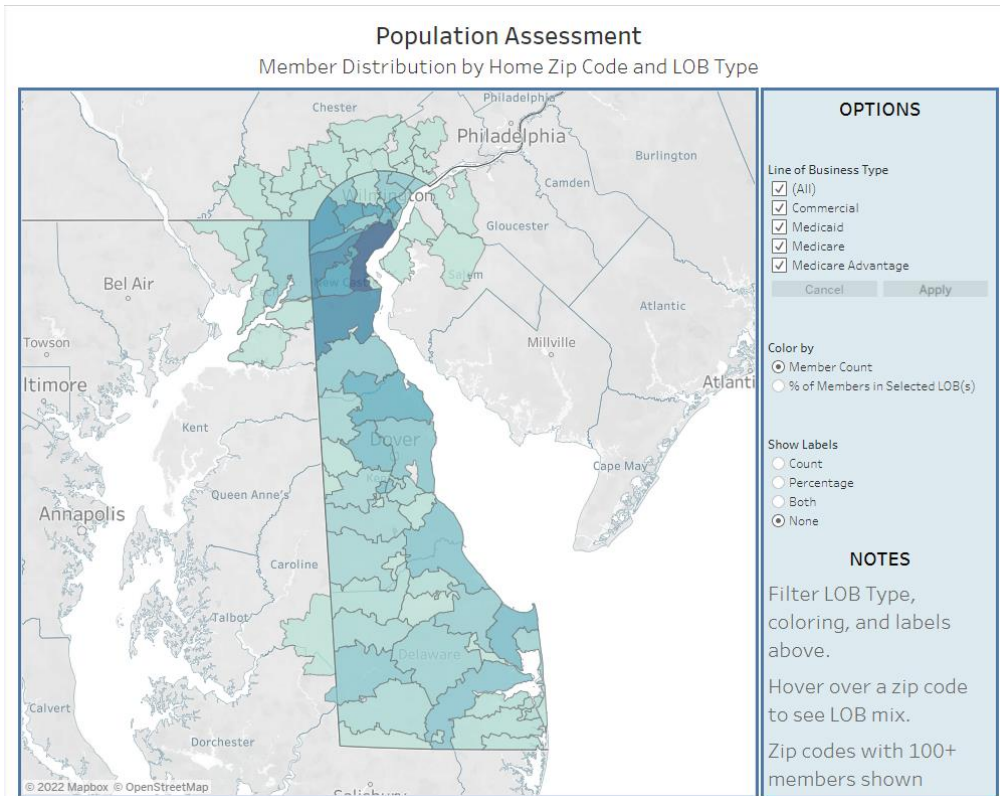
| SDOH | Member Count | Member % |
|--------------|--------------|----------|
| | 0 | |
| TOTAL | 0 | |

High Risk Pregnancy Member Enrollment by Line of Business

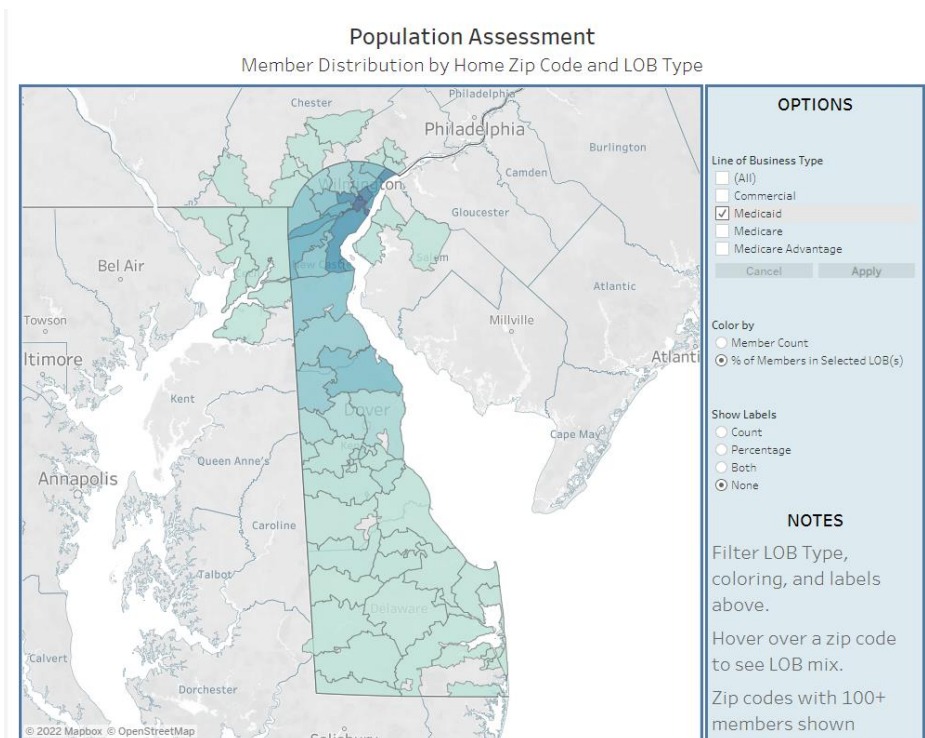
| Line of Business | Member Count | Member % |
|--------------------|--------------|-------------|
| Medicare | 1 | 3.45% |
| Medicaid | 20 | 68.97% |
| Medicare Advantage | 0 | 0% |
| Commercial | 8 | 27.59% |
| TOTAL | 29 | 100% |

*Members can be enrolled in more than one LOB during 2021

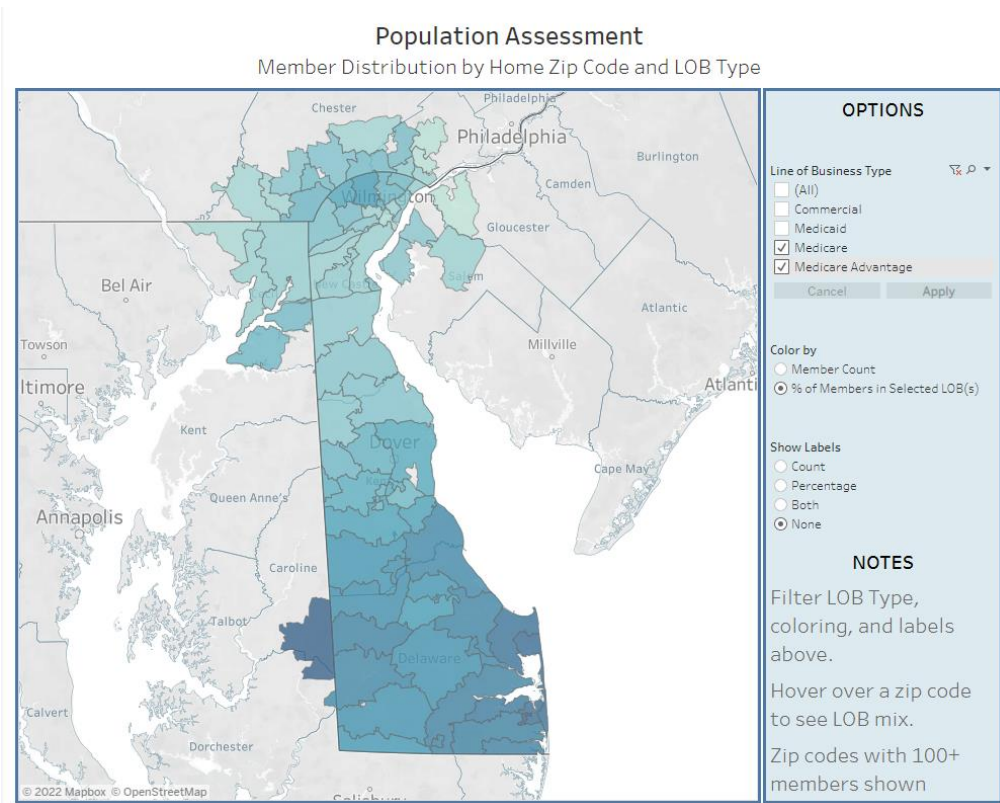
M. Population Assessment Heat Map



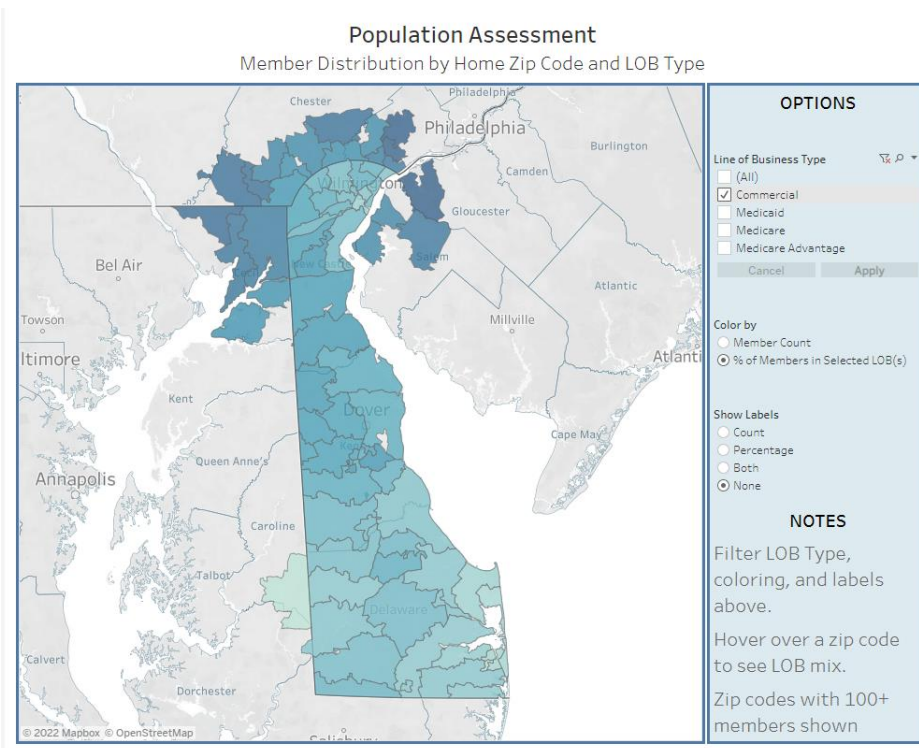
Medicaid:



Medicare



Commercial



IV. Executive Summary

The CareVio Population Assessment for 2021 summarizes the analysis and comparison of CareVio member and regional data. This analysis focused on targeted populations, subpopulations, disease management programs, and Social Determinants of Health (SDOH). Data specific to Delaware was utilized for comparison analyses as the CareVio population primarily resides in the state of Delaware.

The total population for those within the CareVio overall population for 2021 was 119,813 members. Within this population, females were more prevalent than males, aligning with the data supplied from the state of Delaware resources. The CareVio population in 2021 was comprised primarily in the greater than or equal to 65 years of age category. The second most populated age range was 2-19 years old. In the Commercial and Medicaid population, the age range of 2-19 represented the majority of the population. As expected, the Medicare population noted the highest age group of 65 years of age and greater. CareVio members were primarily identified with a race of White, aligning with Delaware statewide data. The second most identified race was noted as African American. Null/Unknown was noted as the third most identified race. The Null/Unknown category represents those who do not wish to respond to race identification. Within the Medicare Advantage and Medicaid population, African American was the most predominant race, while Commercial and Medicare populations identified White as the predominant race. As with the vast majority of analysis depicted above, ethnicity and primary language of the CareVio population aligned with Delaware state data.

An analysis of physical conditions among the CareVio population provided insight to the changes in healthcare since the COVID-19 public health emergency began in 2020. The most frequent number of conditions based on claims data showed that preventative care was a top priority in the year 2021 after the initial COVID-19 shut down. Infectious disease was the second most frequent condition. This result is likely due to the COVID-19 infections secondary to the second and third surges that occurred during 2021. In retrospect, the COVID-19 public health emergency resulted in individuals delaying or avoiding medical care during the period of 2020-2021. The Medicare Advantage population showed that Endocrine and Cardiovascular were the most frequent conditions after preventative care. Similarly, these conditions were also among the top ten most frequently billed claims for Commercial and Medicaid patients.

Obtaining Social Determinant of Health (SDOH) screening data among members requires that this information is being captured during office visits, hospital utilization or while in community settings. This data is not collected commonly in claims, therefore resulting in a low percentage for the total CareVio population. The determinant "Primary Support Group Including Family Circumstances" in the overall population was the most identified. Within this category claims code *Z63.4 Disappearance and death of a family member* was the most reported determinant. This data is likely associated with COVID-19 related deaths. Spousal problems and stressful life events were identified as the 2nd and 3rd highest SDOH in the overall population.

Within the Medicaid population, housing and economic circumstances was the highest determinant reported. Of the 209 homelessness SDOH reported in the total population, 183 were reported in the Medicaid population. Given that claims data is limited, the data source of PowerChart

provided the ability to evaluate SDOH needs by category, race, and Medicaid members. The needs that were identified aligned with the other data obtained for this report; highlighting that the highest need areas were those of low income, known housing inequalities and lack of primary care providers.

There was a total of 79 determinants related to social exclusion, 51 of these were reported in the Medicare Advantage population. This finding directly correlates with the elderly being socially isolated secondary to the COVID-19 pandemic. As noted by Grolli, et al. (2021), social isolation secondary to the COVID-19 pandemic places the elderly population at risk for mental health disorders, specifically Major Depressive Disorder (MDD).

Language literacy was evaluated amongst members reporting SDOH. English was the most common language reported with 'unavailable' noted as the second most common response. This data aligns with the overall total population noting 'unavailable' as the second highest response amongst all claims data. Of the 608 SDOH reports of "Problems related to Medical Facilities and Other Health Care", 100 of these reports were for 'awaiting admission to adequate facility elsewhere'. This reported determinant may be related to the need for admission to post-acute facilities post hospitalization during COVID spikes when facilities were not accepting patients or had limited bed space secondary to outbreaks.

The total CareVio population that identified with disabilities accounts for 1.1%. The most frequent reported disability was related to "Pervasive and Specific Developmental Disorders". Intellectual and Pervasive Disabilities had almost identical data counts for both categories in the Medicare population. This finding may be due to those members receiving disability who spend two years on Medicaid then transfer to Medicare as their primary insurance provider. The members identified with a "Pervasive and Specific Developmental Disorder" were primarily covered by a Commercial insurance. The majority of the diagnoses within the "Pervasive and Specific Developmental Disorder" category, such as Autism, Asperger's affect younger populations. This finding may be due to younger members covered on parental insurance.

Claims data identified that 11.6% of the total member population reported a Severe and Persistent Mental Illness (SPMI) diagnosis. Within that group, the most frequent mental illness identified was Major Depressive Disorder (MDD). Medicare and Medicare Advantage had the highest population associated with MDD. Coupling with the increase in the social exclusion determinant reported since the COVID-19 pandemic began, this is not unexpected.

Within the subpopulations of members enrolled in a different CareVio programs, many commonalities were observed. The breakdown below will provide each CareVio program and common denominators associated within the program population while comparing to the statewide Delaware data and overall CareVio population.

Comprehensive Case Management: Members enrolled in the Comprehensive Case Management programs were most often greater than or equal to 65 years of age, and White. Members in this program primarily resided within the zip codes of 19720 and 19709. MDD was reported most commonly in this population, which aligns with the data previously reported above. Social Environment was the most frequently reported SDOH, which correlates with the higher elderly population, social isolation secondary to COVID, and the increase report of depression.

High Risk Congestive Heart Failure: Members enrolled in a high-risk congestive heart failure program were most often greater than or equal to 65 years of age, and White. Members in this program primarily resided in the zip code of 19720. MDD was frequently reported in this population which aligns with the data previously reported above. Social Environment was the most frequently reported SDOH, which correlated with the higher elderly population, social isolation secondary to COVID, and the increase report of depression.

High Risk Diabetes: Members enrolled in a high-risk diabetes program were most often greater than or equal to 65 years of age, and African American. Members in this program primarily resided in the zip code of 19720. Corresponding to the Delaware Department of Health and Social Services Chronic Disease in Delaware Facts and Figures from 2019 (Delaware Department of Health and Social Services, Division of Public Health, 2019), the greatest population of those living in Delaware with Diabetes are those who are African American and of the age 65 and older.

High Risk Chronic Obstructive Pulmonary Disease: Members enrolled in a high-risk chronic obstructive pulmonary disease program were most often greater than or equal to 65 years of age, and White. Members in this program primarily resided in the zip codes of 19801, 19701, and 19808. According to America's Health Rankings (America's Health Rankings, 2022), Delaware ranks 39th in air pollution compared to the continental United States. The zip codes identified are located among the worst areas of air quality (America's Health Rankings, 2022) in Delaware along with the highest percentage of adult smokers (Pearce, et al., 2019) within that zip code.

High Risk Pregnancy: Members enrolled in a high-risk pregnancy program were most often in the age range of 30-39. Members in this program primarily resided in the zip code 19805. African American and those attributed to a Medicaid insurance plan were of the greatest prevalence.

When evaluating racial bias and health equity, there is direct correlation between specific race and ethnicity in zip codes within Delaware. In Northern New Castle county, zip codes 19805, 19802, 19801 and 19720 have high ratios of non-White residents. CareVio recognizes that to achieve Health Equity in Delaware, these areas require more resources than others. CareVio has embedded Registered Nurse Case Managers within Primary Care Practices where SDOH reports are high, Racial disparities are identified, and Medicaid populations are noted to be more prevalent. Additionally, the lower geographic portion of Delaware, is noted to have lower health equity due to limited access to primary care. "Of the 3 counties in Delaware state, the entirety of Sussex and Kent county and a few areas of New Castle County have been federally designated as 'medically underserved' (Malayala, et al., 2021, p.1). Malayala, et al. (2021) further notes that the highest racially ethnic, lowest economical geographical areas and highest Medicaid populated areas are within the primary care shortage designated areas within the state.

The geocoding heat maps of the CareVio total population assessment provide insight that the most populated zip code is 19720, located in New Castle county. This location reflects a 48.5% Medicaid population as well as well as a 36% Commercial population. The commercial population is noted to predominantly be located in the northern part of the state where the businesses associated with commercial insurance are located. The Medicaid population primarily resides within inner city zip codes, which are common areas of poverty in the state. Members in Sussex county, the most southern part of the state of Delaware, are largely covered by Medicare and Medicare Advantage.

V. Opportunities for Improvement/Action Plan

The 2021 population assessment findings, clearly demonstrates the need to increase depression and SDOH screening for those enrolled in CareVio programs. These screening tools will enhance CareVio's ability to appropriately refer members to resources. While this data is directly related to the COVID-19 pandemic effects, the opportunity to significantly impact these areas exist.

By increasing connections to those members reporting SDOH to promote Health Equity, the community resource Unite Delaware has been partnered with CareVio since early 2020. The collaborated efforts with Unite Delaware provide the availability to identify a need, completing an electronic referral that meets the need identified with a specific service. Being as though needs are identified not only in clinical environments, but also in community environments, this provides the availability for Community Health Workers (CHW) to seek out community partners within a specified, needed area (Booker & Coombes, 2020). CareVio is planning to expand their community partners in order to meet the growing needs.

CareVio has developed a SDOH needs tool via an electronic dashboard which will be reviewed at least annually. Review of such data/findings will assist us in deploying or modifying existing programs to best meet the population's needs and promote health equity based on the data that is analyzed from the dashboard.

In order to address the medically underserved areas in the state of Delaware, ChristianaCare is expanding services for primary care to those over the age of 65 where the population is the greatest. CareVio will collaborate with the new staff in the practices located in Rehoboth and Milford to better serve the needs of this population.

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