

DATA ANALYSIS REPORT

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2019 Medicare Fee for Service For the Vision and Eye Health Surveillance System

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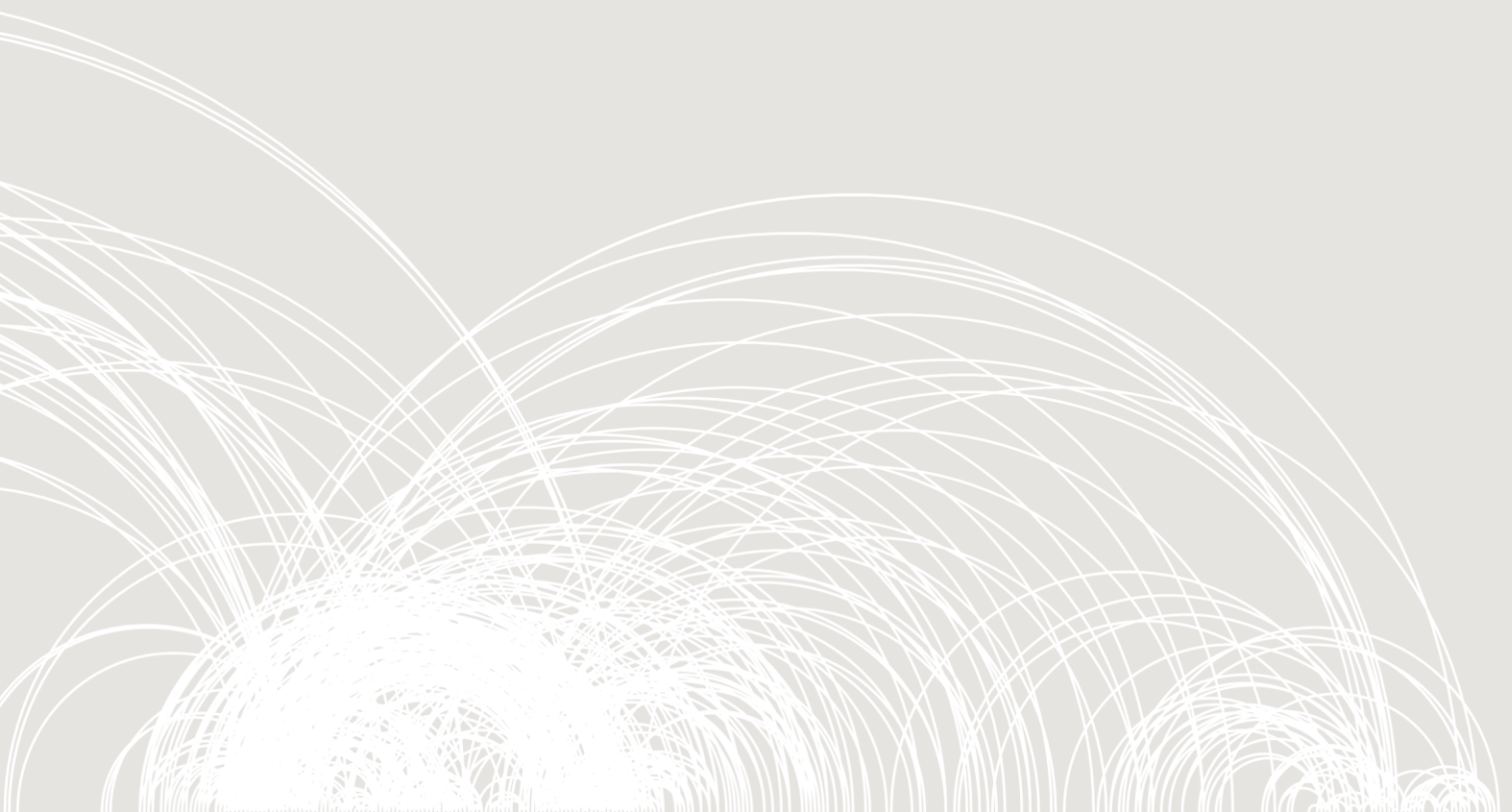


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Dataset Description

The Vision and Eye Health Surveillance System (VEHSS) analysis of Medicare data includes annual prevalence data for vision and eye health conditions and receipt of services from 2014 through 2019. Prevalence is calculated on an annual basis among a sample of all beneficiaries who were fully enrolled in Medicare Part B Fee-for-Service (FFS) for the duration of each calendar year. This includes approximately 30 million individuals annually. Data from patients enrolled in Medicare managed care plans were not included. In 2018, 2.2 million Americans were enrolled in Medicare advantage plans, and a further 17.6 million had drug plans.

Medicare covers ophthalmologic services for nearly the entire US population aged 65 and older, for those younger than 65 who have received social security benefits as a result of disability for 24 months; for those who have end stage renal disease and receive dialysis or a kidney transplant; and for those who have amyotrophic lateral sclerosis (ALS). Like others with a disability, persons with U.S. defined blindness (a best corrected acuity of 20/200 or worse in the better-seeing eye) become eligible for Medicare after 24 months of social security enrollment. In 2015, approximately 42.5 million out of 47.8 million Americans aged 65 and older (88.9%) were enrolled in Medicare Part B (which covers outpatient services).¹ Due to this high coverage rate, those enrolled are roughly representative of the overall population aged 65 and older. In contrast, only 9.0 million out of 273.6 million Americans ages 0 to 64 (3.3%) were enrolled in Medicare, and because these individuals are primarily eligible via disability, they are disproportionately sicker and poorer than other Americans in this age group.² Additionally, Medicare does not cover all services. Routine eye exams and optometry services are not covered by Medicare except in rare circumstances.

NORC and KPMG obtained access to 100% Medicare FFS claims data through the Centers for Medicare and Medicaid Services (CMS) Virtual Research Data Center (VRDC). Through the VRDC, the project team had access to 100% CMS research identifiable files (RIFs), including:

- Inpatient
- Outpatient
- Skilled Nursing Facility
- Hospice
- Home Health
- Carrier
- Durable Medical Equipment (DME)
- Master Beneficiary Summary File (MBSF) Base File
 - MBSF Chronic Conditions segment file
 - Part D Event data
 - Part D Characteristics, including Drug, Pharmacy, Prescriber, and Plan characteristics

Please see [this link](#) for a CMS description of each file:

¹ Huntley-Hall, N. Profile America Facts for Features: CB17-FF.08. US Census Bureau, Economics and Statistics Administration. March 27, 2017.

² Kaiser Family Foundation, State Health Facts. Calculated from US Census Current Population Survey, March 2017.

https://www.resdac.org/cms-data/search?f%5B0%5D=im_field_data_file_category%3A46

Analysis Overview

We analyzed the 100% Medicare FFS claims databases to estimate the annual prevalence rate of treated diagnoses and the rate of clinical procedures. NORC’s subcontractor KPMG analyzed the data and generated summary reports of frequencies and rates, summarized by state and by age group, race/ethnicity, and sex.

The patient population includes those who were fully enrolled in the Medicare program during the year of observation, defined as enrollment in Medicare Part B for all 12 months of the respective calendar year. We exclude beneficiaries without a valid sex or age variable, who do not have valid care plan variables, or have missing enrollment information. We also de-duplicate beneficiaries based on beneficiary, plan, and state ID’s.

A detailed description of the analytical steps is described in the report “VEHSS Claims & Registry Analysis Plan.”

Data Indicators and Case Definitions

We generated Medicare estimates using two data indicator topics: ‘Service Utilization’ and ‘Medical Diagnoses.’

Service Utilization Topic

Service Utilization measured in Medicare claims is the proportion of patients who received an included eyecare service per year of observation. The service utilization indicators analyzed in Medicare claims data are listed in Table 1.

Table 1. Procedure Categories and Subgroups

Category text	Subgroup text
Screening	Glaucoma screening
	Vision screening
	Diabetic Retinopathy Telemedicine Screening
	Any eye or vision screening
Imaging or diagnostic test	Gonioscopy
	Visual field testing
	Tonometry test

Category text	Subgroup text
	Optical coherence tomography
	Stereo fundus exam
	Fluorescein angiography
	Any diagnostic eye test
AMD Treatment	Anti-VEGF injections
	Laser surgery
	Photodynamic therapy
	Any AMD procedure
Cataract Surgery	Cataract surgery
Glaucoma Treatment	Drain
	Glaucoma surgery
	Laser surgery
	Glaucoma prescription drugs
	Any glaucoma treatment
Treatment for diabetic retinopathy	Laser/photocoagulation
	Retinal detachment repair
	Vitrectomy
	Anti-VEGF injections
	Any DR treatment
Vision Correction	Contact lens or fitting
	Eyeglasses
	Low Vision Aids
	Any vision correction
Eye Exams	By any provider type
	By an ophthalmologist or other physician
	By an optometrist or optician

The full code list and algorithms for the procedure code analysis are available at:
https://github.com/VEHSS/VEHSS_procedures

Medical Diagnoses Topic

Identification of prevalent cases

Individual Medicare beneficiaries were assigned to diagnosis categories and subgroups based on International Classification of Diseases (ICD) 9 (permissible in 2014) or ICD10 diagnosis codes on any patient claim during the year of observation.

We used the following identification algorithm:

- Any observation of an indicated diagnosis code in any Part B claim by a patient.
- The diagnosis code may be primary or secondary.
- Only one instance of the diagnosis code is necessary to trigger classification to a diagnosis category.
- Patients may be assigned to multiple categories and subcategories.
- Data is analyzed on an annual basis.

The development of this algorithm was based on the practices of the CMS Chronic Conditions Warehouse reporting system, feedback from project partners and experts, and the results of a literature review to identify normal and best practices for prevalence reporting from administrative data sources. This literature review is included in Appendix A of the “Claims & Registry Analysis Plan.”

Diagnosis Categories and Subgroup Indicators

Medical Diagnoses were reported based on the VEHS-defined medical diagnosis categorization structure. As reported in detail in the “VEHS Medical Diagnosis Categorization” report, we identified all eye and vision related ICD9 and ICD10 diagnosis codes, and organized them into a 2-level categorization structure which has 17 Categories and 79 Subgroups (**Table 4**).

For example, assume a beneficiary has three eye and vision related ICD9 codes in the year of observation:

- 362.3 Retinal vascular occlusion, unspecified
- 362.9 Retinal nerve fiber bundle defects
- 362.11 Hypertensive retinopathy

362.3 and 362.9 are assigned to subgroup ‘Retina vascular disease, Occlusive (arterial, venous)’.

362.11 is assigned to a different subgroup; ‘Retina vascular disease, Non-Occlusive’. Both of these subgroups are within one category (Other Retinal Disorders).

This beneficiary is counted as one prevalent case for subgroup ‘Retina vascular disease, Occlusive (arterial, venous)’, and one case for subgroup ‘Retina vascular disease, Non-Occlusive’. This beneficiary would count as one case in the category ‘Other Retinal Disorders’. Thus, individual patients can appear in multiple subgroups, but cannot be double counted within a specific category or subgroup. Patients may also appear in multiple separate categories.

Table 4. Medical Diagnosis Categories and Subgroups

Category	Subgroup
Retinal Detachment and Defects	
Diabetic Eye Diseases	Early/mild diabetic retinopathy
	Moderate /severe non-proliferative diabetic retinopathy
	Proliferative diabetic retinopathy
	Diabetic macular edema (dme, csme)
	Other/unspecified diabetes related eye conditions
Age related macular degeneration (AMD)	AMD, unspecified
	Early AMD
	Dry-form AMD
	GA, modifier for Dry-form
	Wet-form AMD
	CNV, modifier for Wet-form
Other Retinal Disorders	Retina vascular disease, occlusive (arterial, venous)
	Central retinal vein occlusion
	Branch retinal vein occlusion
	Central retinal arterial occlusion
	Branch retinal artery occlusion
	Retina vascular disease, non-occlusive
	Macular edema (if not diabetic)
	Hereditary chorioretinal dystrophy
	Myopic degeneration
	Other/unspecified retinal disorders
Glaucoma	Open-angle glaucoma
	Primary open-angle glaucoma
	Low-tension glaucoma
	Glaucoma suspect
	Primary angle-closure glaucoma
	Narrow-angle glaucoma
	Congenital glaucoma
	Neovascular glaucoma

Category	Subgroup
	Other/unspecified glaucoma
Cataracts	Senile cataract
	Non-congenital cataract
	Congenital cataract
	Posterior capsular opacity
	Pseudophakia
	Aphakia and other disorders of lens
Disorders of Refraction and accommodation	Myopia
	Hypermetropia
	Astigmatism
	Presbyopia
	Other disorder of refraction and accommodation
Blindness and low vision	Unqualified visual loss, both eyes
	Unqualified vision loss in one eye, or unspecified visual loss
	Vision impairment one eye
	Moderate or severe vision impairment better eye; profound vision impairment of lesser eye
	Moderate or severe vision impairment both eyes
	Profound vision impairment, bilateral, or legal blindness
Strabismus and amblyopia	Strabismus
	Amblyopia
Injury, burns and surgical complications of the eye	Injury
	Burn
	Surgical complication
Disorders of optic nerve and visual pathways	Optic nerve disorders
	Visual pathway disorders
Other visual disturbances	Visual field defect
	Color blindness
	Night blindness
	Other/unspecified visual disturbances
Infectious and Inflammatory diseases	Infectious diseases
	Keratitis

Category	Subgroup
	Conjunctivitis
	Eyelid infection and inflammation
	Other inflammatory conditions
	Lacrimal system and orbit inflammation
	Endophthalmitis
Orbital and external disease	Congenital anomalies
	Other/unspecified orbital or external disease
	Lacrimal diseases
	Eyelid disorders
	Dry eye syndrome
	Disorders of the globe
Cancer and neoplasms of the eye	Malignant neoplasm of the eye
	Benign neoplasm of the eye
Cornea disorders	Keratoconus
	Endothelial dystrophy (inc Fuchs)
	Other corneal disorders
Other eye disorders	

The full code list and algorithms for the procedure code analysis are available at:
https://github.com/VEHSS/VEHSS_DiagnosisCodes

Denominator used to Calculate Prevalence Rates

The denominator for each estimated prevalence rate is the total number of beneficiaries fully enrolled in the Medicare Part B program for all 12 months during the year of observation.

Stratification Factors

We report the summary outcomes of each data indicator overall, and by the stratification factors age group, sex, race/ethnicity, and state. This report includes outcomes estimated for single levels of stratification. To estimate prevalence rates for specific multi-variable stratification categories, please visit the VEHSS data visualization application.

Age Groups

Beneficiary age was categorized into the VEHSS-defined major age groups: 0-17, 18-39, 40-64, 65-84, 85+.

Sex Categories

Beneficiaries were classified as either Male or Female. Only a few beneficiaries had missing Sex data, and all cases were suppressed.

Race/Ethnicity Categories

We used the VEHS race/ethnicity identifiers. Few beneficiaries had missing race/ethnicity data and were excluded because their results would have been suppressed.

- American Indian and Alaska Native (AIAN)
- Asian
- Black (non-Hispanic)
- Hispanic (any race)
- White (non-Hispanic)
- Other (including multiple or missing race)
- All Races

States and Territories

Table 5. VEHSS State and Territory Abbreviations

AK	Alaska	LA	Louisiana	OK	Oklahoma
AL	Alabama	MA	Massachusetts	OR	Oregon
AR	Arkansas	MD	Maryland	PA	Pennsylvania
AS	American Samoa	ME	Maine	PR	Puerto Rico
AZ	Arizona	MH	Marshall Islands	PW	Palau
CA	California	MI	Michigan	RI	Rhode Island
CO	Colorado	MN	Minnesota	SC	South Carolina
CT	Connecticut	MO	Missouri	SD	South Dakota
DC	District of Columbia	MP	Northern Mariana Islands	TN	Tennessee
DE	Delaware	MS	Mississippi	TX	Texas
FL	Florida	MT	Montana	UT	Utah
GA	Georgia	NC	North Carolina	VA	Virginia
GU	Guam	ND	North Dakota	VI	U.S. Virgin Islands
HI	Hawaii	NE	Nebraska	VT	Vermont
IA	Iowa	NH	New Hampshire	WA	Washington
ID	Idaho	NJ	New Jersey	WI	Wisconsin
IL	Illinois	NM	New Mexico	WV	West Virginia
IN	Indiana	NV	Nevada	WY	Wyoming
KS	Kansas	NY	New York	XX	Missing State
KY	Kentucky	OH	Ohio	US	National

Suppression and Data Release Restrictions

To ensure patient privacy and protections, the VEHSS project implements additional data suppression on all publicly released data. All data incorporated into the VEHSS system is de-identified summary data. VEHSS does not report any patient-level data. To ensure maximum levels of data privacy and security, NORC worked with its internal data governance board, external experts and data providers and the CMS VRDC to design suppression algorithms to balance high level patient protection while maintaining the utility of publicly released data. VEHSS employed the following data suppression algorithm for Medicare claims data:

1. Suppress rates and denominator when denominator < 11
2. Suppress rates if numerator < 3
3. Report rates to 4 digits, formatting as percentage with two decimal points.
4. For public data on the VEHSS Data Visualization Application and the Centers for Disease Control and Prevention (CDC) Open Data Platform, counts of less than 100 are rounded to the nearest 10, and counts of 100 or greater are rounded to the nearest 100.

Validation

Internal Validation

Sample Size

The Medicare claims data included 100% of Medicare FFS claims in each year of observation, and the denominator included all Medicare Part B FFS beneficiaries enrolled for the full 12 months of the benefit year. The total number of beneficiaries was approximately 30 million persons each year. The dataset was fully representative of the Medicare FFS program and is nearly nationally representative for US residents aged 65 and older. The Medicare denominator also included persons of any age who are legally disabled or blind.

We are unable to determine the reason for Medicare program eligibility beyond any disability, and thus cannot distinguish those who have Medicare benefits due to blindness.

Outcome Coverage

Medicare claims includes information required to estimate medical diagnoses and service utilization rates, which includes eye exams by provider type. Further, there was sufficient sample size to report prevalence rates for all VEHSS defined outcome measures at a single level of demographic stratification for each state. Diagnosis rates and service utilization only reflect visits and services billed to Medicare FFS, so despite the high coverage among those aged 65 and older, Medicare results alone will not capture all medical diagnoses or procedures.

Potential Limitations

This analysis is subject to a number of potential limitations:

- Medicare claims are intended for billing purposes only. Diagnosis information included on claims is intended to justify payment. Therefore, diagnosis data on claims may suffer from bias or limited detail.
- Medicare FFS does not cover all healthcare services, such as routine eye exams or optometry care. Medicare patients may utilize these services using a different payer, and thus these services are not captured in Medicare FFS claims.
- Patients may be insured by multiple insurers, such as a supplemental, medigap or Medicare managed care plans. Thus, even normally covered ophthalmology services may not be indicated in FFS claims if services were reimbursed by another plan.
- Many Medicare patients move seasonally. We report patient residence based on the last location of observation. This may skew patient numbers towards “sun belt” states.
- Medicare is not nationally representative for individuals under age 65. These patients may obtain Medicare coverage due to medical need, such as legally recognized disability, or other specially defined benefit, such as End stage renal disease. Individuals who become disabled for reasons of blindness cannot be distinguished from others who are disabled unless there is thorough recording of low vision and blindness in their medical claims.
- Medicare FFS is nearly representative of the population aged 65 and older, but does not include beneficiaries with Medicare advantage plans, or those who defer Medicare coverage. The Medicare FFS claims also do not fully capture all medical services for this population.

Summary Statistics

Table 6. Prevalence of Treated Medical Diagnoses by Category and Subgroup, 2019

	Prevalence %	Numerator
	Sample Size = 29607800	
All Retinal detachment and defects	1.08	319900
All Diabetic eye diseases	3.11	920200
Proliferative Diabetic eye diseases	0.66	194200
Diabetic macular edema	0.96	284900
Other diabetes related eye disorders	0.72	212800
Non-proliferative	2.15	635500
Severe non-proliferative	0.17	48900
All Age-related macular degeneration	9.37	2775400
Unspecified	0.80	238000
Early	2.50	739800
Dry form	6.35	1879700
Geographic atrophy	0.69	205300
Wet form	1.85	549100
Choroidal neovascularization	1.46	430900
Advanced GA or Inactive CNV	1.34	397700
All Other retinal disorders	10.14	3001900
Retina vascular disease, Occlusive	0.04	13200
Central retinal vein occlusion	0.32	93800
Branch retinal vein occlusion	0.54	158600
Central retinal arterial occlusion	0.08	24800
Branch retinal artery occlusion	0.15	45900
Non-Occlusive	2.14	634400
Hereditary chorioretinal dystrophy	0.37	109900
Myopic degeneration	0.21	63100
Other/unspecified other retinal disorders	7.53	2229700
Retinopathy of prematurity	0.01	2100
Macular edema (Cystoid or non-diabetic)	0.45	133600
All Glaucoma	13.60	4026300

	Prevalence %	Numerator
Open angle	5.92	1752800
Glaucoma suspect	7.33	2169100
Primary angle-closure	1.11	328300
Other/unspecified glaucoma	1.38	409800
Secondary glaucoma	0.21	61500
Severe stage	0.83	246700
All Cataracts	34.22	10131500
Congenital Cataract	0.04	10800
Posterior capsular opacity	5.46	1615200
Pseudophakia	12.00	3551800
Aphakia and disorders of lens	0.26	76100
Age-related cataract	21.84	6465100
Other or unspecified cataract	1.89	561100
All Refraction and accommodation	11.55	3418200
Myopia	2.94	870800
Hypermetropia	3.40	1006200
Astigmatism	4.94	1461500
Presbyopia	7.42	2196500
Other	0.77	227000
All Blindness and low vision	0.83	244300
Unqualified, both eyes	0.07	22000
Unqualified in one eye, or unspecified	0.44	130400
Low vision or blindness, one eye	0.13	39100
Blindness one eye, low vision other eye	0.04	12600
Low vision, both eyes	0.03	8800
Blindness, both eyes, including legal blindness	0.19	54900
All Strabismus and amblyopia	1.39	412900
Strabismus	1.01	298500
Amblyopia	0.45	132200
All Injury, burns and surgical complications of the eye	1.74	515500
Ocular injury	1.37	406300
Burn	0.01	4000

	Prevalence %	Numerator
Surgical complication	0.40	118100
All Disorders of optic nerve and visual pathways	1.44	427000
Optic nerve disorders	1.43	424500
Disorders of the visual pathway and visual cortex	0.01	2900
All Other visual disturbances	3.88	1150100
Visual field defect	0.83	244900
Color blindness	0.03	8000
Night blindness	0.09	25600
Other/unspecified visual disturbances	3.14	930800
All Infectious and inflammatory diseases	11.68	3456800
Infectious diseases	0.47	138400
Keratitis	3.30	976500
Conjunctivitis	5.40	1599600
Eyelid infection and inflammation	3.90	1155900
Other/unspecified infectious and inflammatory diseases	0.54	160900
Lacrimal and orbit inflammation	0.10	30500
Endophthalmitis	0.07	21900
All Orbital and external disease	14.20	4205200
Congenital anomalies	0.13	39100
Other/unspecified orbital and external disease	0.14	41200
Lacrimal diseases	0.52	155300
Eyelid disorders	5.11	1511900
Dry eye syndrome	10.26	3038500
Disorders of the globe	0.08	23100
All Cancer and neoplasms of the eye diseases	2.14	635000
Malignant neoplasm	0.23	67500
Benign neoplasm	1.95	576800
All Cornea disorders	3.20	946100
Keratoconus	0.11	33600
Endothelial dystrophy (Fuchs)	0.99	292100
Other corneal disorders	2.25	666300
Cornea disorder related to contact lens	0.03	7700

	Prevalence %	Numerator
All Other eye disorders	13.21	3910500

Table 7. Prevalence of Treated Medical Diagnoses by Category and Subgroup, 2017-2019

	2017		2018		2019	
	Prevalence %	CI	Prevalence %	CI	Prevalence %	CI
	Sample Size = 30239200		Sample Size = 29909000		Sample Size = 29607800	
Retinal detachment and defects	1.00	1.00, 1.00	1.00	1.00, 1.00	1.08	1.08, 1.08
All Diabetic eye diseases	3.20	3.10, 3.20	3.20	3.20, 3.20	3.11	3.10, 3.11
Proliferative Diabetic eye diseases	0.50	0.50, 0.50	0.50	0.50, 0.50	0.66	0.65, 0.66
Diabetic macular edema	0.90	0.90, 0.90	0.90	0.90, 0.90	0.96	0.96, 0.97
Other diabetes related eye disorders	0.90	0.90, 0.90	0.90	0.90, 0.90	0.72	0.72, 0.72
Non-proliferative	2.10	2.10, 2.10	2.10	2.10, 2.10	2.15	2.14, 2.15
Severe non-proliferative	0.10	0.10, 0.10	0.10	0.10, 0.10	0.17	0.16, 0.17
All Age-related macular degeneration	9.10	9.10, 9.10	9.20	9.20, 9.20	9.37	9.36, 9.38
Unspecified	0.90	0.90, 0.90	0.80	0.80, 0.80	0.80	0.80, 0.81
Early	2.30	2.30, 2.30	2.40	2.40, 2.40	2.50	2.49, 2.50
Dry-form	6.20	6.20, 6.20	6.30	6.30, 6.30	6.35	6.34, 6.36
Geographic atrophy	0.70	0.70, 0.70	0.70	0.70, 0.70	0.69	0.69, 0.70
Wet-form	1.80	1.80, 1.80	1.80	1.80, 1.80	1.85	1.85, 1.86
Choroidal neovascularization	1.30	1.30, 1.30	1.40	1.40, 1.40	1.46	1.45, 1.46
Advanced GA or Inactive CNV	1.40	1.40, 1.40	1.40	1.40, 1.40	1.34	1.34, 1.35
All Other retinal disorders	9.10	9.10, 9.10	9.60	9.60, 9.60	10.14	10.13, 10.15
Retina vascular disease, Occlusive	0.10	0.10, 0.10	0.00	0.00, 0.00	0.04	0.04, 0.05
Central retinal vein occlusion	0.30	0.30, 0.30	0.30	0.30, 0.30	0.32	0.31, 0.32
Branch retinal vein occlusion	0.50	0.50, 0.50	0.50	0.50, 0.50	0.54	0.53, 0.54
Central retinal arterial occlusion	0.10	0.10, 0.10	0.10	0.10, 0.10	0.08	0.08, 0.08

	2017		2018		2019	
Branch retinal artery occlusion	0.10	0.10, 0.10	0.10	0.10, 0.20	0.15	0.15, 0.16
Non-Occlusive	2.00	2.00, 2.00	2.10	2.10, 2.10	2.14	2.14, 2.15
Hereditary chorioretinal dystrophy	0.30	0.30, 0.30	0.30	0.30, 0.30	0.37	0.37, 0.37
Myopic degeneration	0.20	0.20, 0.20	0.20	0.20, 0.20	0.21	0.21, 0.21
Other/unspecified other retinal disorders	6.60	6.60, 6.70	7.10	7.10, 7.10	7.53	7.52, 7.54
Retinopathy of prematurity	0.00	0.00, 0.00	0.00	0.00, 0.00	0.01	0.01, 0.01
Macular edema (Cystoid or non-diabetic)	0.40	0.40, 0.40	0.40	0.40, 0.40	0.45	0.45, 0.45
All Glaucoma	13.10	13.10, 13.20	13.30	13.30, 13.30	13.60	13.59, 13.61
Open-angle	6.10	6.10, 6.10	6.10	6.10, 6.10	5.92	5.91, 5.93
Glaucoma suspect	6.90	6.90, 6.90	7.10	7.10, 7.10	7.33	7.32, 7.34
Primary angle-closure	1.10	1.00, 1.10	1.10	1.10, 1.10	1.11	1.10, 1.11
Other/unspecified glaucoma	1.00	1.00, 1.00	1.10	1.10, 1.10	1.38	1.38, 1.39
Secondary glaucoma	0.20	0.20, 0.20	0.20	0.20, 0.20	0.21	0.21, 0.21
Severe stage	0.80	0.80, 0.80	0.80	0.80, 0.80	0.83	0.83, 0.84
All Cataracts	33.40	33.40, 33.40	33.70	33.70, 33.70	34.22	34.20, 34.24
Congenital Cataract	0.00	0.00, 0.10	0.00	0.00, 0.00	0.04	0.04, 0.04
Posterior capsular opacity	5.10	5.10, 5.10	5.30	5.30, 5.30	5.46	5.45, 5.46
Pseudophakia	11.20	11.20, 11.20	11.60	11.60, 11.60	12.00	11.98, 12.01
Aphakia and disorders of lens	0.30	0.30, 0.30	0.30	0.30, 0.30	0.26	0.26, 0.26
Age-related cataract	21.80	21.80, 21.80	21.80	21.80, 21.80	21.84	21.82, 21.85
Other or unspecified cataract	1.90	1.90, 1.90	1.80	1.70, 1.80	1.89	1.89, 1.90
All Refraction and accommodation	10.50	10.50, 10.50	10.90	10.90, 10.90	11.55	11.53, 11.56
Myopia	2.60	2.60, 2.60	2.70	2.70, 2.70	2.94	2.94, 2.95

	2017		2018		2019	
Hypermetropia	3.10	3.10, 3.10	3.20	3.20, 3.20	3.40	3.39, 3.40
Astigmatism	4.30	4.30, 4.30	4.60	4.60, 4.60	4.94	4.93, 4.94
Presbyopia	6.60	6.60, 6.60	7.00	7.00, 7.00	7.42	7.41, 7.43
Other	0.80	0.80, 0.80	0.80	0.80, 0.80	0.77	0.76, 0.77
All Blindness and low vision	0.80	0.80, 0.80	0.80	0.80, 0.80	0.83	0.82, 0.83
Unqualified, both eyes	0.00	0.00, 0.00	0.10	0.10, 0.10	0.07	0.07, 0.08
Unqualified in one eye, or unspecified	0.40	0.30, 0.40	0.40	0.40, 0.40	0.44	0.44, 0.44
Low vision or blindness, one eye	0.20	0.20, 0.20	0.10	0.10, 0.10	0.13	0.13, 0.13
Blindness one eye, low vision other eye	0.10	0.10, 0.10	0.00	0.00, 0.00	0.04	0.04, 0.04
Low vision, both eyes	0.10	0.10, 0.10	0.00	0.00, 0.00	0.03	0.03, 0.03
Blindness, both eyes, including legal blindness	0.20	0.20, 0.20	0.20	0.20, 0.20	0.19	0.18, 0.19
All Strabismus and amblyopia	1.30	1.30, 1.30	1.40	1.30, 1.40	1.39	1.39, 1.40
Strabismus	0.90	0.90, 0.90	1.00	1.00, 1.00	1.01	1.00, 1.01
Amblyopia	0.40	0.40, 0.40	0.40	0.40, 0.40	0.45	0.44, 0.45
All Injury, burns and surgical complications of the eye	1.70	1.70, 1.70	1.70	1.70, 1.70	1.74	1.74, 1.75
Ocular injury	1.30	1.30, 1.30	1.30	1.30, 1.40	1.37	1.37, 1.38
Burn	0.00	0.00, 0.00	0.00	0.00, 0.00	0.01	0.01, 0.01
Surgical complication	0.40	0.40, 0.40	0.40	0.40, 0.40	0.40	0.40, 0.40
All Disorders of optic nerve and visual pathways	1.40	1.40, 1.40	1.40	1.40, 1.40	1.44	1.44, 1.45
Optic nerve disorders	1.40	1.40, 1.40	1.40	1.40, 1.40	1.43	1.43, 1.44
Disorders of the visual pathway and visual cortex	0.00	0.00, 0.00	0.00	0.00, 0.00	0.01	0.01, 0.01
All Other visual disturbances	3.70	3.70, 3.70	3.80	3.80, 3.80	3.88	3.88, 3.89
Visual field defect	0.80	0.80, 0.80	0.80	0.80, 0.80	0.83	0.82, 0.83

	2017		2018		2019	
Color blindness	0.00	0.00, 0.00	0.00	0.00, 0.00	0.03	0.03, 0.03
Night blindness	0.00	0.00, 0.00	0.10	0.10, 0.10	0.09	0.09, 0.09
Other/unspecified visual disturbances	3.00	3.00, 3.00	3.00	3.00, 3.00	3.14	3.14, 3.15
All Infectious and inflammatory diseases	11.30	11.30, 11.30	11.50	11.50, 11.60	11.68	11.66, 11.69
Infectious diseases	0.50	0.50, 0.50	0.50	0.50, 0.50	0.47	0.46, 0.47
Keratitis	3.00	3.00, 3.00	3.20	3.20, 3.20	3.30	3.29, 3.30
Conjunctivitis	5.30	5.30, 5.30	5.30	5.30, 5.30	5.40	5.39, 5.41
Eyelid infection and inflammation	3.90	3.90, 3.90	4.00	4.00, 4.00	3.90	3.90, 3.91
Other/unspecified infectious and inflammatory diseases	0.50	0.50, 0.50	0.50	0.50, 0.50	0.54	0.54, 0.55
Lacrimal and orbit inflammation	0.10	0.10, 0.10	0.10	0.10, 0.10	0.10	0.10, 0.10
Endophthalmitis	0.10	0.10, 0.10	0.10	0.10, 0.10	0.07	0.07, 0.07
All Orbital and external disease	13.10	13.10, 13.10	13.60	13.60, 13.60	14.20	14.19, 14.22
Congenital anomalies	0.10	0.10, 0.10	0.10	0.10, 0.10	0.13	0.13, 0.13
Other/unspecified orbital and external disease	0.10	0.10, 0.10	0.10	0.10, 0.10	0.14	0.14, 0.14
Lacrimal diseases	0.50	0.50, 0.50	0.50	0.50, 0.50	0.52	0.52, 0.53
Eyelid disorders	4.40	4.40, 4.50	4.70	4.70, 4.70	5.11	5.10, 5.11
Dry eye syndrome	9.50	9.50, 9.50	9.80	9.80, 9.90	10.26	10.25, 10.27
Disorders of the globe	0.10	0.10, 0.10	0.10	0.10, 0.10	0.08	0.08, 0.08
All Cancer and neoplasms of the eye diseases	1.90	1.90, 1.90	2.00	2.00, 2.10	2.14	2.14, 2.15
Malignant neoplasm	0.20	0.20, 0.20	0.20	0.20, 0.20	0.23	0.23, 0.23
Benign neoplasm	1.70	1.70, 1.70	1.80	1.80, 1.90	1.95	1.94, 1.95
All Cornea disorders	3.00	3.00, 3.00	3.10	3.10, 3.10	3.20	3.19, 3.20
Keratoconus	0.10	0.10, 0.10	0.10	0.10, 0.10	0.11	0.11, 0.11

	2017		2018		2019	
Endothelial dystrophy (Fuchs)	0.90	0.90, 0.90	1.00	1.00, 1.00	0.99	0.98, 0.99
Other corneal disorders	2.10	2.10, 2.10	2.20	2.20, 2.20	2.25	2.25, 2.26
Cornea disorder related to contact lens	11.90	11.80, 11.90	12.60	12.60, 12.60	0.03	0.03, 0.03
Other eye disorders	-	-	-	-	13.21	13.20, 13.22

Table 8. Medical Diagnosis Categories by Age Group, 2019

	All Ages %	Numerat or	0-17 Years %	Nu mer ator	18-39 Years %	Nume rator	40-64 Years %	Numer ator	65- 84 Year s %	Numerat or	Abov e 85 %	Numer ator
	Sample Size = 29607800		Sample Size = 900		Sample Size = 657900		Sample Size = 3516300		Sample Size = 21871600		Sample Size = 3561100	
Retinal detachment and defects	1.08	319900	-	-	0.39	2600	0.61	21400	1.22	265900	0.84	30000
All Injury, burns and surgical complications of the eye	1.74	515500	0.89	10	1.26	8300	1.41	49500	1.69	370500	2.45	87200
All Disorders of optic nerve and visual pathways	1.44	427000	3.12	30	1.15	7600	1.20	42000	1.42	310100	1.89	67200
All Other visual disturbances	3.88	1150100	3.34	30	3.41	22400	3.59	126200	3.79	829900	4.82	171500
All Infectious and inflammatory diseases	11.68	3456800	5.24	50	5.81	38200	7.43	261200	12.11	2649400	14.26	507900
All Orbital and external disease	14.20	4205200	2.45	20	3.46	22700	6.64	233400	14.92	3262900	19.27	686100
All Cancer and neoplasms of the eye diseases	2.14	635000	-	-	0.30	2000	0.72	25200	2.36	515500	2.59	92400
All Cornea disorders	3.20	946100	0.45	0	0.86	5600	1.35	47500	3.30	721800	4.81	171200
All Diabetic eye diseases	3.11	920200	-	-	1.12	7400	3.90	137000	3.13	685600	2.53	90200
All Age-related macular degeneration	9.37	2775400	-	-	0.18	1200	1.23	43100	8.48	1855700	24.58	875400
All Other retinal disorders	10.14	3001900	0.00	0	1.97	12900	4.32	151700	10.72	2345500	13.81	491800
All Glaucoma	13.60	4026300	2.01	20	2.29	15000	5.96	209600	14.18	3101900	19.65	699800
All Cataracts	34.22	10131500	1.00	10	1.98	13100	14.27	501600	38.09	8331600	36.09	1285200
All Refraction and accommodation	11.55	3418200	1.56	10	6.86	45100	7.86	276500	12.36	2703800	11.03	392800
All Blindness and low vision	0.83	244300	9.48	90	1.08	7100	1.18	41300	0.62	136400	1.67	59500
All Strabismus and amblyopia	1.39	412900	1.90	20	2.33	15300	1.44	50800	1.33	290800	1.57	55900
Other eye disorders	13.21	3910500	1.00	10	2.18	14300	4.69	164900	14.52	3175500	15.61	555700

Table 9. Medical Diagnosis Categories by Sex, 2019

	Both sexes %	Numerator	Female %	Numerator	Male %	Numerator
	Sample Size = 29607800		Sample Size = 16324400		Sample Size = 13283300	
Retinal detachment and defects	1.08	319900	0.95	155200	1.24	164700
All Injury, burns and surgical complications of the eye	1.74	515500	1.74	284200	1.74	231300
All Disorders of optic nerve and visual pathways	1.44	427000	1.53	249400	1.34	177500
All Other visual disturbances	3.88	1150100	4.18	682600	3.52	467500
All Infectious and inflammatory diseases	11.68	3456800	13.47	2198800	9.47	1258000
All Orbital and external disease	14.20	4205200	17.12	2794900	10.62	1410300
All Cancer and neoplasms of the eye diseases	2.14	635000	2.25	368000	2.01	267000
All Cornea disorders	3.20	946100	3.65	595300	2.64	350800
All Diabetic eye diseases	3.11	920200	2.92	477300	3.33	442900
All Age-related macular degeneration	9.37	2775400	10.89	1778100	7.51	997300
All Other retinal disorders	10.14	3001900	10.69	1745800	9.46	1256100
All Glaucoma	13.60	4026300	14.77	2411100	12.16	1615200
All Cataracts	34.22	10131500	37.20	6072300	30.56	4059200
All Refraction and accommodation	11.55	3418200	12.66	2066100	10.18	1352200
All Blindness and low vision	0.83	244300	0.84	137300	0.81	107000
All Strabismus and amblyopia	1.39	412900	1.43	233100	1.35	179700
Other eye disorders	13.21	3910500	14.62	2387400	11.47	1523100

Table 10. Medical Diagnosis Categories by Race, 2019

	All Rac es %	Nu mera tor	White non- Hispa nic %	Nu mera tor	Black non- Hispa nic %	Nu mera tor	Hisp anic %	Nu mera tor	Asia n %	Nu mera tor	AIA N %	Nu mera tor	Othe r %	Nu mera tor
	Sample Size = 29607800		Sample Size = 24060800		Sample Size = 2601400		Sample Size = 1730400		Sample Size = 805300		Sample Size = 172400			
Retinal detachment and defects	1.08	319900	1.14	274100	0.74	19200	0.80	13900	1.05	8500	0.84	1400	1.16	2800
All Injury, burns and surgical complications of the eye	1.74	515500	1.81	434400	1.38	35800	1.47	25400	1.59	12800	1.87	3200	1.66	3900
All Disorders of optic nerve and visual pathways	1.44	427000	1.42	341900	1.51	39400	1.41	24300	1.84	14800	1.41	2400	1.74	4100
All Other visual disturbances	3.88	1150100	3.98	957700	3.30	85800	3.33	57700	4.10	33000	3.46	6000	4.14	9800
All Infectious and inflammatory diseases	11.68	3456800	11.81	284200	9.11	237100	11.77	203600	15.46	124500	10.55	18200	13.20	31300
All Orbital and external disease	14.2	4205200	14.65	352500	9.92	25800	12.09	209200	18.41	148300	15.22	26200	16.17	38400
All Cancer and neoplasms of the eye diseases	2.14	635000	2.48	596500	0.42	11000	0.93	16100	0.79	6400	1.09	1900	1.36	3200
All Cornea disorders	3.20	946100	3.35	806300	2.39	62300	2.42	42000	2.98	24000	2.53	4400	3.01	7200
All Diabetic eye diseases	3.11	920200	2.58	619800	5.19	134900	6.05	104700	4.90	39500	6.22	10700	4.49	10700
All Age-related macular degeneration	9.37	2775400	10.40	2503200	2.73	71100	5.55	96000	9.29	74800	6.05	10400	8.38	19900
All Other retinal disorders	10.14	3001900	10.44	2511300	7.91	205800	8.38	145000	12.01	96800	8.53	14700	11.96	28400
All Glaucoma	13.60	4026300	13.08	3148200	17.06	443800	12.72	220100	19.02	153200	11.05	19100	17.67	42000
All Cataracts	34.22	10131500	35.87	8631200	25.91	674000	24.79	429000	32.93	265200	27.77	47900	35.46	84200
All Refraction and accommodation	11.55	3418200	12.34	2969900	7.58	197300	7.72	133700	7.52	60600	19.08	32900	10.10	24000
All Blindness and low vision	0.83	244300	0.75	180200	1.31	34200	1.06	18400	0.87	7000	1.52	2600	0.81	1900
All Strabismus and amblyopia	1.39	412900	1.50	361000	0.90	23400	0.91	15800	0.93	7500	1.35	2300	1.22	2900
Other eye disorders	13.21	3910500	14.12	3396900	7.89	205200	9.16	158500	12.83	103300	8.12	14000	13.71	32600

Table 11. Medical Diagnosis Categories by Risk Factors, 2019

	All Patients %	Numerator	Hypertension %	Numerator	Diabetes %	Numerator
	Sample Size = 29607800		Sample Size = 17423400		Sample Size = 8043500	
Retinal detachment and defects	1.08	319900	1.20	208700	1.15	92700
All Injury, burns and surgical complications of the eye	1.74	515500	2.03	353200	1.95	157000
All Disorders of optic nerve and visual pathways	1.44	427000	1.69	294900	1.75	141100
All Other visual disturbances	3.88	1150100	4.64	808000	4.41	354700
All Infectious and inflammatory diseases	11.68	3456800	13.25	2308100	12.55	1009300
All Orbital and external disease	14.20	4205200	16.43	2863100	15.27	1228400
All Cancer and neoplasms of the eye diseases	2.14	635000	2.42	421500	2.19	175900
All Cornea disorders	3.20	946100	3.69	643700	3.37	270900
All Diabetic eye diseases	3.11	920200	4.69	817100	11.35	912900
All Age-related macular degeneration	9.37	2775400	11.46	1997500	9.87	793500
All Other retinal disorders	10.14	3001900	12.42	2163100	12.60	1013700
All Glaucoma	13.60	4026300	15.99	2786600	16.59	1334000
All Cataracts	34.22	10131500	38.94	6784400	39.20	3153400
All Refraction and accommodation	11.55	3418200	12.46	2171800	12.60	1013100
All Blindness and low vision	0.83	244300	1.06	184700	1.18	94800
All Strabismus and amblyopia	1.39	412900	1.51	262300	1.44	115600
Other eye disorders	13.21	3910500	15.06	2623800	14.12	1136100

Table 12. Medical Diagnosis Summary Groups by Age, 2019

	All Ages %	Numera tor	0-17 Years %	Num erato r	18-39 Years %	Numera tor	40-64 Years %	Numera tor	65-84 Years %	Numera tor	Above 85 %	Numera tor
	Sample Size = 29607800		Sample Size = 900		Sample Size = 657900		Sample Size = 3516300		Sample Size = 21871600		Sample Size = 3561100	
Non-vision threatening DR	1.83	541200	-	-	0.44	2900	1.68	59200	1.91	416900	1.75	62200
Vision threatening DR	1.28	379100	0.00	0	0.68	4500	2.21	77800	1.23	268800	0.79	28000
Non-vision threatening AMD	7.08	209750	0.00	0	0.17	1100	1.09	38400	6.88	150510	15.53	552900
Vision threatening AMD	2.29	677900	0.00	0	0.01	70	0.13	4700	1.60	350700	9.06	322500
Glaucoma, non-suspect	7.46	220960	0.45	0	0.81	5400	2.90	101800	7.38	161370	13.72	488700
Glaucoma, suspect	6.14	181670	0.56	0	1.47	9700	3.07	107800	6.80	148820	5.93	211000
Diagnosed untreated cataract	17.44	516400	1.11	10	1.48	9800	10.80	379800	20.58	450220	7.64	272200
Diagnosed treated cataract	16.78	496750	0.45	0	0.50	3300	3.46	121800	17.51	382940	28.45	101300
Any diagnosed eye disorder	49.94	14786200	26.98	240	20.2	132900	29.52	1038000	52.45	11471500	60.20	2143700

Table 13. Medical Diagnosis Summary Groups by Sex, 2019

	Both sexes %	Numerator	Female %	Numerator	Male %	Numerator
	Sample Size = 29607800		Sample Size = 16324400		Sample Size = 13283300	
Non-vision threatening DR	1.83	541200	1.73	283200	1.94	257900
Vision threatening DR	1.28	379100	1.19	194100	1.39	185000
Non-vision threatening AMD	7.08	2097500	8.20	1338600	5.71	758900
Vision threatening AMD	2.29	677900	2.69	439500	1.79	238400
Glaucoma, non-suspect	7.46	2209600	8.00	1306100	6.80	903500
Glaucoma, suspect	6.14	1816700	6.77	1104900	5.36	711700
Diagnosed untreated cataract	17.44	5164000	18.08	2952000	16.65	2212000
Diagnosed treated cataract	16.78	4967500	19.11	3120400	13.91	1847200
Any diagnosed eye disorder	49.94	14786200	54.45	8889000	44.40	5897200

Table 14. Medical Diagnosis Summary Groups by Race, 2019

	All Races %	Nume rator	White non- Hispanic %	Nume rator	Black non- Hispanic %	Nume rator	Hisp anic %	Nume rator	Asia n %	Nume rator	AIA N %	Numer ator	Ot her %	Nume rator
	Sample Size = 29607800		Sample Size = 24060800		Sample Size = 2601400		Sample Size = =1730400		Sample Size = 805300		Sample Size = 172400		Sample Size = 237400	
Non-vision threatening DR	1.83	54120 0	1.60	38530 0	2.66	69300	2.89	49900	3.01	24300	3.45	6000	2.6 8	6400
Vision threatening DR	1.28	37910 0	0.97	23440 0	2.52	65600	3.16	54700	1.89	15200	2.77	4800	1.8 1	4300
Non-vision threatening AMD	7.08	20975 00	7.78	18720 00	2.37	61500	4.47	77300	7.77	62500	4.58	7900	6.8 5	16300
Vision threatening AMD	2.29	67790 0	2.62	63120 0	0.37	9600	1.08	18800	1.52	12200	1.47	2500	1.5 3	3600
Glaucoma, non- suspect	7.46	22096 00	6.94	16706 00	11.07	28800 0	7.60	13150 0	10.6 2	85500	6.61	11400	9.5 6	22700
Glaucoma, suspect	6.14	18167 00	6.14	14776 00	5.99	15580 0	5.12	88600	8.40	67700	4.44	7700	8.1 1	19300
Diagnosed untreated cataract	17.44	51640 00	17.95	43191 00	15.33	39880 0	13.43	23250 0	17.9 0	14420 0	14.3 0	24600	18. 86	44800
Diagnosed treated cataract	16.78	49675 00	17.92	43122 00	10.58	27520 0	11.36	19650 0	15.0 3	12100 0	13.4 7	23200	16. 60	39400
Any diagnosed eye disorder	49.94	14786 200	51.67	12431 900	40.62	10566 00	40.06	69310 0	49.9 5	40220 0	46.0 0	79300	51. 81	12300 0

Table 15. Medical Diagnosis Subgroups by Risk Factors, 2019

	All Patients %	Numerator	Hypertension %	Numerator	Diabetes %	Numerator
	Sample Size = 29607800		Sample Size = 17423400		Sample Size = 8043500	
Non-vision threatening DR	1.83	541200	2.74	477600	6.67	536600
Vision threatening DR	1.28	379100	1.95	339500	4.68	376300
Non-vision threatening AMD	7.08	2097500	8.51	1482900	7.40	595400
Vision threatening AMD	2.29	677900	2.95	514600	2.46	198100
Glaucoma, non-suspect	7.46	2209600	9.04	1575600	9.46	760700
Glaucoma, suspect	6.14	1816700	6.95	1211100	7.13	573300
Diagnosed untreated cataract	17.44	5164000	18.46	3215700	19.39	1559700
Diagnosed treated cataract	16.78	4967500	20.48	3568700	19.81	1593700
Any diagnosed eye disorder	49.94	14786200	56.98	9928200	58.80	4729800

Table 16. Service Utilization by Age, 2019

	All Ages %	Nu- mera- tor	0-17 Yea- rs %	Nu- mera- tor	18-39 Years %	Nu- mera- tor	40-64 Years %	Nu- mera- tor	65-84 Years %	Nu- mera- tor	Above 85 %	Nu- mera- tor
	Sample Size = 29607800		Sample Size = 900		Sample Size = 657900		Sample Size = 3516300		Sample Size = 21871600		Sample Size = 3561100	
Any Eye/Vision Screening	0.20	59500	2.56	20	0.23	1500	0.21	7500	0.21	45700	0.13	4700
Any Diagnostic Eye Test	23.82	7051600	2.68	20	4.43	29200	10.62	373400	25.04	5476300	32.93	1172700
Eye Exam by Any Provider	45.71	13535200	20.07	180	15.90	104600	24.84	873500	48.57	10622300	54.33	1934600
Any Vision Correction	0.23	68000	0.33	0	0.16	1100	0.16	5800	0.25	55300	0.16	5900

Table 17. Service Utilization by Sex, 2019

	Both sexes %	Numerator	Female %	Numerator	Male %	Numerator
	Sample Size = 29607800		Sample Size = 16324400		Sample Size = 13283300	
Any Eye/Vision Screening	0.20	59500	0.21	33800	0.19	25700
Any Diagnostic Eye Test	23.82	7051600	25.88	4224100	21.29	2827500
Eye Exam by Any Provider	45.71	13535200	49.96	8155200	40.50	5380000
Any Vision Correction	0.23	68000	0.28	46400	0.16	21500

Table 18. Service Utilization by Race, 2019

	All Race s %	Nu mera tor	White non- Hispanic %	Nu mera tor	Black non- Hispanic %	Nu mera tor	His pani c %	Nu mer ator	Asi an %	Nu mera tor	AIA N %	Nu mer ator	Other %	Nu mer ator
	Sample Size = 29607800		Sample Size = 24060800		Sample Size = 2601400		Sample Size = 1730400		Sample Size = 805300		Sample Size = 172400		Sample Size = 237400	
Any Eye/Vision Screening	0.20	59500	0.18	43200	0.24	6200	0.42	7300	0.24	2000	0.18	310	0.22	530
Any Diagnostic Eye Test	23.82	7051600	24.26	5836600	20.59	535500	20.28	350900	28.32	228000	19.91	34300	27.90	66300
Eye Exam by Any Provider	45.71	13535200	47.60	11451900	35.66	927700	35.22	609400	44.97	362100	41.14	70900	47.62	113100
Any Vision Correction	0.23	68000	0.25	60200	0.13	3300	0.15	2600	0.15	1200	0.17	290	0.17	410

Table 19. Service Utilization by Risk Factors, 2019

	All Patients %	Nu mer ator	Hypertension %	Nu mer ator	Diabetes %	Nu mer ator
	Sample Size = 29607800		Sample Size = 17423400		Sample Size = 8043500	
Any Eye/Vision Screening	0.20	59500	0.23	40200	0.27	21600
Any Diagnostic Eye Test	23.82	7051600	28.30	4930700	30.77	2474800
Eye Exam by Any Provider	45.71	13535200	52.11	9080100	54.40	4375400
Any Vision Correction	0.23	68000	0.23	39200	0.20	16000

Table 20. Service Utilization by Any AMD Procedure, 2019

	AMD %	Numerator	Diabetes and AMD %	Numerator	Hypertension and AMD	Numerator
	Sample Size = 2775400		Sample Size = 793500		Sample Size = 1997500	
Any AMD Procedure	14.21	394500	14.88	118100	14.99	299500

Table 21. Service Utilization by Any Glaucoma Procedure, 2019

	Glaucoma %	Numerator	Diabetes and Glaucoma	Numerator	Hypertension and Glaucoma	Numerator
	Sample Size = 4026300		Sample Size = 1334000		Sample Size = 2786600	
Any Glaucoma Procedure	36.15	1455400	38.85	518200	37.87	1055300

Table 22. Service Utilization by Any Diabetic Retinopathy Procedure, 2019

	DR %	Numerator	Diabetes and DR	Numerator	Hypertension and DR	Numerator
	Sample Size = 920200		Sample Size = 913000		Sample Size = 817100	
Any DR Procedure	17.31	159300	17.36	158500	17.49	142900