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University of Massachusetts Medical School *Eye care Emergency Department Avoidance (EyEDA) Model*

A Proposal to the Physician-Focused Payment Model Technical Advisory Committee

Submitted by: The University of Massachusetts Medical School

June 27, 2019

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June 26, 2019

Physician – Focused Payment Model Technical Advisory Committee
C/o U.S. DHHS Assistant Secretary of Planning and Evaluation Office of Health Policy
200 Independence Ave. SW.
Washington, D.C. 20201

Re: University of Massachusetts Medical School *Eyecare Emergency Department Avoidance (EyEDA) Model*

Dear Committee Members,

On behalf of the University of Massachusetts Medical School Department of Population & Quantitative Health Sciences Department I respectfully request a review and approval of an innovative Physician – Focused Payment Model (PFPM) entitled "UMass Medical School Eyecare Emergency Department Avoidance (EyEDA). Through the Transforming Clinical Practices Initiative (TCPi), a 4-year program funded by the Centers of Medicare and Medicaid (CMS), the UMass Practice Transformation Network (PTN) provides technical assistance to over 1,600 optometry practices across the nation, supporting enhancements in clinical processes and practice operations to improve outcomes and reduce costs. This work has allowed our team to identify opportunities to improve clinical quality and patient experience of care, and to reduce unnecessary costs to payers and patients. One of the aims of TCPi is to transition participating practices into Advanced Alternative Payment Models (APMs). Unfortunately, there are currently no APMs available for optometrists. EyEDA has been developed to provide that opportunity.

Through their participation in TCPi, the optometrists enrolled in our network have demonstrated proof of concept for the care model underlying EyEDA. They have implemented a number of interventions to improve direct access to outpatient eye care, allowing more than 250,000 patients (to date) to receive care in an office or clinic setting for conditions that are very commonly treated in emergency rooms. This has resulted in hundreds of millions of dollars in all-payer savings, while simultaneously providing care that is more patient centered and convenient.

We strongly support the review and approval of the EyEDA model.

Sincerely,

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I. ABSTRACT

The Physician-Focused Payment Model (PFPM), *Eye Care Emergency Department Avoidance (EyEDA),* which is proposed by the University of Massachusetts, is designed to provide a pathway to participate in an Alternative Payment Model (APM) for eligible eye care professionals. This model aims to reduce the unnecessary utilization of emergency departments (EDs) for emergency department-avoidable (ED-avoidable) eye conditions, to provide better care for individuals, better health for populations, and lower costs to the healthcare system.

Through the Transforming Clinical Practices Initiative (TCPI), a program funded by the Centers for Medicare and Medicaid Services (CMS), our organization provided technical assistance to over 1,600 optometry practices across the nation, supporting improvements in clinical processes and practice operations to improve outcomes and reduce costs. During our work with these providers, we identified opportunities to improve clinical quality and patients' experience of care, reduce costs to payers and patients, and provide optometrists and ophthalmologists with the opportunity to emphasize value over volume, all critical elements of an Advanced Alternative Payment Model (AAPM).

Our work with the practices has demonstrated an appreciable increase in appropriate care pathway utilization at scale. While the model will be open to all licensed eye care professionals, it is most likely to be adopted by optometrists who are more numerous than ophthalmologists and whose practices are widely distributed in cities, towns and rural areas.

This eye care focused AAPM is designed to incentivize reduction of Emergency Department (ED) utilization for ED-avoidable eye conditions. It utilizes a payment methodology based on existing fee-for-service (FFS) rates for ED-avoidable eye conditions. A discount will be applied to the eye care professionals' current FFS rates, creating inherent downside financial risk that will be offset by a shared savings opportunity if a participating eye care professional meets performance requirements. Both the discounted FFS rates and the anticipated shared savings will provide financial incentives for eye care professionals to expand urgent care access for patients with immediate clinical needs. The APM will incorporate a "quality gate" that will require participating eye care professionals to report on and meet minimum thresholds on selected quality measures to participate in shared savings payments through the APM.

Data from the Nationwide Emergency Department Sample (NEDS) from the Healthcare Cost and Utilization Project (HCUP) databases from 2012 through 2016 demonstrate that on average more than 1.8 million people seek care in an emergency room each year for conditions that are within the scope of practice of outpatient Optometry. These visits generated $1.9 billion in charges across all payers in 2012 and increased to $3.1 billion in charges in 2016.

The proposed APM's overarching aims include: improvement of quality, access and patient convenience related to care for ED-avoidable eye conditions; increased clinical efficiency (e.g. reducing unnecessary or inappropriate services); decreased total cost of care for patients with urgent, ED-avoidable eye conditions; improved patient experience of care (e.g., reduced medical complications, reduced time in ED, and reduced out of pocket expense).

II. MODEL DESCRIPTION

1. Background and Model Overview of the Eye Care Emergency Department Avoidance (EyEDA) Model

Payment problem

Between 2006 and 2011, non-emergent conditions accounted for 44% of all eye-related emergency department (ED) visits in the United States.[1] Expanded use of and improved access to eye care professionals' offices could prove more cost-efficient than visits to the ED for these ED-avoidable ocular problems.[2] Patients who are better educated to seek care for non-urgent ocular diseases in an office-based setting as an alternative to the ED could yield considerable cost savings without adversely affecting health outcomes.[3]

Current Medicare and other payer payment methods, rules and procedures, however, lack incentives to ensure that visits for non-emergent eye conditions occur in the most appropriate, least costly settings of care. Hospitals lack incentives to redirect patients away from their EDs; office-based eye care professionals lack sufficient financial incentives to expand access and availability for patients with immediate eye care needs; and patients lack information and awareness of the most appropriate setting for care of their eye conditions.

Savings Opportunity

As part of a collaborative effort among eye care professionals participating in the Transforming Clinical Practices Initiative (TCPI), a program funded by the Centers for Medicare and Medicaid Services (CMS), optometry and ophthalmology practices have been modifying their clinical and practice operations in preparation for participation in value-based payment systems. Led by the Southern New England Practice Transformation Network (SNE-PTN), a collaboration between the University of Massachusetts Medical School (UMass) and UConn Health, the team analyzed ED-avoidable eye conditions. SNE-PTN developed a list of ED-avoidable eye conditions with input from subject matter experts and an independent review panel (See Appendix B). UMass analyzed data for the years 2012 through 2016 from the Healthcare Cost and Utilization Project's (HCUP) Nationwide Emergency Department Sample (NEDS) dataset to identify ED visits for ED-avoidable eye conditions and estimated the payments associated with those conditions. UMass estimated that during this 5-year period there were almost 11.9 million ED visits for ED-avoidable eye conditions resulting in more than $2.57 billion in payments. The Eye Care Emergency Department Avoidance (EyEDA) physician-focused payment model (PFPM) is designed to reduce this cost.

Payment Model Goals

To date, eye care professionals, especially optometrists, have had minimal opportunities to participate in an APM. Our Advanced Alternative Payment Model by eyecare professionals addresses this opportunity gap for these clinicians. EyEDA intends to:

- increase efficiency by encouraging appropriate utilization of eye care services;
- reduce the total cost of care to payers and patients for non-emergent eye conditions;
- improve the quality of patient care and patients' experience of that care;

- reward eye care professionals for meeting the model's targets and improving the quality and the value of care;
- increase the number of eye care professionals implementing the financial, clinical, and operational systems required for participation in the payment model; and,
- help TCPI enrolled optometrists to achieve Aim 6 of the TCPI program (to transition 75% of enrolled clinicians and practices into an APM or Advanced APM).

The EyEDA model meets criteria for an Advanced APM under CMS guidelines which require:

- "Use of certified Electronic Health Record (EHR) technology;"
- "Base payments for covered professional services on quality measures that are comparable to those used in the Merit-based Incentive Payment System (MIPS) quality performance category" and;
- "Participants to bear a significant financial risk." [4]

Payment Model Overview

To create incentives that will achieve the goals above, the EyEDA model focuses on optometrists and ophthalmologists as well as individuals, practices and other entities employing these eye care professionals. These eligible providers will, through patient education, redirect patients with non-emergent eye conditions away from hospital EDs and towards their offices. The participating eye care professionals will expand access for patients with ED-avoidable care needs (based on a list of ICD 10 diagnosis codes for qualifying ED-avoidable eye conditions, listed in Appendix B). The enhanced access will include the focused accommodation of walk-in patients as well as after-hours triage and the availability of on-call eye care professionals.

In addition to Medicare, the EyEDA model will be offered to private payers and Medicaid programs. Patients of any age empaneled by a participating payer will comprise the eligible population for the EyEDA model.

Medicare and other participating payers will establish target utilization goals for the participating providers based on provider-specific historical volume of ED-avoidable visits. Payers will select a base year or years and determine base year visits for each eligible provider. Payers will select a specific percentage increase over base year visits to determine provider specific target utilization for each participating provider. Providers that meet or exceed the target number of qualifying ED-avoidable visits and demonstrate maintained or improved quality performance will receive shared savings payments from payer savings achieved through the reduction in utilization and payments to EDs.

Payment Rates

Payments to eligible eye care professionals for services to EyEDA patients will be based on existing fee-for-service (FFS) rates for evaluation and management services, comprehensive eye exams and other services such as procedures and treatment of the qualifying eye conditions. Providers will bear financial risk in the form of a discount of at least 8% applied to all FFS rates for urgent visits. If participating providers do not meet utilization targets or quality performance thresholds, their financial loss will equal the minimum of 8% of payments for qualifying visits during the performance year. The financial incentives of shared savings payments along with the built-in downside risk from the FFS discount will motivate eligible professionals to meet their

utilization targets in order to receive shared savings payments greater than the loss due to the discount.

Quality

To ensure the EyEDA model maintains or improves quality, providers will be required to meet or exceed quality thresholds in two domains—patient experience and patient safety. To measure patient experience, a standardized patient survey will be administered to patients who receive care for ED-avoidable conditions from an eligible eye care professional. The overall patient experience measure will consist of a composite score based on results from multiple survey questions that determine the annual quality score for a practice or eligible entity.

Patient safety will be measured as the absence of adverse events within 7 days after an office-based visit to an eligible eye care professional for a qualifying ED-avoidable eye condition. Medicare and other participating payers will evaluate claims data for eligible visits that occurred during the performance year in order to calculate 7-day post-visit adverse event rates for adverse events including unscheduled ED visits, unscheduled hospital admissions, a new diagnosis of blindness or permanent vision damage, or death.

Participating providers must meet minimum thresholds in the two quality domains in order to receive shared savings and continue participation in the APM.

Phase-In Period

The year(s) selected as the base year can be used as a phase-in period in which payers could pay participating providers for reporting only or performance on quality measures with no shared savings or downside risk. This period could be used for providers to implement operational changes (e.g., enhanced phone systems, on-call systems, or opening scheduling) to expand access for patients with immediate eye care needs. Payers would use the phase-in base period to collect base year utilization and quality data.

2. Patient Perspective

The patient healthcare experience is an integral aspect of the proposed EyEDA model. EyEDA intends to improve the patient experience by reducing the likelihood of complications, reducing time in ED and reducing out-of-pocket expenses.

Measurement of patients' experience of care will provide important information on patient satisfaction with urgent eye care received in an office setting. The experience of the optometry practices and patients in TCPI indicates that patients who receive care in office settings have an improved experience relative to an ED visit.

Patient experience in the EyEDA model will be measured via a standardized patient survey implemented through a single administrator. Scores on multiple survey questions will be combined into a single composite score to reflect performance on patient experience for the eye care professional or practice. Performance on the patient experience survey will serve a gating function for shared savings payments, that is, practices will have to meet a minimum score to receive a payment.

3. Provider Perspective

Participating Eligible Professionals

The EyEDA model will create a pathway for eligible eye care professionals to participate in an Advanced APM where they previously had no opportunities to do so. The discounted FFS rates and the anticipated shared savings in the EyEDA model will provide financial incentives for these professionals to expand access for patients with immediate eye care needs. The model will incentivize participants to expand their capacity to provide urgent care and to educate patients and other health care providers about this capacity.

Participant-Risk bearing Entity

The risk bearing entity is the eye care private practice, corporate practice, multi-disciplinary practice or other non-physician-owned entity that employs an eligible eye care professional. Payments will flow between the payer and the participating entity. Successful participation will be based on the participating entity's ability to meet quality requirements and to achieve the target rate of visits in the performance year.

Hospital ED Experience

EyEDA will reduce ED visits for ED-avoidable eye conditions. While this change will reduce revenue for hospitals, it will also provide benefits to hospital ED by freeing up ED resources for patients with true emergent conditions, easing overcrowded ED waiting areas, and reducing the number of patients in EDs with potentially communicable conditions, such as conjunctivitis.

Primary Care Physicians and Other Providers

This model provides an opportunity for eye care professionals to create a strong network for the coordination of care of patients with ED-avoidable eye conditions. Eligible eye care professionals will inform PCPs and other physicians in the medical neighborhood about the types of eye conditions that should be directed to office-based settings to avoid unnecessary ED visits. Additionally, eye care professionals will ensure timely follow-up by sending reports back to PCPs and other providers to keep them informed on the status of their patients' eye conditions.

III. RESPONSE TO CRITERIA

1. Scope

A. Targeted Physician Overview

The EyEDA model is designed to incentivize reduction of ED utilization for ED-avoidable eye conditions. The goals of the EyEDA model include reducing the utilization of ED resources by increasing care in settings that offer lower cost, greater convenience for patients, and improved access while maintaining or improving quality of care and patient outcomes.

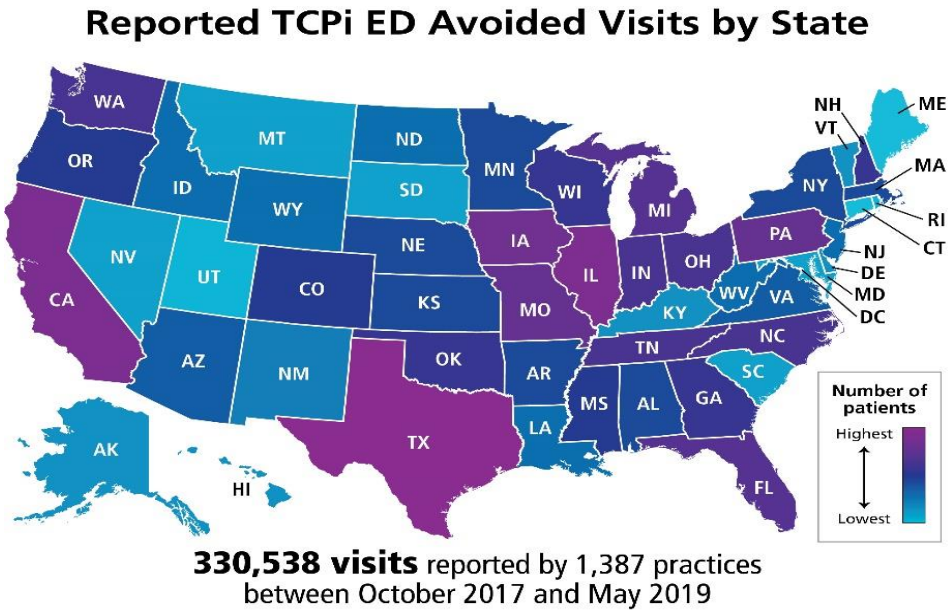
Currently, Medicare payment rules and procedures lack incentives for providers to ensure that visits for non-emergent eye conditions occur in the most appropriate, least costly settings of care.

While EyEDA will be open to all licensed eye care professionals, it is most likely to be adopted by optometrists who are twice as numerous in the US as ophthalmologists, and whose practices are widely distributed in cities, towns and rural areas. Currently, ophthalmologists have other

opportunities to participate in value-based payment models (ACOs and specialist APMs), while most optometrists will consider the EyEDA model their first opportunity to participate in an APM.

B. Physician Participation Interest Level

SNE-PTN has provided technical assistance to over 1,600 optometry practices across the nation, supporting improvements in clinical processes and practice operations to improve outcomes and reduce costs. From October 2017 through May 2019, optometrists enrolled in this TCPI program have helped more than 300,000 patients avoid the ED through same-day office-based appointments and after-hours triage.



Feedback from optometrists participating in TCPI indicates many TCPI-enrolled optometrists would participate in EyEDA. Further, interest from other eye care professionals nationally suggests many would also participate in the Advanced APM upon implementation. UMass, along with partner organizations representing the Optometry profession, will facilitate implementation of this payment model through active recruitment of payers and licensed eye care professionals.

C. Physicians Eligible to Participate

Physicians and other professionals eligible to participate in this model include optometrists, ophthalmologists and practices employing these physicians that: 1) hold valid current clinical state licensure, 2) use certified Electronic Health Record technology (CEHRT)[5]; and, 3) agree to participate in the monitoring of quality and outcomes metrics.

In 2018, there were 37,220 practicing optometrists and the profession is expected to grow by 18% between 2016 and 2026, according to the Bureau of Labor and Statistics (BLS). Almost 60% of optometrists are in private practice, over 20% are in corporate practice, 14% are in a multidisciplinary practice, and approximately 6% are in another practice type. [6,7]

In 2014, there were an estimated 19,216 active ophthalmologists.[8] In contrast to the growth of the optometric profession, the Health Resources and Services Administration predicts there will be a shortage of over 6,000 ophthalmologists by 2025.[9]

D. Alternative Payment Model Opportunities

Eye care professionals across the U.S. have had few opportunities to join an APM and no opportunities to join an Advanced APM. Further, ACOs with participating optometrists and ophthalmologists most often treat these eye care professionals as specialists or affiliates who carry no downside risk. The EyEDA Advanced APM will offer these eye care professionals a chance to participate in an APM at a level that includes downside risk and payment linked to meeting performance goals related to cost savings and quality.

The number of practices that met the eligibility requirements for MIPS has decreased as a result of the increased MIPS threshold. EyEDA provides a pathway for these practices to participate in a national risk-based payment environment.

E. Previous Model Deployments

To date, no payer has implemented this model.

F. Small Practice Implementation and Feasibility

The EyEDA model design is based on the experience of optometry practices participating in the TCPI program through SNE-PTN. These practices were typically smaller practices (averaging 1.8 clinicians/per practice). They were able to implement small changes to their practice operations to accommodate patients with immediate eye care needs and demonstrate that they provide quantifiable value outside of the scope of MIPS.

G. Patient Market

On average more than 1.8 million people seek care in an ED each year for the EyEDA set of ED-avoidable eye conditions (Appendix B). Approximately 60% of these patients were adults aged 18-64, 30% were children 0-17, and 10% were elders aged 65 and older.

UMass's analysis of HCUP NEDS databases from 2012 through 2016 found that the characteristics of patients who visited the ED for ED-avoidable eye conditions had a similar distribution across the five-year period. The patient characteristics examined included age, gender, urban vs. rural county of patient residence and median household income of the county of residence; these are described in detail in Appendix D.

H. Patient Experience

Patients who received care for ED-avoidable eye conditions from an optometrist as a result of the SNEPTN TCPI intervention program have benefitted from receiving eye care services in an office setting as an alternative to the ED. Specifically, these patients experienced shorter wait times, quicker and more accurate diagnosis in the first encounter, and improved overall experience.

Optometrists have the ability to routinely diagnosis conjunctivitis cases and differentiate between bacterial, viral or non-infectious conjunctivitis. This diagnostic capacity saves time by avoiding

additional visits, avoids added costs and minimizes out-of-pocket costs. Eye care practices have infection control procedures that expedite the patient visit and protect other patients from the spread of infection.

2. Quality and Cost

A. Improvement in Care Delivery and Cost

EyEDA intends to decrease cost while maintaining or improving quality of care and access to care. The model will reduce the utilization of ED resources for ED-avoidable eye conditions in favor of care settings that offer lower cost, greater convenience for patients and comparable or improved patient outcomes. The care provided at an eye care professional's office costs considerably less than the services provided by the ED, and the patient will likely experience more appropriate and specialized care from the eye care professional.

The EyEDA payment model will create incentives for payers, providers and patients to change behaviors and patterns of care. Potential cost savings will motivate stakeholders to increase the accessibility and availability of eye care services in office-based settings and to educate patients and other providers about the availability and advantages of these services. These steps will help change patient behavior when they seek care for urgent eye conditions.

Cost and Utilization

The cost savings opportunity resulting from the redirection of ED utilization for ED-avoidable eye conditions to office-based settings was approximately $ 593 million in total payer expenditures, based on the analysis of 2016 HCUP NEDS data (see details in Appendix D).

Patients with Medicare as the primary payer have made up a small but growing share of ED-avoidable visits for eye conditions. In 2016, Medicare beneficiaries comprised 12% of ED-avoidable visits for eye conditions, up from 10.8% in 2012. As the population ages, the EyEDA model anticipates continued growth in ED utilization for Medicare beneficiaries with ED-avoidable eye conditions. The EyEDA model's total cost savings opportunity for Medicare based on 2016 data is almost $90 million.

Private payer payments comprise the largest share of ED-avoidable expenditures on eye care conditions at approximately $263 million in 2016. The ability of the EyEDA model to achieve savings among private payers will depend on private payer participation and eligible professionals' participation, among other factors.

Table 1. Cost Savings Opportunity

Cost Savings Opportunity		
Payer Category	2016 ED-avoidable Visits for Eye Conditions	2016 Estimated Expenditures
Medicare	226,000	$ 89,000,000
Medicaid	699,000	$ 141,000,000
Private Insurance	582,000	$ 263,000,000
Other Payers, Self-Pay	380,000	$ 100,000,000
Total	1,887,000	**$593,000,000**

Patients with Medicaid as the primary payer comprise the largest share of ED-avoidable visits for eye conditions at 37% in 2016, up from 31% in 2012. Estimated payment for Medicaid's ED-avoidable utilization for eye care is $141 million.

Quality of Care

EDs often do not have eye care professionals present to treat eye emergencies, generally would not call in a specialist to treat this set of ED-avoidable conditions, and typically lack the equipment needed to thoroughly examine the posterior segment of the eye.[10] For example, a national survey of Accident and Emergency (A&E) Departments in the United Kingdom found that "68.8% had only a little or no confidence in dealing with these cases, and 42.2% worked in A&E departments which had no slit lamp."[11] Experts consulted in the development of this model confirm similar trends exist in US EDs.

The re-direction of visits for non-emergent eye conditions from the ED to the office-based settings of eye care professionals will maintain or improve quality and outcomes for these patients. Compared to a visit to an ED for an urgent eye condition, a visit with an office-based eye care professional will:

- Reduce time spent waiting to see a clinician,
- Result in an initial examination performed by a clinician with the most appropriate expertise for diagnosis of eye conditions,
- Increase the likelihood of a specific and accurate diagnosis occurring sooner,
- Increase the likelihood of initiating appropriate treatment sooner,
- Improve patients' experience of care, and
- Increase the likelihood of improved health outcomes.

Many measures of quality were considered for use in this model covering quality domains including coordination of care, clinical quality and efficiency. Existing quality measures in the Merit-based Incentive Payment System (MIPS) and the Quality Clinical Data Registry (QCDR), however, did not easily apply to our model. The most relevant measures of quality that are feasible to implement for the proposed EyEDA model are in the categories of patient safety and patient experience.

To maintain or improve the quality of care, the proposed model will measure patient safety by monitoring the occurrence of adverse events within seven days of the office visit with the eye care professional and incorporate a patient survey to measure the patient's experience of the office visit.

Patient Safety/Outcomes

UMass analyzed HCUP NEDS data to examine the cost and utilization patterns experienced by patients visiting the ED for ED-avoidable conditions (See Appendix D). In 2016, 97% of these visits resulted in a routine discharge from the ED to home demonstrating that in the majority of cases of ED-avoidable eye conditions, the patient's condition did not warrant admission to a hospital or other health care facility for further treatment. Only 1.1% of the visits resulted in admission to the same hospital and 0.5% to another short-term hospital. A review of secondary diagnosis for these 1.6% of patients who were admitted indicates that many of these patients had

serious comorbidities and were likely admitted because of the comorbidity, not only the eye condition.

The EyEDA model intends to maintain or improve the level of safety and outcomes of care experienced by patients in office-based settings relative to the ED. The measures of patient safety in the proposed model is adapted from existing outcomes measures, currently used in CMS programs for three outpatient surgeries and procedures:

- Facility 7-day Risk-Standardized Hospital Visit Rate after Outpatient Colonoscopy[12]
- Hospital Visits after Urology Ambulatory Surgical Center Procedures,[13] and
- Hospital Visits after Orthopedic Ambulatory Surgical Center Procedures[14]

These measures evaluate the rate of unscheduled hospital visits (ED, observation stay and inpatient admission) that occur within 7 days after a specific type of outpatient visit. Consistent with these measures, performance on patient safety for office-based eye care visits will be measured as the rate of adverse events within seven days after the eye care office visit. Adverse events within seven days after the office visit are more likely to be relevant to the eye care visit than a period of time longer than seven days. To further ensure that the adverse event is related to the initial eye care visit, only events with an ICD 10 code related to the original office visit will count as an adverse outcome for the eye care professional or practice. The EyEDA model tracks the adverse events listed in Table 2.

Table 2. Patient Safety Measurement

Seven-Day Post-Visit Adverse Events Related to Eye Care Professional Office Visits for ED-avoidable Eye Conditions
Unscheduled ED visit related to same ICD 10 Dx as original office visit
Unscheduled inpatient admission or observation stay related to same ICD 10 Dx as original office visit
Blindness or permanent visual impairment in one or both eyes, newly diagnosed, related to same ICD 10 Dx as original office visit
Death related to the office-based treatment for the same ICD 10 Dx as original office visit

EyEDA will calculate an adverse event rate by dividing observed adverse events occurring in the performance year by total eligible office-based eye care visits during the performance year. The adverse event rates could be adjusted for age, gender and/or other risk factors.

Office-based Eye Care 7-Day Post-Visit Adverse Event Rate	Numerator: *Sum of occurrences of unscheduled ED visits, unscheduled hospital inpatient admissions, blindness/permanent vision damage, or death occurring within 7 days of eligible office visit during Performance Year* Denominator: *Total Eligible Office-Based Eye Care Visits during Performance Year*

Patient Safety Threshold/Benchmark

The eye care practice's adverse event rate will be compared to the adverse event rate for visits to the ED. The eligible eye care practice or entity will achieve the patient safety threshold if its adverse event rate is less than or equal to the adverse event rate for ED-avoidable eye conditions in the ED setting.

Payers shall evaluate claims to identify adverse events at a minimum of once per year and will generate annual final outcome score for each eye care professional or practice after the end of the performance year. It is recommended that payers also provide data on adverse events to eye care professional and practices during the performance year, for example, on a quarterly basis. Payers shall also establish a feedback process for providers to respond to outcomes data received from payers as well as an adjudication process to address disputes.

Patient Experience/Satisfaction

Patient experience will be measured via a standardized patient survey implemented through a single administrator. The patient survey developed by UMass referenced other standardized and validated patient experience surveys including the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Clinician & Group survey, the Canadian Institute for Health Information's survey on Measuring Patient Experiences in Primary Health Care, and a United Kingdom shared care glaucoma scheme survey of patient satisfaction.[15]

Scores on core survey questions will be used to establish threshold performance measures for patient experience. Participating providers will need a score of 3 points or more (on a 4-point scale) on each of the core survey questions to meet threshold performance for patient experience. The survey questions focus on timeliness, convenience, efficacy and definitive nature of the care provided (see Appendix E – Patient Survey).

The patient survey shall be administered on a rolling basis (e.g., monthly) to ensure patients are asked about their experiences relatively soon after an urgent visit with an eligible eye care professional. Survey results shall be provided as feedback to practices more than once annually and up to four times per year. The cost of the survey administration will be incorporated into the shared savings calculations after the end of the performance year and therefore will not provide an additional burden to participating eye care professionals. The provision of timely feedback of the survey results to the practices will offer additional benefits to patients, providers and payers, as it may be used to improve operations.

Quality Performance – Link to Payment

Eligible providers must meet quality performance thresholds for both patient safety and patient experience to receive shared savings distributions and to continue participation in EyEDA.

B. Barriers and Risks

EyEDA is designed to overcome several barriers to achieve the desired savings and quality goals. Eye care professionals do not have incentives to expand access for urgent care patients. Patients lack awareness of the existence of alternatives to the ED for urgent eye conditions. Hospitals lack incentives to dissuade or redirect patients with nonemergent conditions away from the ED. A 2015 study of ED profits showed that ED care for patients with nonemergent conditions was just as profitable as ED care for patients with emergent conditions (9.8% and 9.7%, respectively).[16]

C. Performance Metrics and Data Collection

Utilization targets will be established using data from a selected base year or years. Base period data can be collected during a phase-in year or years. Cost savings will be calculated during a

retrospective reconciliation using claims data after end of the performance year to determine whether targets were achieved. Shared savings distributions will be calculated at this time. Data for measuring quality will consist of composite survey scores from the patient survey and results from retrospective claims data analysis to identify post-visit adverse events.

D. Electronic Reporting

EyEDA requires participating practices to utilize a fully certified HIT platform, ideally one that maintains the following functionalities:

- The ability to track and produce reports on quality and interoperability measures.
- The ability to send and receive secure messages between clinical care locations to close the referral loop, including but not limited to medication reconciliation, after visit summary, and services rendered as pertaining to the patient's diagnosis or referral.
- Electronic submission of claims data.

E. Monitoring and Auditing

Payers implementing the EyEDA model will use their own paid claims data to monitor total cost of care and resource utilization.

To monitor quality, a survey administrator will provide survey results and performance scores to participating entities two to four times annually and, participating payers will monitor claims during the performance year and provide data on post-visit adverse events two to four times during the year.

F. Impact on Medicare and Commercial Spending

Table 3 shows current spending for visits for ED-avoidable eye conditions by primary payer.

Table 3. Estimated Payment by Expected Primary Payer for Avoidable Emergency Departments Visits for Eye Conditions, HCUP NEDS, 2012-2016 (in millions of dollars)

Payer	2012		2013		2014		2015		2016	
	$	%	$	%	$	%	$	%	$	%
Medicare	56	11.9	64	13.3	69	14.2	78	14.5	89	15.1
Medicaid	93	19.9	99	20.6	116	24.0	138	25.6	141	23.8
Private	212	45.1	211	43.8	205	42.5	231	42.9	263	44.2
Other	108	23.1	107	22.3	93	19.3	91	17.0	100	16.9
Total	469	100.0	481	100.0	483	100.0	538	100.0	593	100.0

Payment estimates were calculated using charges from HCUP NEDS data and applying payment-to-charge ratios by payer category. Payment-to-charge ratios were calculated by multiplying 1) a weighted average cost-to-charge ratio from Medicare Hospital 2552-10 Cost Reports by 2) payment-to-cost ratios for Medicare, Medicaid and private payers from the Analysis of American Hospital Association Annual Survey Trendwatch Chartbook. Other payers (federal and state programs, workers compensation, charity care, and self-pay) were aggregated into a single "other payer" category; the PCR for these payers was assumed to be 1.0. (See Appendix C for more detail.)

3. Payment Methodology

A. EyEDA Payment Methodology

Model Specifications

EyEDA uses a payment methodology based on existing fee-for-service (FFS) rates for services for eye conditions identified as those which do not require an ED setting (ED-avoidable). A discount will be applied to the FFS rates creating built-in downside risk with the expectation that eye care professionals will meet performance requirements and receive shared savings payments greater than the loss due to the discount. Performance requirements include 1) increasing the number of office-based visits for ED-avoidable eye conditions to achieve target levels of utilization, and 2) meeting quality performance thresholds for patient safety and patient experience. Both the discounted FFS rates and the anticipated shared savings will provide financial incentives for eye care professionals to expand access to accommodate daytime and after-hours patients with immediate eye care needs.

To ensure the APM maintains or improves quality and outcomes for patients receiving care in an eye care professional's office rather than the ED, the APM will require participating providers to report on selected quality measures. Performance on quality and outcomes will affect 1) eligibility to receive shared savings payments, and 2) future participation in the APM. Table 4 below presents the overall model specifications.

Table 4. APM Model Specifications

Model Parameter	Specifications
Eligible Population	Patients, all ages, having coverage with a payer participating in the APM
Eligible Payers	Medicare, Medicaid and Private payers that choose to participate
Eligible Providers	Individuals and practices employing individuals who: 1) have valid current clinical state licensure as an optometrist or ophthalmologist, 2) use certified Electronic Health Record technology (CEHRT)[17]; and, 3) agree to participate in the monitoring of quality and outcomes metrics.
Qualifying ED-avoidable Eye Conditions[18]	ICD 10 diagnosis codes for eye conditions in the categories of: Conjunctivitis, Corneal Injury, Corneal Injury with Foreign Body, Hordeolum, Acute Posterior Vitreous Detachment, Eye Pain, and Other eye conditions
Eligible Visits	Visits to eligible providers for Qualifying ED-avoidable Eye Conditions
Fee for Service Rates	Fees based on CPT codes for Evaluation & Management, Comprehensive Eye Exams and other services
Discount on FFS Rates (downside risk to provider)	The discount percentage on rates of payment will be determined so that the resulting total risk will be at least 8% of combined revenues from the payer to providers participating in the APM[19]

Model Parameter	Specifications
Base Year (BY) Utilization	Base Year utilization will be based on the most recent full year (or two or more historical years) of provider-specific data for eligible ED-avoidable visits for the specified eye conditions
Performance Year (PY) - Utilization Targets	Provider-specific utilization targets will equal a certain percentage above the provider's Base Year utilization (e.g., 10%, 15%, 20%)
Shared Savings Percentages	Savings will be shared between participating payers and providers based on an agreed upon allocation (e.g., 50/50).
Quality Measures	Eligible providers will be measured on quality in two domains: patient experience and patient safety. Providers must meet minimum thresholds in these two quality domains in order to receive shared savings and continue participation in the APM.
Phase-In Period	The year(s) selected as the base year can be used as a phase-in period in which payers could pay participating providers for reporting only or performance on quality measures with no shared savings or downside risk.

Patient Eligibility

Eligibility of patients shall be determined by Medicare eligibility data for beneficiaries and other payers' enrollment data for other payer members/subscribers. As the shared savings distributions are determined through retrospective reconciliation, this will ensure patients are not excluded inappropriately.

Definition of ED-avoidable Visits for Eye Conditions

The APM will cover non-emergent eye conditions, specified using a list of ICD 10 diagnosis codes in six clinical categories plus an "other" category to capture symptom-based diagnoses. The list of over 750 codes has been reviewed and attested by a review committee comprised of optometrists and physicians and shared with a representative from the American Optometric Association. (See Table B1 in Appendix B).

The proposed APM will enhance the accuracy and consistency of identification of conditions and coding of diagnoses compared to the current system. EDs typically do not provide an eye care professional to diagnose ED patients with these eye conditions, and they lack the expertise to consistently provide accurate diagnoses. Optometrists and ophthalmologists possess the training, expertise and equipment to provide consistent and accurate diagnoses of eye conditions. This feature of EyEDA will reduce additional costs resulting from additional follow-up care when a condition is incorrectly diagnosed or not definitively treated.

To further ensure appropriate coding, payers' medical management teams will have the opportunity to review providers' coding during the annual review that includes claims analysis for the determination of shared savings and the evaluation of performance on outcomes.

Payment Rates and Financial Risk
Eligible eye care professionals will receive discounted FFS rates based on current Medicare (or other payer) fee schedules for evaluation and management services, comprehensive eye exams and appropriate procedures for the diagnosis and treatment of ED-avoidable eye conditions. At a minimum, payers will pay participating providers discounted FFS rates for the services listed in Appendix C, Table C1.

The EyEDA model applies a minimum discount percentage of 8% to all FFS payment rates for services to patients with ED-avoidable eye conditions. Participating APM entities will consequently bear more than a nominal amount of financial risk as the discount is built into the rates for these services.

Performance Targets
Medicare and other participating payers will set target levels of utilization based on the claims experience of eligible providers during the base year. Target utilization will be calculated as a specified percentage above base year visits for eligible eye conditions:

Performance Year Target Visits = Base Year Visits x Target Percentage Increase (e.g., 10%, 20%, 30%)

Payers may adjust the target percentage increases annually according to their overall performance goals. The anticipated shared savings will provide financial incentives for eye care professionals to meet these performance targets. Providers will expand their practices' urgent care access while promoting and increasing public and medical community awareness of the eye care professional's office as the most appropriate setting to treat patients with immediate clinical needs for eye injuries and other ED-avoidable eye conditions. This expansion and promotion of the availability of office-based services for urgent eye conditions will allow eligible eye care professionals to meet their annual utilization targets.

Shared Savings
Savings will be calculated by payers as part of a retrospective reconciliation using claims data. The general calculation for the savings pool for distribution will be as follows:

Table 5. Calculation of Savings Amount for Distribution

1.	Change in payments to EDs	Performance Year ED payments less Base Year ED payments
2.	Change in payments to eligible providers	Performance Year payments to eligible providers less Base Year payments to eligible providers
3.	Program costs	Administrative costs for monitoring and evaluation of quality performance
4.	Net Shared Savings for Distribution	(-1 x (L.1 + L.2)) – L.3 (if positive)

Discounted FFS payments for eligible eye care services would be paid to the practice. Shared savings would be determined based on the practice's average number of ED-avoidable visits per FTE eye care professional during the performance year. Practices would distribute shared

savings to individual eye care professionals based on the practice's revenue sharing arrangements with its employed eye care professionals (see Appendix F for detailed examples).

The model will ensure appropriateness of services and procedures in three ways. First, patients will be accurately diagnosed by trained eye care professionals. Second, the eligible professional will have an incentive to provide appropriate care that will result in a positive health outcome for the patient, as performance on patient safety measures (absence of post-visit adverse events) will impact a provider's participation in shared savings. Third, the measure of the patient's experience of care will also impact the provider's participation in shared savings.

Because the proposed model is not episode-based, there is no difficulty in assigning services to the correct episode of care. The episode consists of only one visit – the initial urgent care visit for an eye condition on the list of diagnoses of ED-avoidable eye conditions. Eligible visits do not include follow-up visits for the same condition.

Legal Barriers

We are not aware of any state or federal laws or regulations that would create barriers to implementation of the model. State regulations limiting eye care professionals' scope of practice would not prevent optometrists from quickly diagnosing an eye condition and making an immediate referral to an eye care specialist whose legal scope of service in that state includes the appropriate treatment options for the patient.

Similarly, we are not aware of any Medicare coverage issues that would create barriers for patients to be eligible beneficiaries for the EyEDA model.

Entities Not Owned by Eligible Professionals

Participating payers will decide whether they want to contract with entities not owned by eligible professionals. These entities, such as urgent care facilities or corporate vision chains, could participate as the eligible entity. The eye care professional would provide care to patients with immediate eye care needs, be responsible for performance on patient safety and patient experience metrics and would strive to achieve utilization targets. The participating entity would receive payment and shared savings from the payer according to parameters of the EyEDA model. Lastly, the participating entity would pay the employed eye care professional according to whatever revenue-sharing arrangements have been established in the contract between the entity and the employed eye care professional.

B. Incorporation of Performance Results

Eligible providers that meet provider-specific utilization targets and meet the minimum quality thresholds will be eligible for shared savings distributions.

Eligible providers that do not meet the minimum quality thresholds will not receive shared savings distributions.

C. Degree of Financial Risk

Eligible professionals will bear a financial risk of 8% of their FFS payments for evaluation and management services, comprehensive eye exams and treatment procedures for ED-avoidable eye

conditions. This loss will be incurred if the participating entity does not meet its utilization target or quality performance thresholds.

Risk adjustment is not necessary, because the payment methodology is based on FFS rates for evaluation and management, comprehensive eye exams and eye treatment procedures. The proportion of a practice's qualifying ED-avoidable visits relative to its total visits is expected to be small enough that the payment model should not create an unreasonable financial risk to the eye care practice. Likewise, other limits on financial risk--such as a cap on provider-specific losses--should not be required. The degree of financial risk in the EyEDA model will be more than nominal but should not pose a catastrophic threat to participating entities.

D. Comparison to Current Payment Methods

The proposed payment methodology differs from Medicare's FFS payment methodology in that it incorporates an 8% discount as built-in downside risk. Further, EyEDA offers the incentive of shared savings to participating eye care professionals, so they will expand access and promote the availability of care for patients with immediate eye care needs. Lastly, payment is linked to performance on achieving utilization targets and meeting quality and outcomes thresholds.

E. Barriers in Current Payment Methods

Current payment methods for Medicare and other payers lack incentives for providers to redirect patients with non-emergent eye conditions from the ED to an office-based setting with a trained eye care professional. Current payment methods for these services lack specific incentives for eye care professionals to promote (to their medical communities, networks and patients) the availability of less costly, more appropriate eye care services for patients with immediate eye care needs. Current payment methods also lack the measurement of performance on quality and outcomes and its link to payment for services to patients with ED-avoidable eye conditions.

4. Value over Volume

Financial Incentives and Non-Financial Incentives

EyEDA's structure will encourage providers to deliver higher-value health care by providing a number of financial and nonfinancial incentives to do so. The incentives included in the model are listed below, and it is reasonable to assume that providers who implement EyEDA may realize additional benefits beyond those nominally described in the model.

Table 6. Financial and Non-Financial Incentives

FINANCIAL INCENTIVES	NON-FINANCIAL INCENTIVES
Benefits of Shared Savings on EyEDA patients	Better patient experience as a result of a less expensive and time-intensive care experience (office vs. ED)*
Increased revenue (at discounted FFS rates) for new patients who seek office-based care as an ED alternative	Increased visibility in providers' communities as an option for health care solutions
Increased volume in patient encounters as providers and payers are incentivized to divert care to eye care professionals.	Increased visibility (and stronger relationships) with other providers within the medical neighborhood

FINANCIAL INCENTIVES	NON-FINANCIAL INCENTIVES
Peripheral revenue secondary to eyeglass, contact lens, and other peripheral services from new patients.	Higher visibility may lead to more opportunities to formally join care delivery models (like multidisciplinary care teams or hospital referral circles)

*Please see a sample of comments from patients who have been treated under TCPI's eye care ED avoidance approach below:

- One of our patients commented, "Quick and caring walk-in appointment for a foreign object in my right eye. Totally satisfied with the professional and competent care I received."

- A patient review of our practice said, "I was very impressed with their quick response to emergency eye need. [The doctor] is amazing. He is calming and takes the time to explain everything to you. The staff is very friendly and professional."

Eye care professionals have performed well in a TCPI effort to document and report their ability to treat the patients contemplated in the EyEDA proposal. The eye care professionals who have contributed data thus far have indicated enthusiasm for improving the real and perceived value of their care while concurrently appreciating the value created for payers and referring eye care professionals through decreasing the total cost of that care. This prior experience indicates that the incentives for eye care professionals are closely aligned with the EyEDA model, because they are able to realize additional practice revenue (currently at full FFS rates) while simultaneously performing as the lower-cost provider. This growth in patient volume produces savings for the system and improved care for the patient by positioning the eye care provider to concurrently execute on their practice's strategic goals. This synergy between higher value/lower cost care and normal business incentives suggests that EyEDA creates an attractive proposition in markets where it may be offered. In addition, payers are substantial beneficiaries of EyEDA since they will realize the benefits of lower costs. This financial benefit should align payers well with eye care providers in any effort to adopt, implement, and publicize EyEDA in any given market.

5. Flexibility

A. Adaptability for Different Clinical Settings and Patient Subgroups

EyEDA can be successfully deployed using existing technology and human resources across rural/urban settings and it augments existing care pathways. while providing an alternative to the ED in many cases.

This model could be deployed in any optometry or ophthalmology practice. Reporting requirements would be an insignificant burden to practitioners and would mostly consist of ensuring correct coding of office visits to capture the provision of ED-avoidable care. Payers could consider providing incentives for practitioners to implement a certified EHR.

The EyEDA model would require no changes to the workforce. This is an expansion of access paired with education and motivation from referring providers, patients, and payers.

B. Adaptability for Technology Changes

EyEDA has significant flexibility with regards to changing technology. There has already been significant progress made in implementing ocular telehealth programs. Specific programs have already been implemented around screening for diabetic retinopathy. Early results show that these systems can play a significant role in improving the screening rate for diabetic retinopathy which translates into significant improvements in population health, since early detection can reduce the likelihood of vision loss from diabetes.[20] The increased utilization of approved systems and devices to screen, triage, and safely treat patients remotely would directly benefit this model since these efforts may reduce barriers to care such as patient convenience, socio-economic factors, or access to a trained professional.

C. Operational Burden

Participation in EyEDA will require eye care professionals to have a certified EHR, track quality measures and bear financial risk (Requirements for the APM). Practices seeking to sustain continuous improvement would have the opportunity to exploit pre-existing resources, such as tools for triage, staff training, call centers, and EHR enhancements.

D. Infrastructure Requirements

The necessary infrastructure would already be in place for a practice or organization that is eligible for the PFPM.

6. Ability to be Evaluated

A. Evaluation Metrics

EyEDA can be evaluated on progress toward a number of goals, including:

- Improvement of quality, access and patient convenience related to care for ED-avoidable eye conditions
- Increased clinical efficiency (e.g. reducing unnecessary or inappropriate services)
- Decreased total cost of care for patients with urgent, but ED-avoidable eye conditions
- Improved patient experience of care (e.g., reduced medical complications, reduced time in ED, reduced out of pocket expense)

Key measures for evaluation include the following.

- Redirection of care to the most appropriate and least costly setting:
  - The changes in *utilization* of office-based services vs. utilization of the ED for non-emergent eye conditions
  - The level of *cost savings* achieved through reduced utilization in the ED and increased utilization of office-based services
- Measures of quality of care (patient safety, patient experience) in the ED versus an office-based setting
  - Comparison of post-visit adverse outcomes for ED vs. office-based setting

B. Evaluations Currently Underway

There are no evaluations of the proposed model under development that we are aware of. However, CMS is contracting with Mathematica to provide independent evaluation of the Transforming Clinical Practice Initiative, including measures and cost data.

7. Integration and Care Coordination

A. Resources Required for Model

ELIGIBLE PROFESSIONALS	OTHER ENTITIES FOR MODEL IMPLEMENTATION
Eye care providers	Third Party Payers
Referring physicians or other providers	Survey Administrator for Quality Measure
	APM Administrator (data submission and aggregation)

EyEDA can achieve its desired outcomes by better integrating existing medical providers who improve their coordination of patients with nonemergent eye care conditions. This care integration can be achieved largely through educating the medical neighborhood and the general public. Payers that deploy EyEDA will require an administrator to deliver and analyze patient satisfaction surveys and to deliver the administrative requirements in EyEDA (baseline and current patient volumes, data management).

B. Greater Integration of Care Coordination

The proposed EyEDA model increases the alignment of incentives shared between third party payers and providers through the proposed shared savings model. In addition, referring providers and eye care professionals who share patients will benefit from the nonfinancial advantages of the improved patient care experience. Referring providers who may be operating in their own risk sharing models will also realize the benefits of office-based nonemergent eye care as an alternative to ED utilization.

C. Coordination of Team Members Not Financially Vested

The proposed EyEDA model will encourage and support coordination even with entities that are not directly participating in the payment model. Eye care providers who enroll and perform in EyEDA will be able to quantify their value, publicize their role in decreasing costs for financially vested parties (payers and risk-bearing providers as described in Item B above), and the resultant improvements in patient care and satisfaction will be disseminated to community members who are proximal to EyEDA patients (family members, work colleagues, other providers).

Shift of volume from ED to outpatient eye care settings will benefit the entire healthcare system, including payers who have not adopted the model.

8. Patient Choice

A. Preservation of Patient Choice

The targeted patient population that EyEDA will serve is patients with ED-avoidable eye conditions in the geographic area of the eye care provider. EyEDA allows patients to be treated in their communities at a local provider known by themselves or their PCP, rather than seeking care at an ED. Patients will retain the ability to choose their care pathway for urgent care visits from an eye care provider of their choice, urgent care or the ED. EyEDA aims to educate patients about the ability of eye care providers to avoid the utilization of an ED. Patients' clinical needs will be met by a clinical professional who possesses the expertise necessary to provide direct care and follow-up, continuity of care, and coordination/collaboration between providers. Patients are able to access eye care professionals because they are located in convenient settings across the country and may provide an alternative to an ED. Shorter wait times contribute to positive patient experiences in this option. Patients will be engaged in their treatment and follow-up, so their needs and preferences are met.

B. Impact on Disparities in Medicare

It is unknown as to whether the payment model will reduce disparities among Medicare beneficiaries by race, ethnicity, gender, disability and/or geography, and there are no known duplicative efforts amongst this and existing models.

EyEDA intends to improve access to care for all patients by promoting resources already available. The prevalence of eye care professionals in rural areas represents an opportunity to improve care by better leveraging eye care providers' capacity and expertise to provide an additional care pathway for patients requiring urgent eye care.

EyEDA also intends to address a barrier to care by reducing the financial burden on patients. This solution will improve population health through its reduction of the impact of high out-of-pocket costs for individuals and families (as office visits are associated with lower co-pays compared to ED visits), uncertainty of coverage,[21] and the reduction of duplicative efforts.

9. Patient Safety

A. Primary Patient Safety

EyEDA is designed to minimize cases of unintended consequences and suboptimal patient outcomes. EyEDA should reduce the harm to patients by directing them to a provider who has the capability to provide definitive care.

At least one study has found that patients referred to an acute ophthalmological eye clinic by optometrists had the most accurate referral diagnosis (75.8%), followed by ED referrals (64.6%), general practitioner (PCP) referrals (46.8%), and hospital-based doctor referrals (23.9%). When comparing vitreo-retinal diagnosis optometrists again had the highest accuracy (84%), followed by ED (46.7%), hospital-based (30.6%), and general practitioners (28%). [22]

An additional published study showed that there was a high level of agreement in both the diagnosis and management outcome between optometrists and optometrists within the accident and emergency department of Moorfields Eye Hospital in London.[23]

B. Necessary Care and Monitoring

Patient outcome lookbacks (7 days), and patient surveys will be measures used to ensure the provision of necessary and appropriate care. Given the relatively simple fee schedule for office-based visits and the fact that every visit is associated with a reimbursement, it seems very unlikely that any services would be withheld from patients due to practitioner participation in EyEDA.

C. Integrity of Intended Benefits

The model intends to reduce disruptions and minimize the overall volume of care transitions by incentivizing payers, providers, and patients to actively educate and collaborate. This APM intends to reduce the burden of care transitions by reducing the volume of visits. Here are two examples:

1. ED – Eye Care Professional - PCP = Current state: Patient seeks care for an eye problem that they deem urgent after-hours, at a time of limited access, or they self-refer to the ED. Patients with the covered diagnosis are likely to be triaged, treated, and released with instructions to follow-up with their eye care provider in the coming days. The patient then sees their provider who then provides definitive treatment and refers the patient back to their PCP. The PCP is tasked with tracking down and piecing together the notes from the providers.

2. Eye Care Professional - PCP = Ideal state: Patient has been educated by their payer, providers, or marketing that if they have an ocular issue to seek care directly from the eye care professional. They are seen and provided definitive care. The PCP only needs to deal with a single care transition.

10. Health Information Technology

The SNE-PTN optometry practices participating in the TCPI report that over 92% of the 1,790 enrolled practices had electronic health records from a variety of EHR vendors. These practices were typically smaller practices (averaging 1.8 eye care professionals/per practice) without

dedicated employed IT resources and generally relied on the vendor and contracted IT resources for technical assistance. Most of these practices were able to produce Promoting Interoperability reports (from their EHR) for submission to the CMS MIPS program (both eligible and voluntary reporting in MIPS 2017 and MIPS 2018 performance years).
The biggest overall barrier to full utilization of EHR functionality was the lack of an available Health Information Exchange (HIE) and/or Health Information Service Provider (HISP) in their medical neighborhood. So, while the practice had the capability, the resources needed to connect and communicate with other provider organizations/entities did not exist. It is likely that as EHR technology interoperability progresses, the availability of HIE/HISPs will be improved.

The measures of quality in EyEDA will initially be derived from a patient experience/satisfaction survey and review of claims for the same diagnosis for further treatment or adverse event.

As the APM progresses, quality measures may be created. Their approval would potentially allow for EHR capability to record, track, analyze, and improve reporting on ED avoidance as well as any other future quality measures.

A. Patient Privacy
Information technology will be required as part of this model. This includes all regulatory requirements including HIPAA compliance, EHR certification, and the secure transmission of patient information and messaging. Any provider participating in EyEDA will be held to HIPAA standards for protecting PII and PHI.

EHR certification and completing an annual security risk analysis during the performance year, would follow current CMS MIPS Promoting Interoperability requirements. Currently (MIPS 2019 performance year) requires EHR certification 2015 Edition CEHRT.

Successful outcomes of participation in this APM will include the improvement of the patient experience and reducing costs. Both of these impacts will be greatly enhanced by the full use of HIT to facilitate communication (referrals from PCPs, EDs; summaries of care to PCPs). It is likely that as eye care professionals utilize HIT for this specific purpose, the provider organizations in their medical neighborhood will also increase the use of HIT to facilitate care for non-emergency eye conditions.

Patient privacy will be protected by the providers and caregivers following established practice guidelines governing HIPAA compliance, as well as applicable state and federal statues/regulations pertaining to personal health information (PHI).

B. Interoperability of Electronic Health Records
EyEDA will not require greater interoperability, however it will promote the usefulness, efficiency, and interconnectivity of existing systems. With the growing emphasis on interoperability, as well as the emergence of third-party market entrants have proven that they have the capability to improve the timely sharing of information across heterogeneous systems.

C. Information Technology Innovations

While there are no information technology innovations imbedded in EyEDA per se, the encouragement of interoperability will greatly influence the full use of HIT to facilitate communication (referrals from PCPs, EDs; summaries of care to PCPs).

As eye care professionals utilize HIT for this specific purpose it is likely that the provider organizations in their medical neighborhoods will increase the use of HIT to facilitate care for non-emergency eye conditions.

The use of information technology is not restricted by the structure of the APM model, thus EyEDA will be able to incorporate HIT and Telehealth advancements. For example, a remote eye care professional consulting with a PCP office using secure/encrypted video communication to examine a patient's eye condition could eliminate excess travel and lost time by collaboratively treating the patient.

D. Health IT Flexibility Requirements

The APM requires CEHRT that is up to date and capable of tracking quality measures as well as being able to send/receive messages between providers also known as closing the referral loop.

EHR certification would follow current CMS MIPS Promoting Interoperability requirements. Currently (MIPS 2019 performance year) EHR certification 2015 Edition CEHRT.

Practices' existing interoperability and exchange of information would utilize the capabilities and work flows of their current EHR systems. Changes to workflows would improve as the EHR vendor and HIE/HISP implement their work together. EyEDA does not presume that a single methodology, software solution, or vendor would have to be utilized.

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APPENDIX A: Letters of Support

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200 Independence Ave. S.W.
Washington, D.C. 20201

Re: Letter of Support for University of Massachusetts Eyecare Emergency Department Avoidance (EyEDA) Model (LOI submitted as "University of Massachusetts – Physician Focused Payment Model (PFPM) to Reduce Emergency Department Utilization for Ambulatory Sensitive Eye Conditions").

Dear Committee Members:

I am writing on behalf of the American Academy of Optometry to express our support for the University of Massachusetts Medical School Eyecare Emergency Department Avoidance (EyEDA) Model targeted to Medicare beneficiaries with non-emergent eye conditions. The American Academy of Optometry is a national organization promoting excellence in optometric practice by fostering research and disseminating knowledge in vision science through its journal, *Optometry and Vision Science*, and the continuing education presented at its annual meeting.

The Eye Care APM Model, submitted by the University of Massachusetts Medical School, is designed to reduce the unnecessary use of Emergency Departments (EDs) by beneficiaries with eye care conditions that do not require urgent intervention but are of sufficient personal concern to seek professional consultation. A glaring example is that up to 44% of the patients who access EDs for eye-related conditions have a diagnosis of conjunctivitis. Each patient visit to an ED generates a significant cost to payers. This APM seeks to create a shared-risk/shared-benefit incentive for licensed eye care professionals – optometrists and ophthalmologists – to provide off-hour consultations to patients with eye care concerns. When appropriate, patients can be seen in-office the next day. Practitioners who sign up to participate in the APM would agree to a discount (the risk) from the negotiated payment for that service. The savings to the payer from avoiding the unnecessary ED costs would be shared with these practitioners through an agreed-upon formula, which would compensate them higher than the discount for the in-office visit (the benefit).

In addition, patients would receive assurance from their telephone or telemedicine consultation with a licensed eye care professional that their condition is being managed appropriately. Using the practitioner's networks, any condition that would require specialized ophthalmic intervention, e.g., a retinal detachment, would be referred appropriately and efficiently. True emergencies, such as a stroke-related visual field loss, would be referred immediately to the ED.

This advanced APM benefits payers, participating eye care professionals, and patients. It has the potential, if scaled nationally, to significantly lower the cost of providing quality eye care in the appropriate health care setting. Please include our support and comments in your deliberations.

Sincerely,

Barbara Caffery

Barbara Caffery, OD, PhD, FAAO
President
American Academy of Optometry

Matthew Forgues, O.D.
President

Massachusetts Society of Optometrists

Jay Gardiner
Executive Director

June 12,2019

Physician-Focused Payment Model Technical Advisory Committee
Assistant Secretary of Planning and Evaluation, room 415F
US Department of Health and Human Services
200 Independence Avenue, SW
Washington, D.C. 20201

Re: **Application for University of Massachusetts Eyecare Emergency Department Avoidance (EyEDA) Model (LOI submitted as "University of Massachusetts – Physician Focused Payment Model (PFPM) to Reduce Emergency Department Utilization for Ambulatory Sensitive Eye Conditions").**

Dear Members of the PTAC Committee:

The Massachusetts Society of Optometrists (MSO) mission is to advance the quality, availability and accessibility of eye, vision and related health care. The MSO represents the profession of optometry; assists its members in practicing successfully to the highest standards of patient care; promotes and supports full scope of practice; and enhances the professional lives of its members. Over the past three years, many of our members have participated in the Southern New England Practice Transformation Network (SNEPTN) and have developed a solid respect for the University of Massachusetts Medical School, which oversees SNEPTN's projects.

We appreciate the opportunity to provide input and support for UMass Medical School's application for a new APM for Eye Care. As front line practitioners, our members see the frequent misuse of Emergency Rooms (ERs) for eye conditions that can often be managed by an optometrist. It is not uncommon for patients who have been seen in the ER to then schedule a visit with their family eye doctor for confirmation of the diagnosis and treatment they received. Many optometrists already offer some form of after-hours telephone coverage for their patients or for other individuals who have concerns that they feel can't wait until the office re-opens. Most of these calls are about eye conditions that are not true emergencies and are usually seen the next day on a priority basis.

This proposed APM addresses the unnecessary use of ERs for non-emergency eye problems. Although this proposal is currently limited to Medicare patients, all health care insurers are likely to recognize its benefits for cost savings. It will also provide better patient care by eye doctors who are skilled at offering consultations by phone and can make more precise diagnoses in their offices, which are equipped with sophisticated ophthalmic instruments.

The MSO strongly supports the University of Massachusetts Eyecare Emergency Department Avoidance (EyEDA) Model. We feel that not only will it address the overuse of Emergency Rooms but it will also improve the access to high quality eye care. We look forward to participating when it is approved.

Best wishes,

Matthew Forgues, OD
President, MSO

Jay Gardiner
Executive Director

New England
College of Optometry

HOWARD B. PURCELL, OD, FAAO
President

June 11, 2019

Physician-Focused Payment Model Technical Advisory Committee
Assistant Secretary of Planning and Evaluation
Office of Health Policy
Department of Health and Human Services
200 Independence Avenue SW
Washington, DC 20201

Re: University of Massachusetts Eyecare Emergency Department Avoidance (EyEDA) Model.

Dear Dr. Bailet and Members of the Committee:

As the oldest continuously operating optometric institution in the US, the New England College of Optometry is proud of its 125-year history of educating primary eye care doctors. As part of our strong commitment to public health, we have worked with other health care organizations in helping to develop effective, high quality models of eye/vision care that integrate into the overall medical care models of the time. Almost fifty years ago, the College partnered with the country's first community health center to provide its members with direct access to optometric services. In the late 1970's, our students were among the very first optometrists to train in the VA, giving them early experience in an integrated health system with a cloud-based electronic health record. And for the past three years, we have worked closely with the Southern New England Practice Transformation Network in re-structuring our clinical operating systems to achieve compatibility with MACRA and MIPS requirements. This close relationship gave us an awareness of the UMASS Medical School's initiative to create an Alternative Payment Method designed to reduce unnecessary visits to emergency departments (EDs) for non-emergent eye problems.

The College wholeheartedly supports this APM request. It meets several public health objectives: it incentivizes optometrists to participate in a shared-risk; shared-benefit initiative with health insurers to provide phone access to individuals with eye care concerns that, left unaddressed, might lead to an inappropriate ED encounter. By encouraging telephone

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consultations during hours outside the normal workday, it is anticipated that many of these visits may be diverted to less-expensive office-based locations. The exact mechanism of sharing the savings has yet to be developed, however, the plan itself is logical and economically sound. The quality of care would be at least maintained and perhaps improved in that the patient's first encounter would be a conversation with an experienced eye care professional with access to the instrumentation necessary to make an accurate diagnosis. Any concerns expressed by the patient could also be alleviated during that initial conversation. Those patients with truly emergent conditions would be referred to the ED.

Optometrists tend to have practices that are distributed similarly to population patterns. If this APM were scaled to a national level, there is the potential for massive savings in ED costs. We also feel that being at forefront of determining the outcome of these encounters adds to the professional satisfaction of participating doctors. From a training standpoint, it offers another dimension to our students' clinical experience, which is where real learning takes place. Feel free to contact my office for any further discussions on the approval and implementation of this APM.

Yours sincerely,

Howard B. Purcell, OD, FAAO
President and CEO

APPENDIX B: List of Diagnosis Codes for ED-Avoidable Eye Conditions

Table B1 provides a list of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) and of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis codes for the set of Emergency Department avoidable eye conditions included in the EyEDA model.

Table B1. International Classification of Diseases (ICD) Diagnosis Code List by ED-Avoidable Eye Condition

ED-Avoidable Eye Condition	**ICD-10-CM**	**ICD-9-CM**
Acute Posterior Vitreous Detachment	H439, H4389, H43829, H43823, H43822, H43821, H43819, H43813, H43812, H43811, H43399, H43393, H43392, H43391, H43313, H43312, H43311, H4322, H4321, H4320, H4313, H4312, H4311, H4310, G43109	37921, 37922, 37923, 37924, 37925, 37926, 37927, 37929, 34600
Conjunctivitis	H10011, H10012, H10013, H10019, H10021, H10022, H10023, H10029, H1010, H1011, H1012, H1013, H10211, H10212, H10213, H10219, H10221, H10222, H10223, H10231, H10232, H10233, H10239, H1030, H1031, H1032, H1033, H10401, H10402, 10403, H10409, H10411, H10412, H10413, H10419, H10421, H10422, H10423, H10429, H10431, H10432, H10433, H10439, H1044, H1045, H10501, H10502, H10503, H10509, H10521, H10522, H10523, H10529, H10531, H10532, H10533, H10811, H10812, H10813, H10819, H1089, H109, S0500XA, S0500XS, S0501XA, S0501XS, S0502XA, S0502XS	37200, 37201, 37202, 37203, 37204, 37205, 37206, 37210, 37211, 37212, 37213, 37214, 37220, 37221, 37222, 37230, 37234, 37239, 9062, 9181, 9182, V5889
Corneal Injury	T2612XD, T2612XA, T2611XD, T2611XA, T2610XA, B0233, B0052, H189, H18899, H18893, H18892, H18891, H18829, H18823, H18822, H18821, H18792, H18791, H18739, H18732, H18731, H18721, H18712, H18711, H1870, H18629, H18623, H18622, H18621, H18619, H18612, H18609, H18603, H18602, H18601, H1849, H18469, H18462, H18453, H18423, H18422, H18421, H18419, H18413, H18411, H1840, H18332, H18331, H18323, H18322, H18321, H1830, H18232, H18231, H18222, H18221, H18219, H18213, H18212, H18211, H1820, H1813, H1812, H1811, H1810, H18042, H18041, H18012, H18003, H18002, H16001, H16002, H16003,	36014, 37000, 37001, 37002, 37003, 37004, 37005, 37006, 37007, 37020, 37021, 37022, 37023, 37024, 37031, 37032, 37033, 37034, 37035, 37040, 37044, 37049, 37050, 37052, 37054, 37055, 37059, 37060, 37061, 37062, 37063, 37064, 3708,3709, 37213, 37110, 37111, 37112, 37113, 37114, 37115,

ED-Avoidable Eye Condition	ICD-10-CM	ICD-9-CM
	H16009, H16011, H16012, H16013, H16019, H16021, H16022, H16029, H16031, H16032, H16033, H16039, H16041, H16042, H16043, H16071, H16072, H16073, H16079, H16101, H16102, H16103, H16109, H16119, H16121, H16122, H16123, H16129, H16131, H16132, H16133, H16139, H16141, H16142, H16143, H16149, H16201, H16202, H16203, H16209, H16211, H16212, H16213, H16219, H16221, H16222, H16223, H16229, H16232, H16251, H16252, H16253, H16259, H16261, H16262, H16263, H16291, H16292, H16293, H16299, H16301, H16302, H16303, H16309, H16311, H16312, H16319, H16321, H16323, H16393, H168, H169, H18001	37116, 37120, 37121, 37122, 37123, 37124, 37130, 37131, 37132, 37133, 37140, 37141, 37142, 37143, 37144, 37145, 37146, 37148, 37149, 37150, 37151, 37152, 37153, 37154, 37155, 37157, 37160, 37161, 37162, 37170, 37171, 37172, 37173, 37181, 37182, 37189, 3719, 5442, 5443, 5321, 9404, V5889, 9068
Corneal Injury with foreign body	T1502XA, T1501XA, T1500XA	9085, 9300, E914, V5889
Eye Pain	H40219, H40213, H40212, H40211, S00212A, S00211A, H539, H538, H5372, H5371, H5363, H5360, H5359, H5352, H5350, H53489, H53483, H53482, H53481, H5347, H53469, H53462, H53461, H53459, H53453, H53452, H53451, H53439, H53433, H53432, H53431, H53423, H53422, H53421, H53419, H53413, H53412, H53411, H5340, H5334, H5333, H5330, H532, H5319, H5316, H5315, H53149, H53143, H53142, H53141, H53139, H53133, H53132, H53131, H53129, H53123, H53122, H53121, H5310, H53032, H53031, H53023, H53009, H53003, H53002, H53001, H5713, H5712, H5711, H5710	37991, 36800, 36801, 36802, 36803, 36810, 36811, 36812, 36813, 36814, 36815, 36816, 3682, 36830, 36831, 36832, 36833, 36834, 36840, 36841, 36842, 36843, 36844, 36845, 36846, 36847, 36851, 36852, 36853, 36854, 36855, 36859, 36860, 36861, 36862, 36863, 36869, 3688, 3689, 9180, 36400, 36401, 36402, 36403, 36404, 36405, 36410, 36421, 36423, 36424, 3643, 36522, 36522, 36522, 36522
Hordeolum	H0019, H0016, H0015, H0014, H0013, H0012, H0011, H00029, H00026, H00025, H00024, H00023, H00022, H00021, H00019, H00016, H00015, H00014, H00013, H00012, H00011	37311, 37312, 37313, 3732

ED-Avoidable Eye Condition	ICD-10-CM	ICD-9-CM
Other	H5442, H5441, H542, H5412, H5411, H4011X4, H4011X3, H4011X2, H4011X1, H4011X0, H3532, H3531, H34839, H34832, H34831, H34819, H34813, H34812, H34811, E11359, E11351, E11349, E11341, E11339, E11331, E11329, E11321, E10359, E10351, E10349, E10341, E10331, E10329, Z9641, Z961, T1592XA, T1591XA, T1590XA, T1582XA, T1581XA, T1580XA, T1512XA, T1511XA, T1510XA, S0512XS, S0512XA, S0511XS, S0511XA, S0510XA, S0012XS, S0012XA, S0011XA, S0010XS, S0010XA, R578, Q130, Q120, Q100, M3501, H579, H578, H5709, H57053, H57052, H57051, H5704, H5703, H5702, H5701, H5700, H5501, H5440, H5410, H47339, H47333, H47332, H47329, H47323, H47322, H47321, H47293, H47292, H47291, H47233, H47212, H47211, H4711, H47019, H47013, H47012, H47011, H4613, H4612, H4611, H4610, H4603, H4602, H4601, H4423, H4422, H4421, H4420, H4063X0, H4062X3, H4053X3, H4053X0, H4052X4, H4052X3, H4052X2, H4052X1, H4052X0, H4051X4, H4051X3, H4051X2, H4051X1, H4051X0, H4050X3, H4050X0, H4043X4, H4043X0, H4042X3, H4042X2, H4042X0, H4041X4, H4041X0, H4040X0, H402290, H402233, H402232, H402230, H402224, H402223, H402222, H402221, H402220, H402213, H402212, H402211, H402210, H401490, H401433, H401430, H401420, H401413, H401410, H401330, H401320, H401313, H401310, H401290, H401233, H401230, H401190, H401134, H401133, H401132, H401131, H401130, H401123, H401120, H401114, H401113, H401110, H40059, H40053, H40052, H40051, H40043, H40042, H40041, H40039, H40033, H40032, H40031, H40023, H40022, H40021, H40013, H40012, H40009, H40003, H40002, H40001, H3589, H3582, H3581, H35729, H35722, H35721, H35713, H35712, H35711, H3552, H35443, H35439, H35433, H35419, H35413, H35412, H35411, H35389, H35383, H35381, H35379, H35373, H35372, H35371, H35363, H35361, H35353, H35352, H35351, H35349, H35343, H35342, H35341, H353290, H353230, H353220, H353210,	5329, 5449, 773, 774, 9840, 11500, 1302, 17311, 2161, 2240, 2243, 2246, 2370, 25050, 25051, 36100, 36181, 36202, 36204, 36205, 36206, 36207, 3410, 34602, 36101, 36131, 36213, 36232, 36236, 36241, 36242, 36251, 36252, 36253, 36254, 36255, 36256, 36262, 36263, 36277, 36289, 36334, 36335, 36441, 36477, 36500, 36505, 36562, 36564, 36571, 36574, 36602, 36645, 36902, 36912, 36913, 36914, 36916, 36917, 36922, 36924, 36961, 36962, 36965, 36967, 36968, 37102, 37251, 37273, 37275, 37302, 37332, 37405, 37481, 37482, 37489, 37521, 37522, 37532, 37553, 37631, 37701, 37712, 37713, 37714, 37715, 37721, 37732, 37741, 37903, 37940, 37941, 37946, V411, 36021, 36105, 36107, 36110, 3612, 36132, 36133, 3619, 36231, 36235, 36257, 36261, 36264, 36266, 36274, 36282, 36283, 36284, 36285, 36332, 36333, 36340, 36341, 36453, 36471, 36472, 36501, 36502, 36503, 36504, 36511, 36512, 36513,

ED-Avoidable Eye Condition	ICD-10-CM	ICD-9-CM
	H353132, H353130, H353120, H353110, H35012, H35011, H348322, H348312, H348310, H348192, H348191, H348132, H348130, H348122, H348121, H348120, H348112, H348110, H34239, H34233, H34232, H34231, H3413, H3412, H3411, H3410, H33329, H33323, H33322, H33321, H33319, H33313, H33312, H33311, H3323, H3322, H3321, H3320, H33103, H33102, H33101, H33059, H33053, H33052, H33051, H33019, H33013, H33012, H33011, H31013, H31012, H31011, H2633, H26132, H26131, H26119, H26111, H26053, H26052, H25813, H25812, H25811, H21551, H21233, H21232, H2103, H2102, H2101, H2100, H17822, H17821, H1713, H1712, H1711, H1710, H15112, H15019, H15013, H15012, H15011, H11823, H11822, H11821, H11449, H11443, H11442, H11441, H11439, H11433, H11432, H11431, H11429, H11423, H11422, H11421, H1133, H1132, H1131, H1130, H11159, H11153, H11152, H11151, H11133, H11132, H11131, H11123, H11122, H11121, H11052, H11051, H11043, H11041, H05243, H05242, A5431, B0053, B0231, B301, B303, B394, B5801, C44119, D2311, D2312, D3100, D3101, D3102, D3131, D3132, D3141, D3142, E103293, E103491, E103492, E103511, E103513, E103533, E103592, E103593, E103599, E113213, E113219, E113291, E113292, E113293, E113299, E113311, E113391, E113393, E113399, E113411, E113413, E113491, E113492, E113493, E113499, E113511, E113512, E113513, E113519, E113531, E113551, E113591, E113592, E113593, E113599, G43101, H01021, H01022, H01023, H01024, H01025, H01026, H01029, H01111, H01112, H01113, H01114, H01115, H01116, H01119, H02013, H02014, H02015, H02032, H02035, H02051, H02052, H02053, H02054, H02055, H02056, H02059, H02135, H0260, H0266, H02841, H02842, H02843, H02844, H02845, H02846, H02849, H0289, H04211, H04212, H04213, H04219, H04221, H04223, H04321, H04322, H04323, H04329,	36523, 36531, 36532, 36552, 36559, 36560, 36561, 36570, 36572, 36573, 36601, 36619, 36621, 36622, 36905, 36911, 36915, 36918, 36925, 36960, 36963, 36964, 36966, 36969, 37060, 37103, 37241, 37242, 37254, 37255, 37271, 37272, 37281, 37401, 37404, 37411, 37422, 37451, 37601, 37711, 37724, 37731, 37752, 37763, 37901, 37942, 37943, 37945, 37949, 37951, 3798, 37990, 7102, 74330, 74346, 74351, 74352, 74359, 74361, 78559, 9063, 9210, 9211, 9212, 9213, 9301, 9302, 9308, 9309, E914, V431, V4389, V4585

ED-Avoidable Eye Condition	**ICD-10-CM**	**ICD-9-CM**
	H04541, H04542, H04549, H05011, H05012, H05013, H05019, H05241	

APPENDIX C: Data Analysis Methodology

Data Sources

The Healthcare Cost and Utilization Project's (HCUP) Nationwide Emergency Department Sample (NEDS) dataset was used to approximate avoidable ED visits for selected eye conditions and estimate the payment associate with those conditions from 2012-2016 in the United States. The datasets included patient demographics, hospital characteristics, and clinical and non-clinical information related to healthcare utilization. Patient demographic variables used in the analysis include: age, gender, patient urban-rural designation based on county of residence, and median household income based on patient's zip code. Hospital characteristics used in the analysis include: hospital trauma designation, teaching status, hospital region based on US Census categories, and hospital urban-rural designation. Diagnosis codes (ICD-9-CM from 2012-2015 Q3, and ICD-10-CM from 2015 Q4 to 2016) were used to define clinical variables meaningful for the analysis. These variables are: conjunctivitis, eye pain, hordeolum, corneal injury, corneal injury with foreign body, acute posterior vitreous detachment, and other eye conditions. Other variables included in the analysis are expected primary payer and hospital charges. Please refer to Appendix A for the complete list of diagnosis codes used by eye condition.

Estimated Payment Calculations

To estimate payments from Total Emergency Department (ED) charges, the charges were adjusted using cost-to-charge ratios (CCR) and payment-to-cost ratios (PCR) using the formula below.

$$Estimated\ ED\ Payments = ED\ Charges\ x\ CCR\ x\ PCR$$

where

$$ED\ Cost\ to\ Charge\ Ratio\ (CCR)\ = \frac{Routine\ ED\ costs}{Routine\ ED\ charges}$$

$$Payment\ to\ Cost\ Ratio\ (PCR)\ = \frac{Payments\ to\ hospitals}{Hospital\ costs}$$

Cost-to-charge ratios were calculated using Medicare Hospital 2552-10 Cost Reports for fiscal years 2012 to 2016. All hospitals that serve the Medicare population file these Cost Reports each year. The Cost Report data include cost, charges, and utilization by cost center.

Total ED routine costs were extracted from Worksheet C, line 91, column 3, and total ED routine charges from Worksheet C, line 91, column 8. Both line items fell under the "Emergency" category under the outpatient service cost center. Ratios of ED routine cost and ED routine charges were calculated by US Census region to obtain an annual weighted CCRs by region.

Payer-specific payment-to-cost ratios were extracted from the Analysis of American Hospital Association Annual Survey Trendwatch Chartbook, which reported PCR values for private, Medicare, and Medicaid payers from 1995 to 2016. Other payers (federal and state programs, workers compensation, charity care, and self-pay) were aggregated into a single "other payer" category; the PCR for these payers was assumed to be 1.0.

Estimated Payments to Eye Care Providers

To demonstrate how the EyEDA model's shared savings distributions would be calculated, the authors estimated the average Medicare eye care professional payment per office visit for an ED-avoidable eye condition. Table C1 shows the calculation of this estimated payment based on 2019 fee-for-service Medicare payment rates weighted by the mix of services billed during a one-month period by a small sample of optometry practices for the set of diagnosis codes listed in Appendix B. Table C2 shows the calculation of a private payer payment rate using a mark-up based on the ratio of private payer to Medicare payment-to-cost ratios.

Table C1. Estimated 2019 Weighted Average Medicare Eye Care Professional Payment per Office Visit for an ED-Avoidable Eye Condition

CPT Code	Description	2019 Medicare Fees*	Number of codes billed	Weighted Medicare payments	Total ED-avoidable visits billed**
65205	Remove foreign body from eye, superficial	$47.21	1	$47.21	1
65210	Remove foreign body from eye, embedded	$57.66	1	$57.66	1
65222	Remove foreign body from eye, corneal	$69.56	3	$208.68	2
65435	Curette/treat cornea	$83.61	1	$83.61	1
67820	Revise eyelashes	$33.52	3	$100.56	2
68761	Close tear duct opening	$152.09	1	$152.09	0
92002	Eye exam new patient	$85.41	10	$854.10	10
92004	Eye exam new patient	$153.53	6	$921.18	5
92012	Eye exam establish patient	$89.74	28	$2,512.72	28
92014	Eye exam&tx estab pt 1/>vst	$128.66	10	$1,286.60	9
92071	Contact lens fitting for tx	$38.56	2	$77.12	2
92250	Eye exam with photos	$51.54	7	$360.78	7
92285	Eye photography	$21.98	1	$21.98	1
99201	Office/outpatient visit new	$46.49	1	$46.49	1
99202	Office/outpatient visit new, Lev 2	$77.48	6	$464.88	6
99203	Office/outpatient visit new, Lev 3	$109.92	63	$6,924.96	63
99204	Office/outpatient visit new, Lev 4	$166.86	2	$333.72	2
99212	Office/outpatient visit est, Lev 2	$45.77	6	$274.62	4
99213	Office/outpatient visit est, Lev 3	$75.32	196	$14,762.72	196
99214	Office/outpatient visit est, Lev 4	$110.28	23	$2,536.44	23
	TOTAL		371	$32,028.12	364
	Weighted average payment per visit (total weighted Medicare payments / total visits billed)				**$87.99**

**Source: https://www.cms.gov/apps/physician-fee-schedule/search/search-criteria.aspx*

*** Total number of visits is less than the total number of codes, as providers billed more than one code for some visits*

Table C2. Estimated 2019 Private Payer Eye Care Professional Payment per Office

1	Estimated weighted average 2019 FFS Medicare payment per visit based on the mix of services from a small sample of TCPi-participating optometry practices	$87.99
2	Private Payment to Cost Ratio	1.448
3	Medicare Payment to Cost Ratio	0.868
4	Private Payer mark-up = Private Payer PCR ÷ Medicare PCR	1.6682
5	Estimated weighted average 2019 Private Payer payment per visit (1)x(4)	**$146.79**

Statistical Analysis

Descriptive analysis includes weighted frequencies and the sum of estimated payments from 2012 to 2016. Analyses were performed following HCUP recommendations to analyze survey data (https://www.hcup-us.ahrq.gov/tech_assist/tutorials.jsp) and after the completion of an HCUP data use agreement. Statistical analysis was performed using SAS 9.4 (Cary, NC).

APPENDIX D: Data Analysis Results

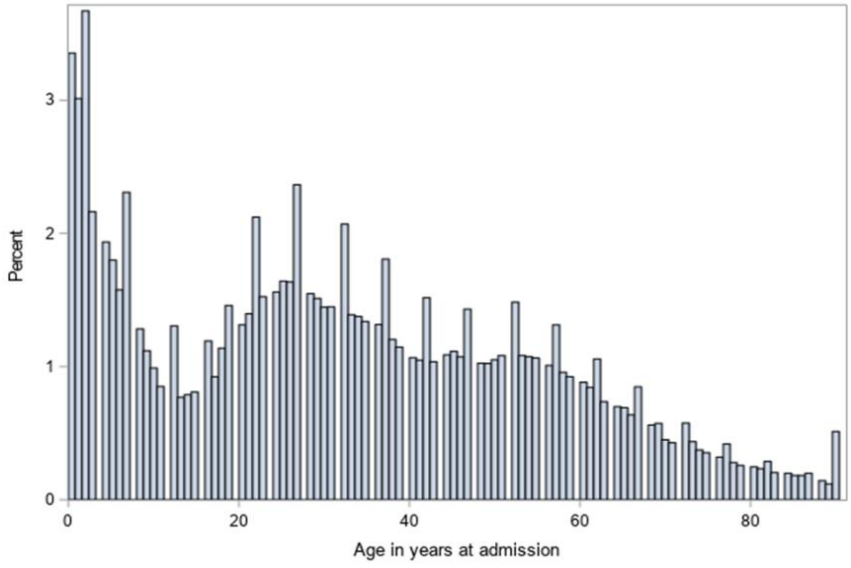
In order to develop a profile of patients who receive care at the emergency department for urgent eye conditions, the team analyzed hospital utilization data from the Nationwide Emergency Department Sample (NEDS) from the Healthcare Cost and Utilization Project (HCUP) databases. The analysis included descriptive statistics on patient demographics and hospital characteristics from 2016, and trends from 2012 through 2016.

Patient Demographics and Visit Characteristics

The patient demographic factors examined included age, gender, urban vs. rural county of patient residence and median household income of the county of residence. Patients with avoidable emergency department visits for eye conditions showed a similar distribution of patient characteristics across the five-year period (2012-2016).

The age distribution for these patients is characterized by a spike of visits in newborns, toddlers and young adults (Figure D1).

Figure D1. Age Distribution of Patients with Avoidable Emergency Department Visits in 2016, HCUP NEDS



The age group categories in Table D1 show that the proportion of adults 18-64 years old contribute about 60% of the population. Children (0-17 years old) make about 30% of the population and elderly (65 years old and older) form close to 10% of the population. Slightly over 60% of the population reside in areas with a median household income below $54,000 a year in 2016, or in the bottom two income quartile across the five years.

Table D2 shows hospital characteristics examined for avoidable emergency department visits for eye conditions included teaching status, trauma level, region of the U.S. and urban-rural designation. The distribution of hospital classification has changed since 2012. In 2016, non-trauma hospitals have provided over 50% of avoidable emergency department visits for eye conditions (table D2), a growth from 35% in 2012 (data not shown). A similar shift is seen with teaching hospitals. In 2016, teaching hospitals have provided 60% of avoidable emergency department visits for eye conditions, an increase from 44% in 2012.

Table D1. Demographics of Patients with Avoidable Emergency Department Visits for Eye Conditions in 2016, HCUP NEDS (in thousands)

Characteristics	**N**	**%**
Age (mean, std err)	32	0.7
Age Category		
Less than 1 yr old	63	3.3
1-6 yrs old	267	14.2
7-17 yrs old	233	12.3
18-24 yrs old	200	10.6
25-44 yrs old	549	29.0
45-64 yrs old	394	20.9
65-74 yrs old	105	5.6
75+ yrs old	78	4.1
Gender		
Male	959	50.7
Female	931	49.3
Urban-Rural Designation for Patient's County of Residence		
Large Central Metropolitan	631	33.5
Large Fringe Metropolitan	382	20.3
Medium Metropolitan	385	20.5
Small Metropolitan	182	9.7
Micropolitan	181	9.6
Neither Metropolitan nor Micropolitan	119	6.4
Median Household Income for Patient Zip Code		
$1 - $42,999	665	35.7
$43,000 - $53,999	502	27.0
$54,000 - $70,999	387	20.8
$71,000+	307	16.5

Hospitals' geographic locations are defined using Census region classification. The Southern area of the United States accounts for twice the proportion of avoidable emergency department visits for eye conditions of any other U.S. region. Note that this proportion reflects

the population density. The southern region has the largest population (38%), followed by the West (24%), Midwest (21%), and Northeast (17%).

Avoidable emergency department visits by eye condition have been dominated by conjunctivitis, accounting for over 50% of the visits (table D3). This is followed by other eye conditions and eye pain.

Figure D2 displays the distribution of avoidable emergency department visits by eye condition and age group for 2016. Conjunctivitis is the leading cause of emergency department visit in every age group, except individuals 75 years and older. The Other eye conditions category is most common among individuals 25-64 years old.

The same trend is maintained when we see eye condition distribution of patients with avoidable emergency department visits as rate per 100,000 by USA census region (figure D3). However, the incidence rate of avoidable ED visits for eye conditions varied somewhat by region. For example, the Midwest had 155 more conjunctivitis ED visits per 100,000 population than the West in 2016.

Table D2. Hospital Characteristics with Avoidable Emergency Department Visits for Eye Conditions in 2016, HCUP NEDS (in thousands)

Characteristics	N	%
Trauma Designation		
Not A Trauma Center	1,104	54.9
Trauma Level I	367	18.2
Trauma Level II	271	13.5
Trauma Level III	230	11.4
Non-trauma or Trauma Level III	25	1.2
Trauma Center Level I or II	15	0.8
Teaching Status		
Metropolitan, Non-Teaching	550	27.3
Metropolitan Teaching	1,198	59.5
Non-Metropolitan Hospital	265	13.2
Region		
Northeast	381	18.9
Midwest	459	22.8
South	796	39.6
West	376	18.7
Urban-Rural Designation		
Large metropolitan areas	1,113	55.3
Small metropolitan areas	588	29.2
Micropolitan areas	142	7.1
Not metro/micropolitan	85	4.2
Metropolitan, collapsed	48	2.4
Non-metropolitan, collapsed	37	1.9

Table D3. Eye Condition Distribution of Patients with Emergency Department-Avoidable Visits, HCUP NEDS, 2012–2016 (in 000s)

Eye Conditions	2012		2013		2014		2015		2016	
	N	%	N	%	N	%	N	%	N	%
Conjunctivitis	1,022	55.8	997	54.7	926	55.2	1,022	55.5	967	51.2
Eye Pain	231	12.6	227	12.5	232	13.8	239	13.0	232	12.3
Hordeolum	128	7.0	133	7.3	116	6.9	117	6.3	111	5.9
Corneal Injury with Foreign Body	82	4.5	79	4.3	71	4.2	71	3.9	65	3.4
Corneal Injury	72	3.9	73	4.0	59	3.5	62	3.4	67	3.5
Acute Posterior Vitreous Detachment	48	2.6	59	3.2	48	2.9	66	3.6	80	4.2
Other Eye Conditions	249	13.6	255	14.0	227	13.5	266	14.4	367	19.4

Figure D2.Distribution of Avoidable Emergency Department Visits by Age Group and Eye Condition, HCUP NEDS, 2016

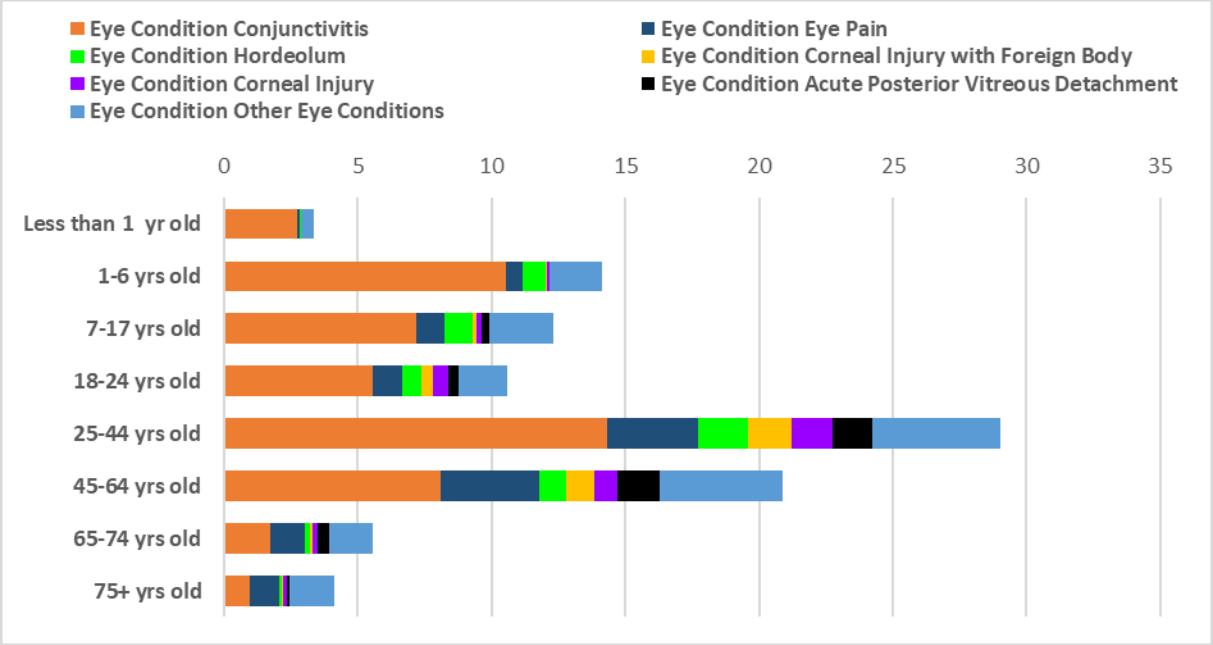
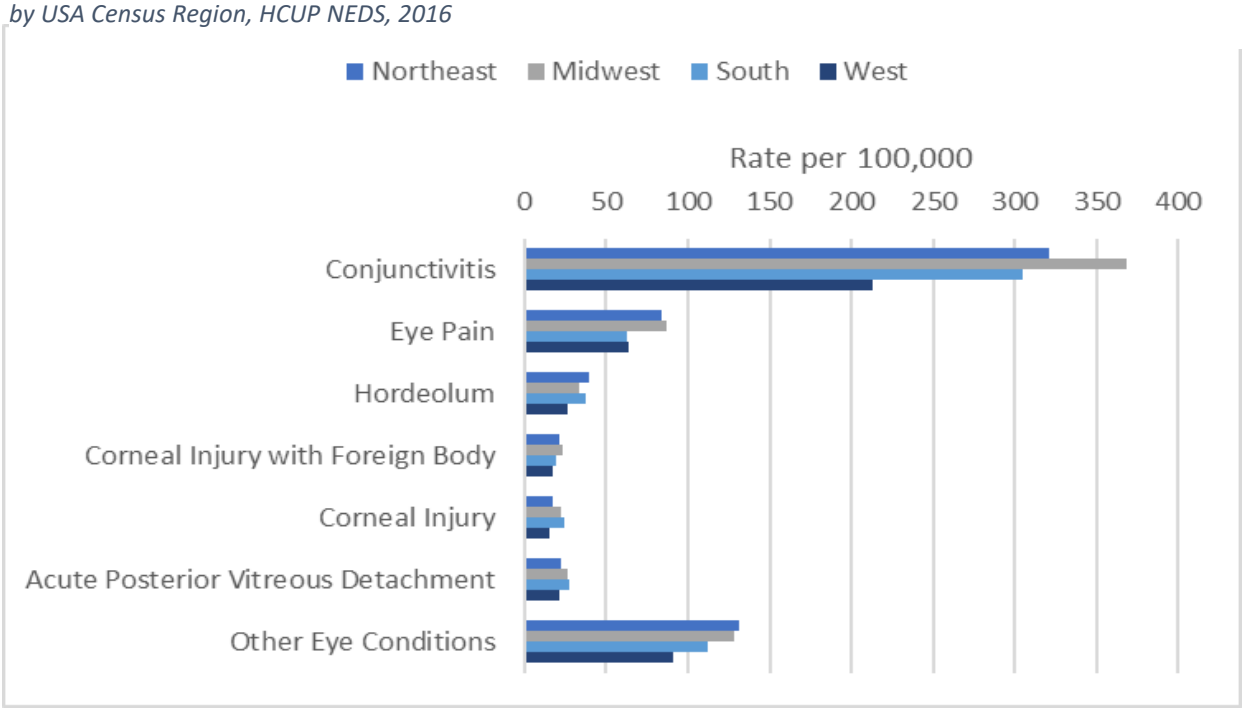
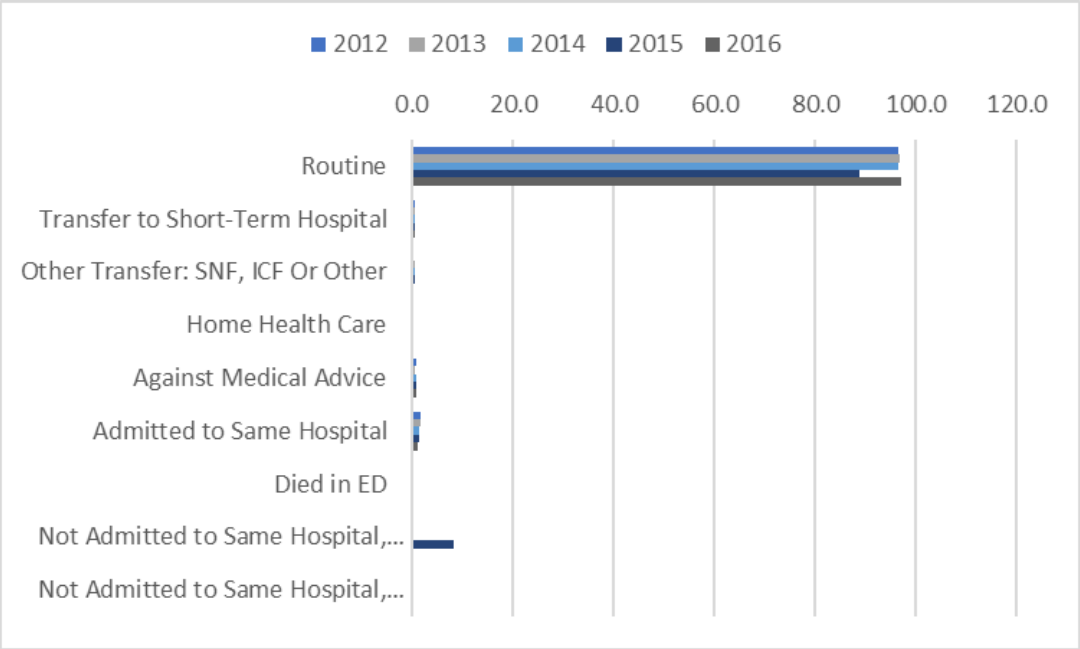


Figure D3. Eye Condition Distribution of Patients with Avoidable Emergency Department Visits as Rate per 100,000 by USA Census Region, HCUP NEDS, 2016



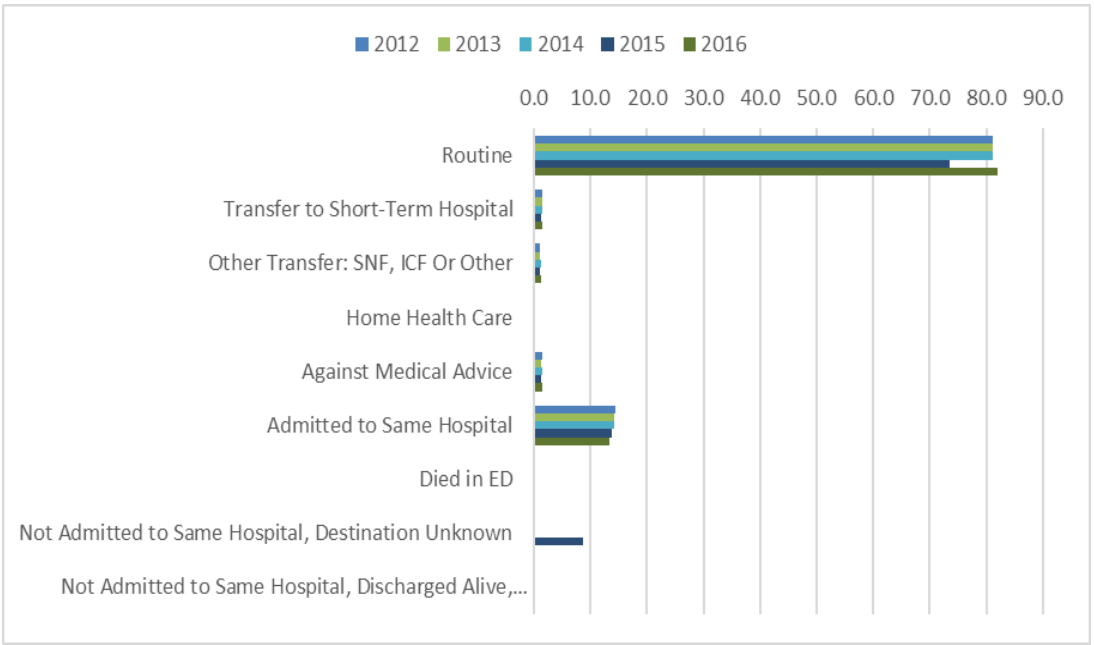
Over the 5 years, more than 90% of avoidable ED visits for eye conditions had a routine disposition (discharged to home) except for 2015, figure D4.

Figure D4. Emergency Department Disposition Distribution from ED-Avoidable Visits for Eye Conditions HCUP NEDS, 2012-2016



The same drop in percentage is seen for the total ED visits, not exclusive to eye conditions (figure D5) in 2015.

Figure D5. Emergency Department Disposition Distribution for All ED- Visits, HCUP NEDS, 2012-2016



Payment Estimates

A direct relation of avoidable ED visits by eye conditions and its estimated payment is seen. Most of the dollars are allocated in conjunctivitis, eye pain and other eye conditions as expected (figure D6). However, a steady increase of payments for acute posterior vitreous detachment and eye pain is seen from 2012 to 2016 with a total increase of 98% and 31% respectively since 2012. A spike in payments for other eye conditions is seen in 2016 (74% increased from 2014) and partially in 2015 (table D4).

Figure D6. Estimated Payment Distribution by Avoidable Emergency Department Visits for Eye Conditions, HCUP, NEDS, 2016

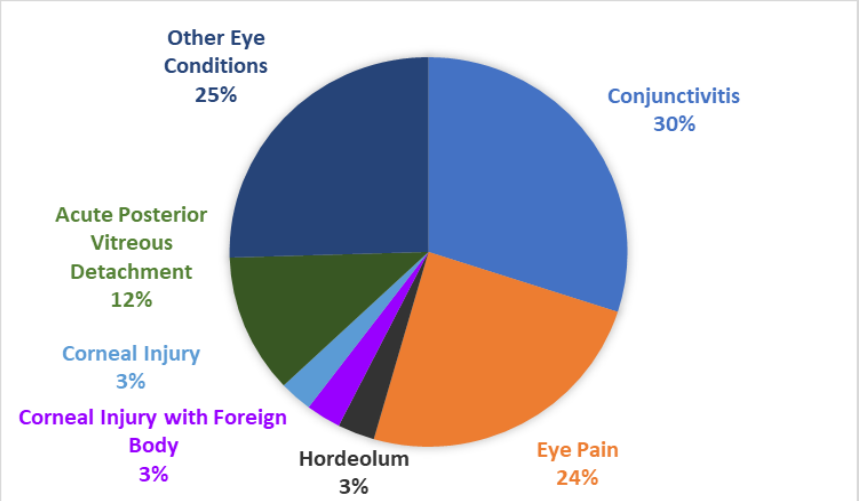


Table D4. Estimated Payment by Eye Condition Avoidable Emergency Department Visit, HCUP NEDS, 2012-2016 (in millions)

Eye Conditions	2012		2013		2014		2015		2016	
	$	%	$	%	$	%	$	%	$	%
Conjunctivitis	174	37.2	173	36.0	170	35.3	180	33.4	178	30.0
Eye Pain	111	23.8	116	24.2	129	26.8	142	26.4	146	24.6
Hordeolum	24	5.1	25	5.2	22	405	20	3.7	18	3.0
Corneal Injury with Foreign Body	20	4.2	18	3.8	17	3.6	18	3.2	16	2.8
Corneal Injury	16	3.3	16	3.4	13	2.7	14	2.7	15	2.6
Acute Posterior Vitreous Detachment	34	7.3	43	9.0	43	9	57	10.6	68	11.5
Other Eye Conditions	89	19.0	89	18.5	87	18.1	107	19.9	152	25.6
Total	468	100.0	480	100.0	481	100.0	538	100.0	593	100.0

When estimated payment is stratified by eye condition and age group it shows a constant increased of payments from 2012 to 2016. In each age group of 25 years old and older, having an additive effect of age group and payment relationship. Age group of 25-44 years old increased by 23% while 75+ years old increased by 79% since 2012 (figure D7). Medicaid and Private insurers are the leading payers for avoidable emergency department visits for eye conditions (figure D8).

Figure D7. Estimated Payments for Avoidable Emergency Department Visits for Eye Conditions by Age Group, HCUP, NEDS, 2012-2016

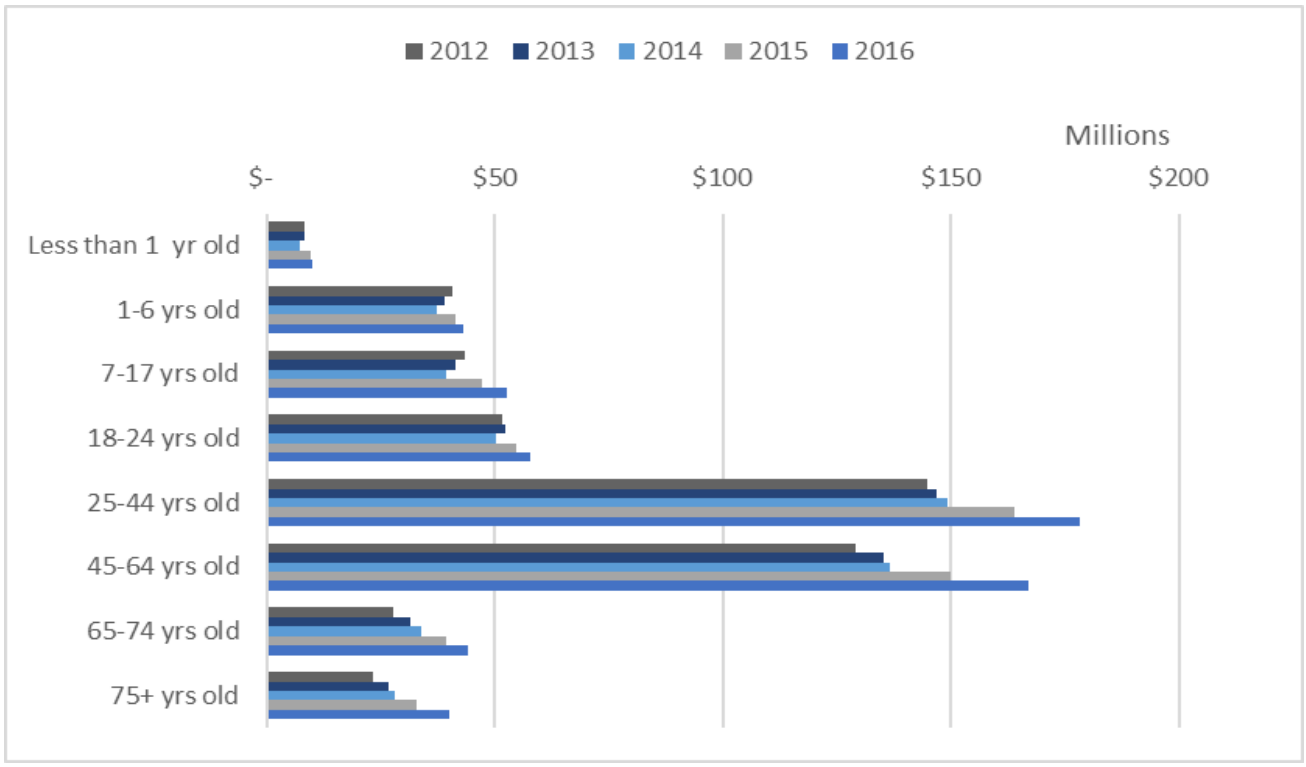
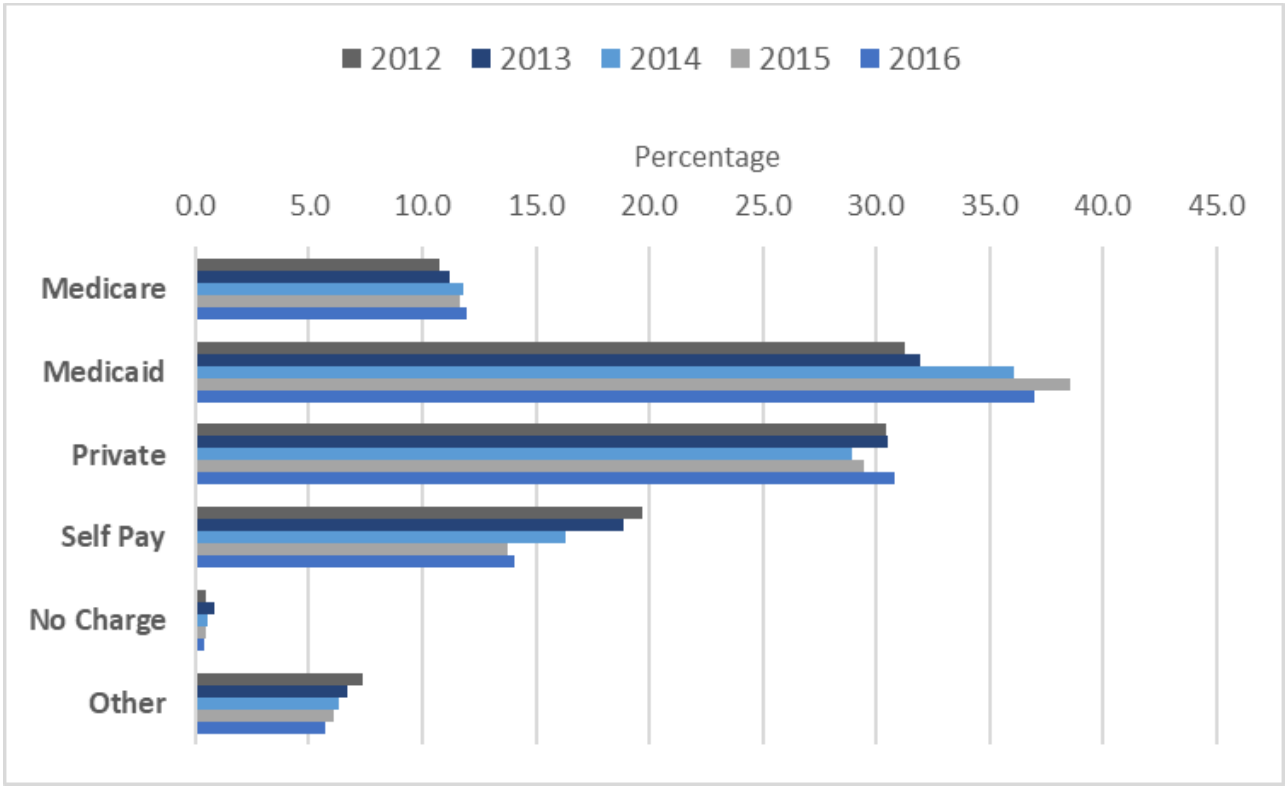


Figure D8. Distribution of Avoidable Emergency Department Visits for Eye Conditions by Primary Payer, HCUP NEDS, 2012-2016



If we group self-pay, no charge and other payers together, these will constitute the third source of payment. Medicare and Medicaid combined represent 39% of payments made in 2016. Similarly, to private payers (44%). However, Medicare and Medicaid combined payments increased 7% from 2012, an inverse relationship from other payer category (including self-pay), figure D9 and table D5.

Figure D9. Estimated Payment by Expected Primary Payer for Avoidable Emergency Departments Visits for Eye Conditions, HCUP NEDS, 2012-2016

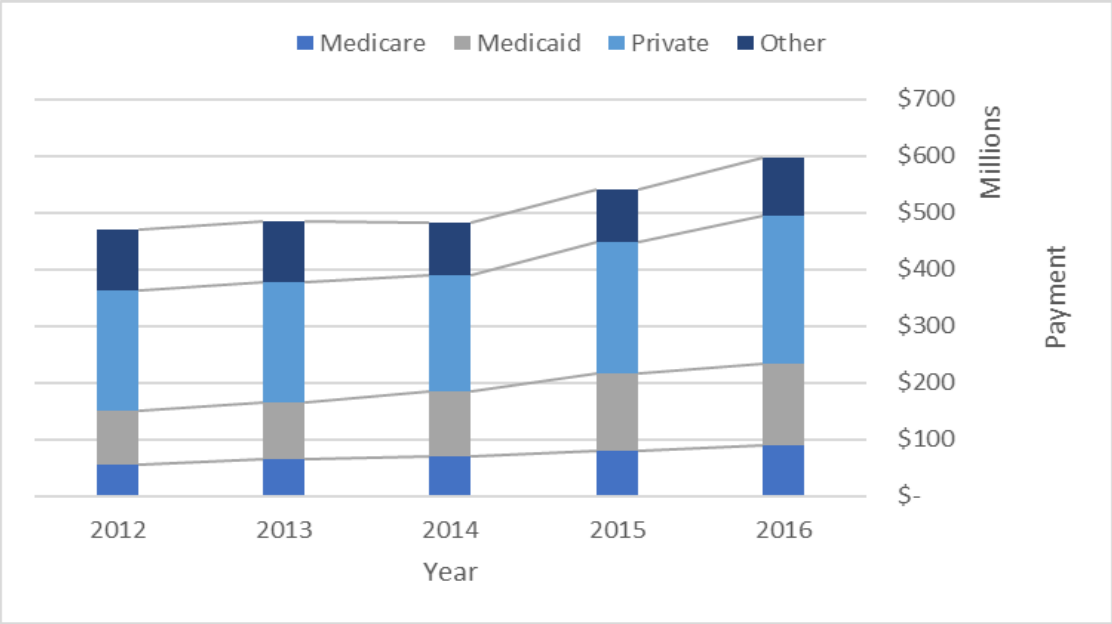
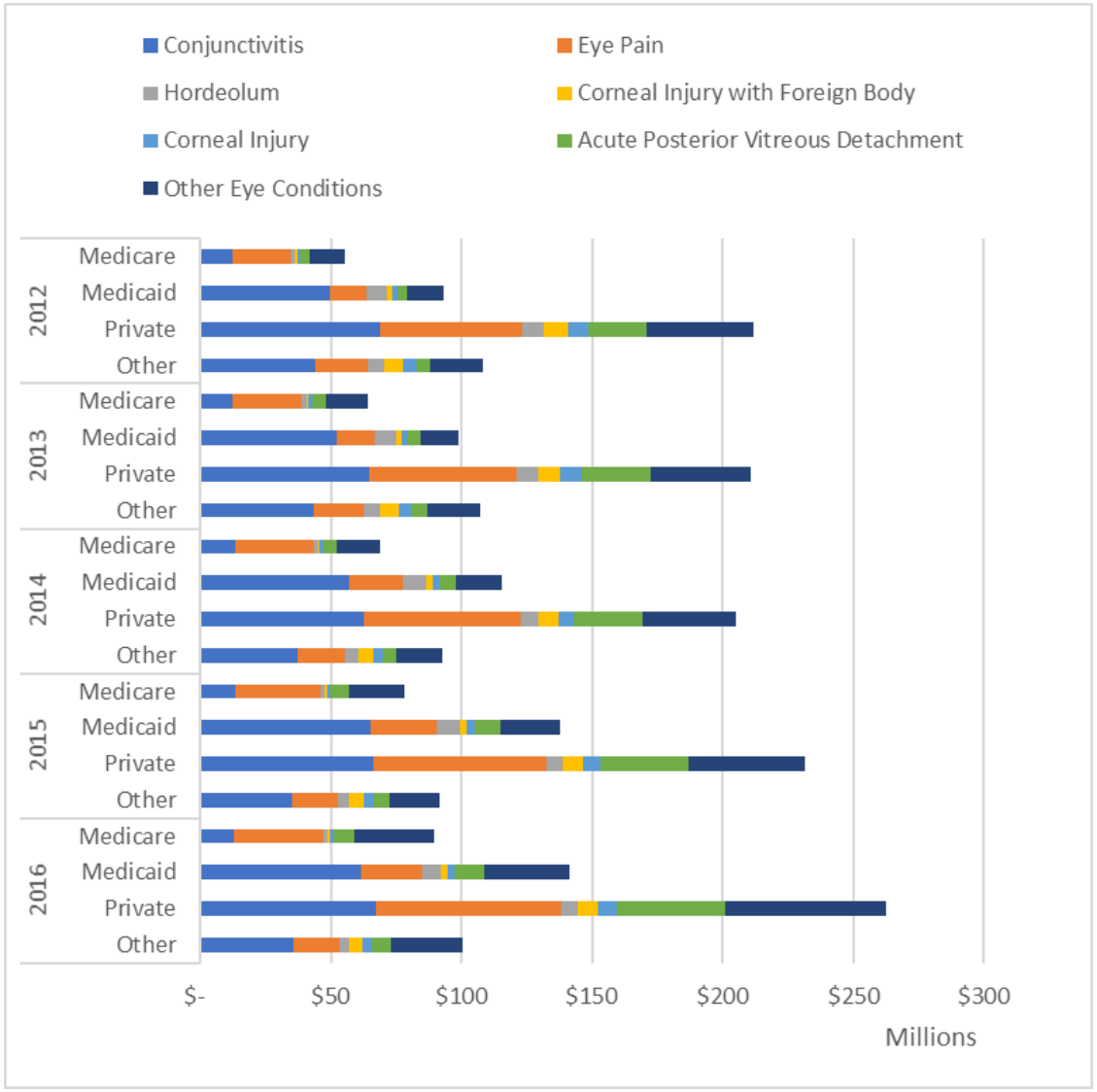


Table D5. Estimated Payment by Expected Primary Payer for Avoidable Emergency Departments Visits for Eye Conditions, HCUP NEDS, 2012-2016 (in millions)

Payor	2012		2013		2014		2015		2016	
	$	%	$	%	$	%	$	%	$	%
Medicare	56	11.9	64	13.3	69	14.2	78	14.5	89	15.1
Medicaid	93	19.9	99	20.6	116	24.0	138	25.6	141	23.8
Private	212	45.1	211	43.8	205	42.5	231	42.9	263	44.2
Other	108	23.1	107	22.3	93	19.3	91	17.0	100	16.9

Payment for avoidable emergency department visits related to conjunctivitis are more prominently paid by private and Medicare insurers (figure D10). Private insurers increased their payment for other eye conditions from 2014 to 2016 by 50%.

Figure D10. Annual Distribution of Estimated Payment for Avoidable Emergency Department Visits by Payor and Eye Condition, HCUP NEDS, 2012-2016 (in millions)



APPENDIX E: ED-Avoidable Eye Care Patient Survey- DRAFT

This section provides an example of a survey that a payer could use to assess quality of care under EyEDA.

Basic Approach

- Short, focused survey to assess patient experience during an urgent visit to an optometrist for any of the following eye conditions: conjunctivitis, hordeolum, corneal injury, corneal injury with foreign body, eye pain, acute posterior vitreous detachment, and other eye condition.
- This survey has been developed by referencing other standardized and validated patient experience surveys, including the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Clinician & Group survey, the Canadian Institute for Health Information's survey on Measuring Patient Experiences in Primary Health Care, and a United Kingdom shared care glaucoma scheme survey of patient satisfaction.[1]
- This will be an online survey, with a unique online survey link provided to each participating practice.
- The practice will administer the survey by emailing a survey invitation with the online link to each patient who meets the survey criteria – that is, to each patient who visits the practice to obtain treatment for any of the qualifying 6 eye conditions. The survey invitation should be emailed to the patient following the visit, on the day of the visit if possible, and followed by a reminder email approximately a week later.
- The survey is expected to take no more than 3 to 4 minutes to complete.
- In order to protect respondent confidentiality, the survey does not include any questions that ask for personally identifiable information (PII).
- Results will be analyzed and reported at the practice level in the form of a formatted Excel spreadsheet. Composite scores of patient experience (a single score that reflects multiple dimensions of patient experience) will also be provided for each practice as the reportable score for the APM.

[1] Agency for Healthcare Research and Quality. (2017). CAHPS Clinician & Group Visit Survey 2.0. Rockville, MD. http://www.ahrq.gov/cahps/surveys-guidance/cg/visit/index.html

Canadian Institute for Health Information. (2013). Measuring Patient Experiences in Primary Health Care. https://www.cihi.ca/en/primary-health-care

Levy, S., & Booth, A. (2015). Patient satisfaction with Peninsula Optometry Community Glaucoma Scheme. Eye (London, England), 29(10), 1395. doi:10.1038/eye.2015.67

Optometry Patient Experience Survey- DRAFT

Notes on how to read this survey document:

- Text in **BOLD CAPS** in brackets represents programming instructions, which will not be visible to respondents.
- **SP** means "single punch" where only one response is allowed from the list of response options and **MP** means "multi punch" where more than one response can be selected.
- Question numbers and numbers next to response options will not be visible to the respondents in the online survey

Example e-mail Invitation (from the practice to the patient) and Survey Introduction:

We are committed to providing you with the best quality of care and service. This short survey gives you the chance to tell us about your experience with our practice during your recent visit.

This survey is being conducted by the University of Massachusetts Medical School. The information you provide will be kept **private** and **confidential**. The survey will not ask for your name or any other identifying information. You can skip any question you prefer not to answer. Your answers will be combined with those of other patients and only the combined results will be shared with the practice for quality improvement purposes.

Screener

[ASK ALL] [SP]

1. Our records show that you saw an eye doctor or optometrist at this practice recently. Is that right?
    1. Yes
    2. No …….*[If respondent selects No, "Thank you for your time. We are interested in learning about the experiences of those who visited this practice recently, and have no additional questions for you."]*

[ASK IF Q1=1 (YES)] [MP]

2. Which of the following are the reasons for your recent visit? *Please select all that apply*.
    1. Conjunctivitis or pink eye
    2. Injury due to foreign body in the eye (also known as corneal injury with foreign body)
    3. Other injury in the eye, such as a scratch or an ulcer (also known as other corneal injury)
    4. Swelling and infection of the eyelid, such as a stye (also known as chalazia or hordeola)
    5. Floaters, flashing lights or spots in the eye (also known as vitreous detachment)
    6. Eye pain
    7. Other eye condition requiring urgent care (Please specify _____)
    8. None of the above **[SP]**

[If respondent selects None of the above, "Thank you for your time. We are interested in learning about the experiences of those who visited this practice to get treatment for an eye condition, and have no additional questions for you."]

A. Provider Selection

[ASK ALL] [SP]

3. Before visiting this practice, did you seek treatment anywhere else for this same eye condition?
    1. Yes
    2. No

[ASK IF Q3=1 (YES)] [MP]

4. Where else did you seek treatment for this eye condition? *Please select all that apply*.
    1. Another eye doctor or optometrist
    2. Your primary care provider (e.g., the doctor you usually see for medical issues)
    3. An ophthalmologist
    4. An urgent care facility
    5. Emergency department at a local hospital (ER)
    6. Other (Please specify _____)

[ASK ALL] [SP]

5. How easy or difficult was it for you to schedule your recent appointment at this practice for your eye condition?
    i. Very easy
    ii. Somewhat easy
    iii. Somewhat difficult
    iv. Very difficult

[ASK ALL] [SP]

6. Thinking of your recent visit to this practice for your eye condition, how long did you wait from the time you made the appointment to your visit?
    1. Less than 24 hours
    2. 24 hours to less than 48 hours
    3. 2 to 7 days
    4. 8 to 14 days
    5. More than 2 weeks

[ASK ALL] [SP]

7. How would you rate the amount of time you waited between making the appointment and your visit to this practice?
    1. Very acceptable

2. Somewhat acceptable
3. Somewhat unacceptable
4. Very unacceptable

B. Experience with This Eye Care Provider

[SHOW ALL] [MP]

This Eye Care Provider (Eye Doctor or Optometrist)

We will refer to the eye doctor or optometrist you recently saw at this practice as "this eye care provider." Please think of that person as you answer the following questions.

[ASK ALL] [SP]

8. Thinking of your experience during your recent visit with this eye care provider, to what extent do you agree or disagree with each of the following statements?

	Agree completely	Agree somewhat	Disagree somewhat	Disagree completely
a. This provider listened carefully to me				
b. This provider explained things in a way that was easy to understand				
c. This provider spent enough time with me				
d. This provider thoroughly examined my eye condition				
e. This provider gave me clear instructions on how to take care of my eye condition				
d. This provider gave me all the information I needed				

[ASK ALL] [SP]

9. How would you rate your satisfaction with the quality of care you received from this eye care provider?
    1. Very satisfied
    2. Somewhat satisfied
    3. Somewhat dissatisfied
    4. Very dissatisfied

[ASK ALL] [SP]

10. If you were to need additional care for your eye condition, how likely would you be to visit this eye care provider again?
    1. Very likely
    2. Somewhat likely
    3. Somewhat unlikely
    4. Very unlikely

E. About You

[ASK ALL] [SP]

17. What is your age?
    1. 18 to 24
    2. 25 to 34
    3. 35 to 44
    4. 45 to 54
    5. 55 to 64
    6. 65 to 74
    7. 75 or older

[ASK ALL] [SP]

18. Are you male or female?
    1. Male
    2. Female

[ASK ALL] [SP]

19. What is the highest grade or level of school that you have completed?
    1. 8th grade or less
    2. Some high school, but did not graduate
    3. High school graduate or GED
    4. Some college or 2-year degree
    5. 4-year college graduate
    6. More than 4-year college degree

[ASK ALL] [SP]

20. Are you of Hispanic or Latino origin or descent?
    1. Yes, Hispanic or Latino
    2. No, not Hispanic or Latino

[ASK ALL] [MP]

21. What is your race? *Please select all that apply.*
    1. White
    2. Black or African American
    3. Asian
    4. Native Hawaiian or Other Pacific Islander
    5. American Indian or Alaska Native
    6. Other

Thank you for taking the time to complete this survey.

APPENDIX F: Shared Savings Scenarios

Table F1. Eye Care Emergency Department Avoidance (EyEDA): Medicare Shared Savings Examples

The calculations in Table F1 below show different scenarios of Medicare shared savings distributions based on specific assumptions for model parameters. All six examples assume 1,000 participating eye care professionals; a base year average of 10 office visits per eye care professional per month; an 8% discount on FFS payments for office-based services; and a target utilization increase of 10% over base year office visits. The first three scenarios assume a 25% provider share of savings distributions, while the last three scenarios assume a 50/50 split between payers and eye care professionals. The impact of an individual eye care professional's performance in meeting the utilization target is shown by varying performance year utilization (9, 12 or 20 visits per eye care professional per month). Examples 1 and 2 result in an overall loss to the individual eye care professional; examples 1A, 1B, 2A & 2B show varying levels of positive distributions to the individual eye care professional. All examples show the negative impact of the FFS discount on individual eye care professional results.

	Calculation Steps	Assumptions/Sources	Example 1	Example 1 A	Example 1 B	Example 2	Example 2A	Example 2B
		Parameters						
	EyEDA Model Examples: Medicare Shared Savings	Participating eye care professionals:	1,000	1,000	1,000	1,000	1,000	1,000
		Base year Office visits per eye care professional per month:	10	10	10	10	10	10
		FFS Discount:	8%	8%	8%	8%	8%	8%
		Target % Increase:	10%	10%	10%	10%	10%	10%
		Performance year Office visits per eye care professional per month:	9	12	20	9	11	20
		Provider Share:	25%	25%	25%	50%	50%	50%
1	**ED Data - Visits**							
1.1	ED visits for ED-avoidable conditions, as defined by qualifying ED-avoidable ICD 10 diagnosis codes	See list of ICD 10 diagnosis codes for ED-avoidable conditions, Appendix B						
1.2	Base year ED visits for ED-avoidable codes	ED Avoidable Visits from HCUP, NEDS, 2016, Medicare	226,802	226,802	226,802	582,416	582,416	582,416
1.3	Performance year ED visits for ED-avoidable codes	Assume that the decrease in ED visits exactly equals the increase in office visits	214,802	214,802	214,802	570,416	570,416	570,416
1.4	Change in number of ED Visits, base year to performance year (1.2 - 1.3)		12,000	12,000	12,000	12,000	12,000	12,000
	ED Data - Payments							

	Calculation Steps	Assumptions/Sources	Example 1	Example 1 A	Example 1 B	Example 2	Example 2A	Example 2B
1.5	Average ED payment per visit, 2016	Average ED estimated payment per visit from HCUP, NEDS, Medicare, 2016	$396.48	$396.48	$396.48	$453.10	$453.10	$453.10
1.6	Inflation adjustment factor, 2016 to 2020	Inflation factor (Medicare PPS Hospital Inpatient Market Basket Index, 2016-2020)	1.123	1.123	1.123	1.123	1.123	1.123
1.7	Adjusted average ED payment per visit (1.5 x 1.6)		$445.25	$445.25	$445.25	$508.84	$508.84	$508.84
1.8	Base year Total payments for ED visits for ED-avoidable codes without intervention = base year ED visits (1.2) x adjusted ED payment per visit (1.7)		$100,982,919	$100,982,919	$100,982,919	$296,354,744	$296,354,744	$296,354,744
1.9	Performance year Total payments for ED visits for ED-avoidable codes with intervention = performance year ED visits (1.3) x adjusted ED payment per visit (1.7)		$95,639,955	$95,639,955	$95,639,955	$290,248,702	$290,248,702	$290,248,702
1.10	Change in total ED payments, base year to performance year (1.9 - 1.8)	Negative value indicates savings	($5,342,964)	($5,342,964)	($5,342,964)	($6,106,043)	($6,106,043)	($6,106,043)
2	**Eye Care Professional Office Visits**							
2.1	Eye Care Professional Office visits for ED-avoidable conditions, as defined by qualifying ED-avoidable ICD 10 diagnosis codes	See list of ICD 10 diagnosis codes for ED-avoidable conditions, Appendix B						
2.2	Base year Office visits for ED-avoidable codes	Average 10 visits per month, 120 visits/year, 1,000 participating office-based eye care professionals	120,000	120,000	120,000	120,000	120,000	120,000
2.3	Performance year Office visits for ED-avoidable codes		132,000	132,000	132,000	132,000	132,000	132,000
2.4	Change in eye care professional office visits, base year to performance year (2.3 - 2.2)		12,000	12,000	12,000	12,000	12,000	12,000

	Calculation Steps	Assumptions/Sources	Example 1	Example 1 A	Example 1 B	Example 2	Example 2A	Example 2B
	Eye Care Professional Office Visit Payments							
2.5	Average eye care professional payment per office visit	Average office CPT billing for ED-avoidable codes, based on 2019 Medicare FFS rates. See methodology in Appendix C.	$87.99	$87.99	$87.99	$87.99	$87.99	$87.99
2.6	Inflation adjustment factor, 2019 - 2020	Inflation Factor (Medicare PPS Hospital Inpatient Market Basket Index, 2019-2020)	1.033	1.033	1.033	1.033	1.033	1.033
2.7	Inflation adjusted eye care professional payments, 2020 (2.5 x 2.6)		$90.89	$90.89	$90.89	$90.89	$90.89	$90.89
2.8	Discount on FFS rates for eye care professionals		8%	8%	8%	8%	8%	8%
2.9	Discounted average eye care professional payment per office visit (2.7 - (2.7 x 2.8))		$83.62	$83.62	$83.62	$83.62	$83.62	$83.62
2.10	Base year Payments for office visits for ED-avoidable codes without intervention = base year office visits (2.2) x average eye care professional payment per visit (2.7)		$10,907,240	$10,907,240	$10,907,240	$10,907,240	$10,907,240	$10,907,240
2.11	Performance year Payments for office visits for ED-avoidable codes with intervention = performance year office visits (2.3) x discounted average eye care professional payment per visit (2.9)		$11,038,127	$11,038,127	$11,038,127	$11,038,127	$11,038,127	$11,038,127
2.12	Change in eye care professional payments, base year to performance year (2.11 - 2.10)		$130,887	$130,887	$130,887	$130,887	$130,887	$130,887
3	**Savings amount for distribution**							

	Calculation Steps	Assumptions/Sources	Example 1	Example 1 A	Example 1 B	Example 2	Example 2A	Example 2B
3.1	Gross savings amount for distribution (if 1.10 < 0, then (-1* (1.10+2.12)); else 0)		$5,212,078	$5,212,078	$5,212,078	$5,975,156	$5,975,156	$5,975,156
3.2	Program costs (administration of patient survey)	Cost estimate, University of Massachusetts Medical School, Office of Survey Research	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000
3.3	Net savings amount for distribution (3.1 - 3.2)		$4,962,078	$4,962,078	$4,962,078	$5,725,156	$5,725,156	$5,725,156
3.4	Payer share percentage		75%	75%	75%	50%	50%	50%
3.5	Eye care professional share percentage		25%	25%	25%	50%	50%	50%
3.6	Savings amount for distribution to eye care professionals (3.3 x 3.5)		$1,240,519	$1,240,519	$1,240,519	$2,862,578	$2,862,578	$2,862,578
3.7	Total visits eligible for distribution (2.4)		12,000	12,000	12,000	12,000	12,000	12,000
3.8	Savings distribution amount per eye care professional office visit (3.6 / 3.7)		$ 103.38	$ 103.38	$ 103.38	$238.55	$238.55	$238.55
4	**Individual eye care professional share of savings**							
4.1	Base year Eye care professional office visits for ED-avoidable codes	Base year Office visits per eye care professional per month x 12	120	120	120	120	120	120
4.2	Performance year Eye care professional office visits for ED-avoidable codes	Performance year Office visits per eye care professional per month x 12	108	144	240	108	132	240
4.3	Increase (decrease) in eye care professional office visits, base year to performance year (4.2 - 4.1)		-12	24	120	-12	12	120
4.4	Savings distribution amount per eye care professional office visit (3.8)		$103.38	$103.38	$103.38	$238.55	$238.55	$238.55
4.5	Gross shared savings amount for an average individual eye care professional: max (4.3 x 4.4) or 0		$0	$2,481	$12,405	$0	$2,863	$28,626
4.6	Loss from 8% FFS discount ((2.9 - 2.7) x (4.2))		($785)	($1,047)	($1,745)	($785)	($960)	($1,745)
4.7	Net financial reward to an average individual eye care professional (4.5 + 4.6)		($785)	$1,434	$10,660	($785)	$1,903	$26,881

	Calculation Steps	Assumptions/Sources	Example 1	Example 1 A	Example 1 B	Example 2	Example 2A	Example 2B
5	**Payer share of savings**							
5.1	Net savings amount for distribution (3.3)		$4,962,078	$4,962,078	$4,962,078	$5,725,156	$5,725,156	$5,725,156
5.2	Payer share percentage (3.4)		75%	75%	75%	50%	50%	50%
5.3	Payer savings per 1000 participating eye care professionals (5.1 x 5.2)		$3,721,558	$3,721,558	$3,721,558	$2,862,578	$2,862,578	$2,862,578

Table F2. Eye Care Emergency Department Avoidance (EyEDA): Private Payer Shared Savings Examples

The calculations in Table F2 below show different scenarios of private payer shared savings distributions based on specific assumptions for model parameters. All six examples assume 1,000 participating eye care professionals; a base year average of 10 office visits per eye care professional per month; an 8% discount on FFS payments for office-based services; and a target utilization increase of 10% over base year office visits. The first three scenarios assume a 25% provider share of savings distributions, while the last three scenarios assume a 50/50 split between payers and eye care professionals. The impact of an individual eye care professional's performance in meeting the utilization target is shown by varying performance year utilization (9, 12 or 20 visits per eye care professional per month). Examples 1 and 2 result in a loss to the individual eye care professional; examples 1A, 1B, 2A & 2B show positive distributions to the individual eye care professional. All examples show the negative impact of the FFS discount on individual eye care professional results.

	Calculation Steps	Assumptions/Sources	Example 1	Example 1 A	Example 1 B	Example 2	Example 2A	Example 2B
		Parameters						
	EyEDA Model Examples: Private Payer Shared Savings	Participating eye care professionals:	1,000	1,000	1,000	1,000	1,000	1,000
		Base year Office visits per eye care professional per month:	10	10	10	10	10	10
		FFS Discount:	8%	8%	8%	8%	8%	8%
		Target % Increase:	10%	10%	10%	10%	10%	10%
		Performance year Office visits per eye care professional per month:	9	12	20	9	11	20
		Provider Share:	25%	25%	25%	50%	50%	50%
1	**ED Data - Visits**							
1.1	ED visits for ED-avoidable conditions, as defined by qualifying ED-avoidable ICD 10 diagnosis codes	See list of ICD 10 diagnosis codes for ED-avoidable conditions, Appendix B						
1.2	Base year ED visits for ED-avoidable codes	ED-avoidable visits from HCUP, NEDS, 2016, Private Payers	582,416	582,416	582,416	582,416	582,416	582,416
1.3	Performance year ED visits for ED-avoidable codes	Assume that the decrease in ED visits exactly equals the increase in office visits	570,416	570,416	570,416	570,416	570,416	570,416
1.4	Change in number of ED Visits, base year to performance year (1.2 - 1.3)		12,000	12,000	12,000	12,000	12,000	12,000
	ED Data - Payments							
1.5	Average ED payment per visit, 2016	Average ED estimated payment per visit from HCUP, NEDS, private payers, 2016	$453.10	$453.10	$453.10	$453.10	$453.10	$453.10
1.6	Inflation adjustment factor, 2016 to 2020	Inflation factor (Medicare PPS Hospital Inpatient Market Basket Index, 2016-2020)	1.123	1.123	1.123	1.123	1.123	1.123

	Calculation Steps	Assumptions/Sources	Example 1	Example 1 A	Example 1 B	Example 2	Example 2A	Example 2B
1.7	Adjusted average ED payment per visit (1.5 x 1.6)		$508.84	$508.84	$508.84	$508.84	$508.84	$508.84
1.8	Base year Total payments for ED visits for ED-avoidable codes without intervention = base year ED visits (1.2) x adjusted ED payment per visit (1.7)		$296,354,744	$296,354,744	$296,354,744	$296,354,744	$296,354,744	$296,354,744
1.9	Performance year Total payments for ED visits for ED-avoidable codes with intervention = performance year ED visits (1.3) x adjusted ED payment per visit (1.7)		$290,248,702	$290,248,702	$290,248,702	$290,248,702	$290,248,702	$290,248,702
1.10	Change in total ED payments, base year to performance year (1.9 - 1.8)	Negative value indicates savings	($6,106,043)	($6,106,043)	($6,106,043)	($6,106,043)	($6,106,043)	($6,106,043)
2	**Eye Care Professional Office Visits**							
2.1	Eye Care Professional Office visits for ED-avoidable conditions, as defined by qualifying ED-avoidable ICD 10 diagnosis codes	See list of ICD 10 diagnosis codes for ED-avoidable conditions, Appendix B						
2.2	Base year Office visits for ED-avoidable codes	Average 10 visits per eye care professional per month, 120 visits/year, 1,000 participating eye care professionals	120,000	120,000	120,000	120,000	120,000	120,000
2.3	Performance year Office visits for ED-avoidable codes		132,000	132,000	132,000	132,000	132,000	132,000
2.4	Change in eye care professional office visits, base year to performance year (2.3 - 2.2)		12,000	12,000	12,000	12,000	12,000	12,000
	Eye Care Professional Office Visit Payments							
2.5	Average eye care professional payment per office visit	Average office CPT billing for ED-avoidable codes, based on 2019 Medicare FFS rates. See methodology in Appendix C.	$146.79	$146.79	$146.79	$146.79	$146.79	$146.79
2.6	Inflation adjustment factor, 2019 - 2020	Inflation factor (Medicare PPS Hospital Inpatient Market Basket Index, 2019-2020)	1.033	1.033	1.033	1.033	1.033	1.033
2.7	Inflation adjusted eye care professional payments, 2020 (2.5 x 2.6)		$151.63	$151.63	$151.63	$151.63	$151.63	$151.63
2.8	Discount on FFS rates for eye care professionals		8%	8%	8%	8%	8%	8%

	Calculation Steps	Assumptions/Sources	Example 1	Example 1 A	Example 1 B	Example 2	Example 2A	Example 2B
2.9	Discounted average eye care professional payment per office visit (2.7 - (2.7 x 2.8))		$139.50	$139.50	$139.50	$139.50	$139.50	$139.50
2.10	Base year Payments for office visits for ED-avoidable codes without intervention = base year office visits (2.2) x average eye care professional payment per visit (2.7)		$18,196,088	$18,196,088	$18,196,088	$18,196,088	$18,196,088	$18,196,088
2.11	Performance year Payments for office visits for ED-avoidable codes with intervention = performance year office visits (2.3) x discounted average eye care professional payment per visit (2.9)		$18,414,441	$18,414,441	$18,414,441	$18,414,441	$18,414,441	$18,414,441
2.12	Change in eye care professional payments, base year to performance year (2.11 - 2.10)		$218,353.06	$218,353.06	$218,353.06	$218,353	$218,353	$218,353
3	**Savings amount for distribution**							
3.1	Gross savings amount for distribution (if 1.10 < 0, then (-1* (1.10+2.12)); else 0)		$5,887,690	$5,887,690	$5,887,690	$5,887,690	$5,887,690	$5,887,690
3.2	Program costs (administration of patient survey)		$250,000	$250,000	$250,000	$250,000	$250,000	$250,000
3.3	Net savings amount for distribution (3.1 - 3.2)		$5,637,690	$5,637,690	$5,637,690	$5,637,690	$5,637,690	$5,637,690
3.4	Payer share percentage		75%	75%	75%	50%	50%	50%
3.5	Eye care professional share percentage		25%	25%	25%	50%	50%	50%
3.6	Savings amount for distribution to eye care professionals (3.3 x 3.5)		$1,409,422	$1,409,422	$1,409,422	$2,818,845	$2,818,845	$2,818,845
3.7	Total visits eligible for distribution (2.4)		12,000	12,000	12,000	12,000	12,000	12,000
3.8	Savings distribution amount per eye care professional office visit (3.6 / 3.7)		$117.45	$117.45	$117.45	$234.90	$234.90	$234.90
4	**Individual eye care professional share of savings**							
4.1	Base year Eye care professional office visits for ED-avoidable codes	Base year office visits per eye care professional per month x 12	120	120	120	120	120	120
4.2	Performance year Eye care professional office visits for ED-avoidable codes	Performance year office visits per eye care professional per month x 12	108	144	240	108	132	240

	Calculation Steps	Assumptions/Sources	Example 1	Example 1 A	Example 1 B	Example 2	Example 2A	Example 2B
4.3	Increase (decrease) in eye care professional office visits, base year to performance year (4.2 - 4.1)		-12	24	120	-12	12	120
4.4	Savings distribution amount per eye care professional office visit (3.8)		$117.45	$117.45	$117.45	$234.90	$234.90	$234.90
4.5	Gross shared savings amount for an average individual eye care professional: max (4.3 x 4.4) or 0		$0	$2,819	$14,094	$0	$2,819	$28,188
4.6	Loss from 8% FFS discount ((2.9 - 2.7) x (4.2))		($1,310)	($1,747)	($2,911)	($1,310)	($1,601)	($2,911)
4.7	Net financial reward to an average individual eye care professional (4.5 + 4.6)		($1,310)	$1,072	$11,183	($1,310)	$1,218	$25,277
5	**Payer share of savings**							
5.1	Net savings amount for distribution (3.3)		$5,637,690	$5,637,690	$5,637,690	$5,637,690	$5,637,690	$5,637,690
5.2	Payer share percentage (3.4)		75%	75%	75%	50%	50%	50%
5.3	Payer savings per 1000 participating eye care professionals (5.1 x 5.2)		$4,228,267	$4,228,267	$4,228,267	$2,818,845	$2,818,845	$2,818,845

APPENDIX G: Acknowledgments

Contributions to the development and submission to this proposal were made by the following individuals:

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