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Evaluating Access to Laser Eye Surgery by Driving Times Using Medicare Data and Geographical Mapping

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Supplemental content

IMPORTANCE Recently, several states have granted optometrists privileges to perform select laser procedures (laser peripheral iridotomy, selective laser trabeculoplasty, and YAG laser capsulotomy) with the aim of increasing access. However, whether these changes are associated with increased access to these procedures among each state's Medicare population has not been evaluated.

OBJECTIVE To compare patient access to laser surgery eye care by estimated travel time and 30-minute proximity to an optometrist or ophthalmologist.

DESIGN, SETTING, AND PARTICIPANTS This retrospective cohort database study used Medicare Part B claims data from 2016 through 2020 for patients accessing new patient or laser eye care (laser peripheral iridotomy, selective laser trabeculoplasty, YAG) from optometrists or ophthalmologists in Oklahoma, Kentucky, Louisiana, Arkansas, and Missouri. Analysis took place between December 2021 and March 2023.

MAIN OUTCOME AND MEASURES Percentage of each state's Medicare population within a 30-minute travel time (isochrone) of an optometrist or ophthalmologist based on US census block group population and estimated travel time from patient to health care professional.

RESULTS The analytic cohort consisted of 1 564 307 individual claims. Isochrones show that optometrists performing laser eye surgery cover a geographic area similar to that covered by ophthalmologists. Less than 5% of the population had only optometrists (no ophthalmologists) within a 30-minute drive in every state except for Oklahoma for YAG (301 470 [7.6%]) and selective laser trabeculoplasty (371 097 [9.4%]). Patients had a longer travel time to receive all laser procedures from optometrists than ophthalmologists in Kentucky: the shortest median (IQR) drive time for an optometrist-performed procedure was 49.0 (18.4-71.7) minutes for YAG, and the the longest median (IQR) drive time for an ophthalmologist-performed procedure was 22.8 (12.1-41.4) minutes, also for YAG. The median (IQR) driving time for YAG in Oklahoma was 26.6 (12.2-56.9) for optometrists vs 22.0 (11.2-40.8) minutes for ophthalmologists, and in Arkansas it was 90.0 (16.2-93.2) for optometrists vs 26.5 (11.8-51.6) minutes for ophthalmologists. In Louisiana, the longest median (IQR) travel time to receive laser procedures from optometrists was for YAG at 18.5 (7.6-32.6) minutes and the shortest drive to receive procedures from ophthalmologists was for YAG at 20.5 (11.7-39.7) minutes.

CONCLUSIONS AND RELEVANCE Although this study did not assess impact on quality of care, expansion of laser eye surgery privileges to optometrists was not found to lead to shorter travel times to receive care or to a meaningful increase in the percentage of the population with nearby health care professionals.

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Most eye care in the US is provided by ophthalmologists and optometrists in outpatient settings, although the 2 professions have different training requirements and scopes of practice.[1-3] Due to their training in systemic disease, ophthalmologists tend to treat older and more medically complex patients.[4] Invasive procedures such as laser eye surgery have been traditionally limited to ophthalmologists, who are similarly licensed in all states to perform surgeries, but state laws regarding optometric scopes of practice differ significantly.[5,6]

Over the last 2 decades, Oklahoma (1998), Kentucky (2011), and Louisiana (2014) have expanded optometrists' scopes of practice by legislative action, ostensibly to improve patients' access to eye care, with optometrists currently seeking surgical privileges in additional states.[7,8] Newly granted privileges include laser photocoagulation and photoablative procedures, periocular or subconjunctival injections, and eyelid surgeries.[5] Some argue that the availability of eye care services are inadequate in certain regions and that increasing the scopes of practice of optometrists could ameliorate any deficiencies.[6,9] State legislatures considering laser surgery privileges for optometrists may benefit from reviewing results from states that have already granted them.

Data supporting the relationship between scope expansion and improved patient access to care are sparse. Previous studies have used Medicare claims data but were limited by the amount of data used and the states in which analysis was conducted.[3,5,10-12] We leveraged census, geographical, and Medicare data to evaluate whether access to laser eye surgery was associated with improvement in states that allow optometrists to deliver laser care.

Key Points

Question Is expanding laser eye surgery privileges to optometrists associated with improved patient access to laser procedures?

Findings In this cohort study of Medicare Part B claims data, most optometrists who perform laser eye surgery procedures were found to practice in areas already served by ophthalmologists and only a small percentage of the population of each state resided exclusively near (30-minute access) to optometrists. In Oklahoma and Kentucky, patients drove longer times to see optometrists than ophthalmologists, and in Louisiana, patients drove shorter to optometrists for laser eye surgery procedures.

Meaning There is insufficient evidence to show that expansion of laser eye surgery privileges to optometrists has increased patient access to laser procedures.

Methods

This study combined data from Medicare Part B claims,[13] the 2020 US Census,[14] geographical data from the Melissa Data application programming interface (API) (Melissa Inc),[15] TomTom road geometries, and TomTom historical traffic data[16] to estimate geographical access and travel times for laser eye surgery procedures by optometrists and ophthalmologists in Oklahoma, Kentucky, Louisiana, Arkansas, and Missouri from January 2016 to December 2020. The research protocol was approved by the institutional review board of the University of Washington, and informed consent was waived due to this being a claims database study. The study was conducted in accordance with the Declaration of Helsinki[17] and compliant with the Health Insurance Portability and Accountability Act of 1996. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline was followed.

Medicare Claims Data

Research-identifiable data for Medicare Part B carrier and outpatient fee-for-service claims were obtained for optometrists and ophthalmologists who filed claims in Oklahoma, Kentucky, Louisiana, Arkansas, and Missouri from 2016 to 2020. Three of these states have had expanded scope for several years: Oklahoma (1998), Kentucky (2011), and Louisiana (2014). Arkansas, which expanded to include YAG laser capsulotomy procedures in 2019, and Missouri, which has no expansion, served as neighboring geographic comparators with similar rural/urban population distributions.

2020 US Census

Census data for each state included total population, list of census block groups, population-weighted centroid, and population of each 2020 census block group.

Geographical Information and Traffic Data

The geographical data contained mappings from zip codes to geographic coordinates (latitude and longitude). Zip codes of 9 digits are highly precise and were used only for health care professional locations. Zip codes of 5 digits are less precise but provide a level of deidentification for patients; 5-digit zip code coordinates are based on the centroid of the region covered by that zip code. Since zip code boundaries can change from year to year, zip codes were paired with the year of the event for accurate coordinate determination.

Road geometries and historical traffic data were accessed via the Valhalla open-source API. The API isochrone service was used to determine the region around a health care professional location within a 10-, 20-, or 30-minute drive based on roads and traffic. The API point to point routing service was used to estimate travel time.

Study Sample

Medicare data included claims with *Current Procedural Terminology* codes for YAG (66821), selective laser trabeculoplasty (SLT)/argon laser trabeculoplasty (65855), or laser peripheral iridotomy (LPI) (66761) laser procedures and 10 New Patient Eye and Evaluation and Management codes (92001-92005 and 99201-99205). For laser procedures, we excluded claims of less than $75, claims including the *Current Procedural Terminology* modifier for postoperative care (code 55), claims where the national provider identifier

Table 1. Unique Beneficiaries (Patients) Receiving Care From an Ophthalmologist or Optometrist by State and Procedure

Procedure	No. (%)					
	Oklahoma	Kentucky	Louisiana	Arkansas	Missouri	Total
LPI						
Ophthalmologist	474 (66.8)	1111 (85.7)	991 (97.5)	1233 (100)	2167 (100)	5976 (93.1)
Optometrist	236 (33.2)	185 (14.3)	25 (2.5)	0	0	446 (6.9)
SLT						
Ophthalmologist	3760 (74.3)	2988 (71.8)	5860 (91.3)	3754 (100)	5864 (100)	22 226 (88.0)
Optometrist	1300 (25.7)	1175 (28.2)	558 (8.7)	0	0	3033 (12.0)
YAG						
Ophthalmologist	27 364 (62.9)	30 655 (80.7)	31 196 (90.6)	34 301 (99.9)	58 048 (100)	181 564 (87.1)
Optometrist	16 158 (37.1)	7335 (19.3)	3246 (9.4)	49 (0.1)	0	26 788 (12.9)
New patient visit						
Ophthalmologist	123 163 (45.1)	135 942 (47.3)	132 783 (61.2)	113 518 (51.1)	173 469 (53.3)	678 875 (51.3)
Optometrist	149 656 (54.9)	151 151 (52.7)	84 172 (38.8)	108 674 (48.9)	151 746 (46.7)	645 399 (48.7)

Abbreviations: LPI, laser peripheral iridotomy; SLT, selective laser trabeculoplasty.

Table 2. Count of Unique Health Care Professionals Making Medicare Claims as Ophthalmologists and Optometrists by State and Procedure

Procedure	No. (%)[a]					
	Oklahoma	Kentucky	Louisiana	Arkansas	Missouri	Total
LPI						
Ophthalmologist	41 (68.3)	93 (84.5)	92 (NR)	71 (100)	166 (100)	463 (NR)
Optometrist	19 (31.7)	17 (15.5)	<10 (<10)	0	0	<46 (<10)
SLT						
Ophthalmologist	58 (50.9)	86 (73.5)	140 (79.1)	73 (100)	150 (100)	507 (80.3)
Optometrist	56 (49.1)	31 (26.5)	37 (20.9)	0	0	124 (19.7)
YAG						
Ophthalmologist	121 (43.8)	183 (70.4)	215 (76.8)	115 (NR)	275 (100)	909 (NR)
Optometrist	155 (56.2)	77 (29.6)	65 (23.2)	<10 (<9)	0	<307 (<33.8)
New patient visit						
Ophthalmologist	201 (21.7)	323 (33.0)	327 (48.4)	180 (29.5)	435 (32.5)	1466 (32.4)
Optometrist	727 (78.3)	656 (67.0)	349 (51.6)	431 (70.5)	902 (67.5)	3064 (67.6)
Optometrist-provided care	**No./total No. (%)**					
	Oklahoma	**Kentucky**	**Louisiana**	**Arkansas**	**Missouri**	**Total**
LPI	19/727 (2.6)	17/656 (2.6)	10/349 (2.9)	0/431 (0)	0/902 (0)	NA
SLT	56/727 (7.7)	31/656 (4.7)	37/349 (10.6)	0/431 (0)	0/902 (0)	NA
YAG	155/727 (21.3)	77/656 (11.7)	65/349 (18.6)	10/431 (2.3)	0/902 (0)	NA

Abbreviations: LPI, laser peripheral iridotomy; NA, not applicable; NR, not reported; SLT, selective laser trabeculoplasty.

[a] Patient counts less than 10 but greater than zero are reported as less than 10.

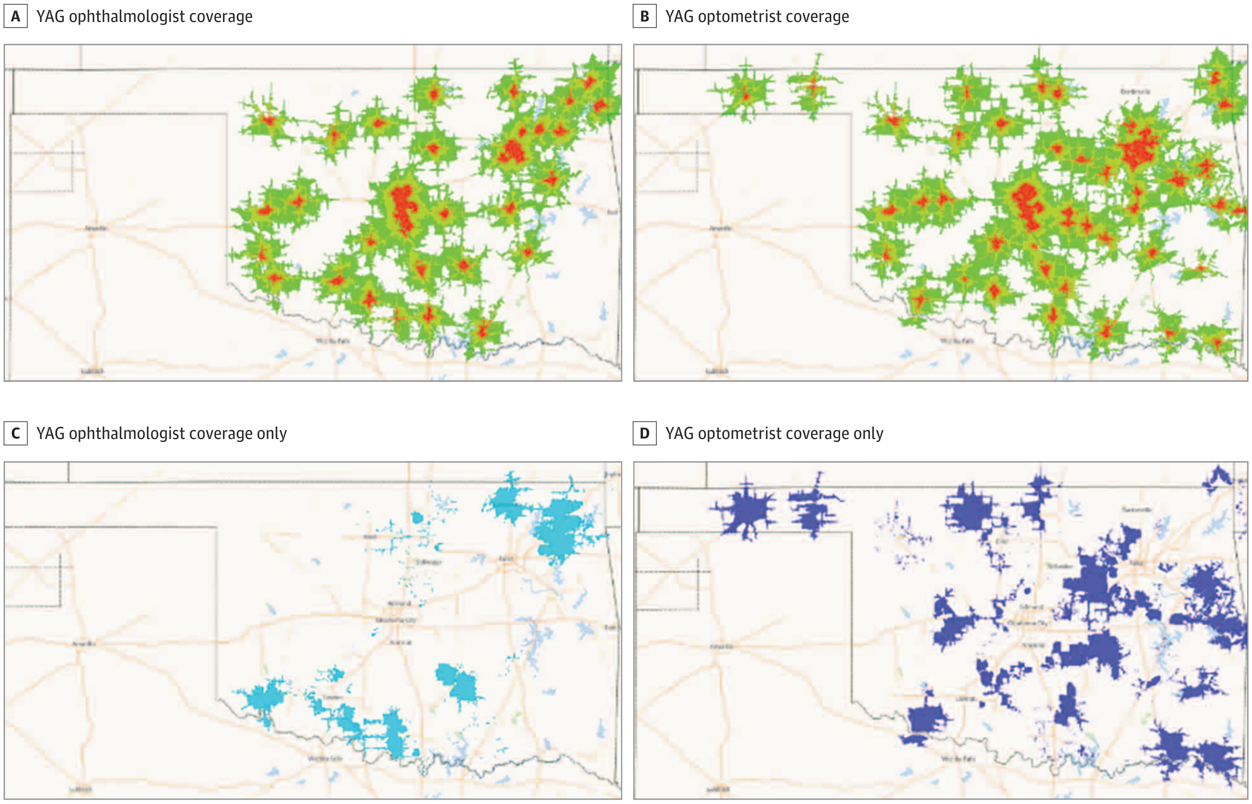
could not be determined, claims where the health care professional's specialty was any code other than optometrist (code 41) or ophthalmologist (code 18), and claims missing critical fields. Travel to new patient visits was compared with surgical visit travel when assessing relative driving distances to optometrists and ophthalmologists.

Including states without expanded scope of practice (Arkansas and Missouri) provided the opportunity to flag claims that appeared out of scope. Using the physician crediting method described, a tally of all laser eye surgery procedures performed by each optometrist or ophthalmologist in each study year was made. Claims where the credited optometrist or ophthalmologist performed fewer than 3 of that same procedure in that same year were excluded; this filter removed both types of health care professionals providing only limited access to a procedure and coding errors that occur infrequently. The remaining claims were grouped by state according to health care professional location, and claims for patients in that same state or any of the bordering states were included.

Geographical Analysis

Geographical access of 30 minutes or less was calculated for each combination of state, health care professional, and procedure by summing the populations of all census block groups with a centroid falling inside the 30-minute isochrone boundary. Patient destinations for laser eye surgery care were identified by using the most expensive procedure

Figure 1. Health Care Professional Coverage of Oklahoma for YAG Procedures



For each state, the tricolor maps indicate the geographical regions where patients can reach a health care professional in 10 minutes (red), 20 minutes (yellow), or 30 minutes (green). The light blue and dark blue maps indicate regions of the state that are exclusively covered within 30 minutes by an ophthalmologist or an optometrist. Comparison of Oklahoma, Kentucky, and Louisiana is included in eFigure 15 in Supplement 1 and population percent coverage is in eTable 3 in Supplement 1.

for that patient, limiting each patient to contributing only once to the aggregated time estimates while likely selecting the surgery location and not the postoperative care location in the case of a coding error. For new patient visits, only the first visit to a health care professional (optometrist or ophthalmologist) was included. For comparison, hypothetical pairings of each valid health care professional with each patient seeking care in that state were compiled; point to point routing was calculated as described above. Additional details are provided in the eMethods in Supplement 1.

Statistical Methods

Data were accessed using PostGRES Structured Query Language (PostgreSQL Global Development Group) and processed using Python version 3.9.5 (Python Software Foundation) with Scipy version 1.7.3[18] and statsmodels version 0.13.2[19] for analysis. Minimum, maximum, median, IQR, and percentage of patients with estimated travel times under 30 minutes are reported along with 95% CIs. GNU Parallel was used for parallelization.[20] By agreement and to preserve privacy in the Medicare data, any patient count less than 10 but greater than zero is reported as less than 10. Analysis took place between December 2021 and March 2023.

Results

The analytic cohort consisted of 1 564 307 individual claims for 2016 through 2020 inclusive after applying the exclusion criteria. From the US Census of 2020, the population of each state was as follows: Oklahoma, 3 959 353; Kentucky, 4 505 836; Louisiana, 4 657 757; Arkansas, 3 011 524; and Missouri, 6 154 913.

Percentage of Procedures Performed by Optometrists

Optometrists in Oklahoma provided the greatest percentage of laser eye surgery procedures compared with other states with 33.2% of LPI (n = 710), 25.7% of SLT (n = 5060), and 37.1% of YAG procedures (n = 43 522). In Louisiana, optometrists performed the lowest percentage of procedures among states with expansion of optometric scope of practice before 2016. The percentage of new patient visits conducted by optometrists was Oklahoma, 54.9% (149 656 of 272 819); Kentucky, 52.7% (151 151 of 287 093); Louisiana, 38.8% (84 172 of 216 955); Arkansas, 48.9% (108 674 of 222 192); and Missouri, 46.7% (151 746 of 325 215) (**Table 1**). Less than 1.2% of patients in any state made new patient visits to both an optometrist and ophthalmologist in 2016 to 2020. Trends for the number of laser eye surgery procedures performed by optometrists and ophthalmologists are shown by state and year in eFigures 1 and 2 in Supplement 1.

Percentage of Health Care Professionals With Optometric Training

In Oklahoma, optometrists accounted for 31.7% of LPI (n = 19), 49.1% of SLT (n = 56), and 56.2% of health care professionals (n = 155) making claims for YAG capsulotomy procedures; in Kentucky, optometrists accounted for 15.5% of LPI (n = 17), 26.5% of SLT (n = 31), and 29.6% of YAG (n = 77); in Louisiana optometrists accounted for less than 10% of LPI (n < 10), 20.9% of SLT (n = 37), and 23.2% of YAG (n = 65); and in Arkansas optometrists accounted for less than 9% of health care professionals (n < 10) making claims for YAG (**Table 2**). Using the number of unique health care professionals claiming new patient visits as an indicator of the optometrists providing eye care to the Medicare population, we found that 65 of 349 optometrists (18.6%) provided YAG procedures in Louisiana; most other procedures and states had lower percentages of optometrists providing laser procedures.

Access Within 30 Minutes of Driving

Isochrone analysis revealed that optometrists and ophthalmologists generally practice in similar geographic areas. There is a greater percentage of the population that is exclusively within a 30-minute drive to only an ophthalmologist compared with only an optometrist for all states and procedure combinations except in Oklahoma for YAG procedures (**Figure 1**; eFigures 3-15 and eTable 1 in Supplement 1). Greater than 5% of the population is within a 30-minute drive to only an optometrist in Oklahoma for YAG (301 470 [7.6%]) and SLT (371 097 [9.4%]) (eFigures 7-8 and eTable 2 in Supplement 1).

Patient Travel Patterns to Selected Health Care Professionals

Patients had a longer travel time to receive all laser procedures from optometrists than ophthalmologists in Kentucky: the shortest median (IQR) drive time for an optometrist-performed procedure was 49.0 (18.4-71.7) minutes for YAG, and the the longest median (IQR) drive time for an ophthalmologist-performed procedure was 22.8 (12.1-41.4) minutes, also for YAG. The median (IQR) driving time for YAG in Oklahoma was 26.6 (12.2-56.9) for optometrists vs 22.0 (11.2-40.8) minutes for ophthalmologists and in Arkansas it was 90.0 (16.2-93.2) for optometrists vs 26.5 (11.8-51.6) minutes for ophthalmologists.

However, in Louisiana, the longest median (IQR) travel time to receive laser procedures from optometrists was for YAG at 18.5 (7.6-32.6) minutes and the shortest median (IQR) drive to receive procedures from ophthalmologists was for YAG at 20.5 (11.7-39.7) minutes (eTable 3 in Supplement 1).

YAG capsulotomy was the most commonly performed laser procedure in all states (eFigures 1-2 in Supplement 1). In Oklahoma, the percentage of patients undergoing YAG who traveled less than 30 minutes was 65.1% (95% CI, 64.1%-65.3%) for ophthalmologists compared with 53.0% (95% CI, 52.2%-53.8%) for optometrists. In Kentucky, the percentage of patients traveling less than 30 minutes was 60.0% (95% CI, 59.7%-60.8%) for ophthalmologists compared with 37.0% (95% CI, 35.6-37.8) for optometrists. In Arkansas, the percentage of patients was 54.0% (95% CI, 53.0%-54.1%) for ophthalmologists and 33.0% (95% CI, 16.5%-50.2%) for optometrists. In Louisiana, a lower percentage of patients traveled less than 30 minute for YAG procedures when traveling to ophthalmologists at 65.0% (95% CI, 64.5%-65.6%) compared with optometrists at 71.0% (95% CI, 69.1%-72.2%). Missouri did not have any optometrists performing the procedure (**Figure 2**). LPI and SLT procedures were less common but had similar state-level trends (eFigures 16-18 and eTable 1 in Supplement 1).

New Patient Visit Comparison

For all states, the estimated travel times for new patient visits were less when seeing an optometrist than an ophthalmologist. These visits included all reasons to visit a new health care professional and were not limited to LPI, SLT, or YAG laser eye surgery procedures (eFigure 19 and eTable 3 in Supplement 1).

Hypothetical Patient Travel Times to Closest Health Care Professionals

We explored the case of hypothetical access to the nearest health care professional (eFigures 20-25 in Supplement 1). For YAG procedures, we found that patients in Kentucky who originally chose an optometrist, 89.0% (95% CI, 87.6%-89.3%) were within a 30-minute drive of an ophthalmologist and 87.0% (95% CI, 85.9%-87.4%) within a 30-minute drive to the nearest optometrist. Choosing the closest health care professional to perform YAG could have shortened the median estimated travel time from 49 minutes to 15 minutes (Figure 2 and eFigure 26 in Supplement 1 report data fore those originally choosing an ophthalmologist).

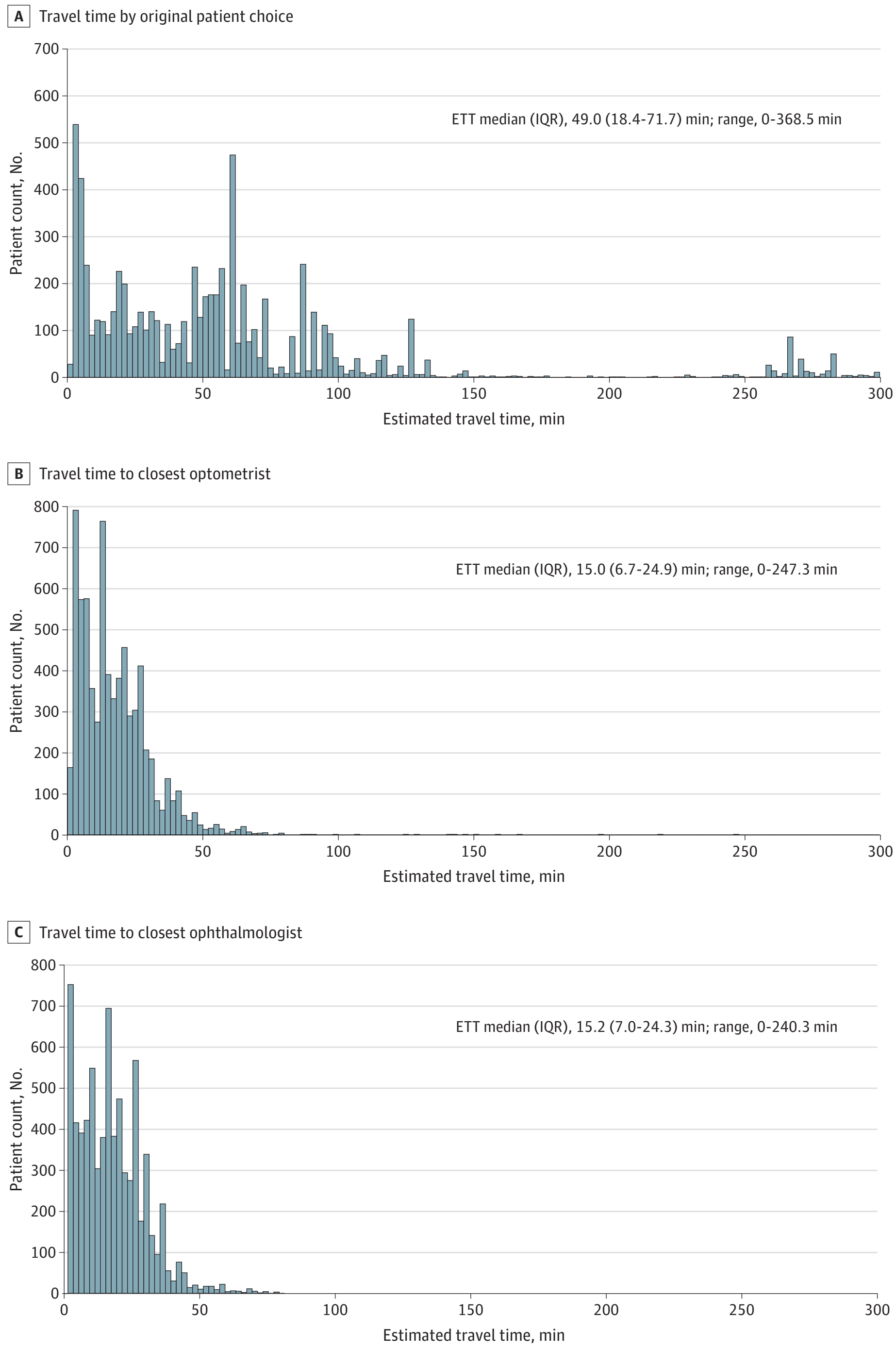
Discussion

We examined Medicare claims data from 2016 to 2020 in Oklahoma, Kentucky, Louisiana, Arkansas, and Missouri to explore whether expansion of optometrist surgical privileges was associated with improved access to 3 laser eye surgery procedures: YAG capsulotomy, LPI, and SLT.

One of the primary arguments made for increasing optometric scope of practice is the possibility of improved access to care for patients.[9] However, with the exception of YAG and SLT in Oklahoma, the percentage of the population within 30 minutes of only an optometrist for laser eye surgery procedures was less than 5% in the states with expanded scope; isochrone maps for each state showed that most optometrists performing laser eye surgery are doing so where ophthalmologists already practice. A 2018 study found that in Oklahoma, Kentucky, and New Mexico, nearly half of Medicare beneficiaries who received surgical care from an optometrist lived within 30 minutes of an ophthalmologist.[5]

Health care professional proximity alone does not determine where a patient decides to receive care.[16,21] In Kentucky, patients drove longer to have YAG procedures

Figure 2. Kentucky YAG Procedure: Patients Who Originally Chose an Optometrist



For each patient who chose an optometrist for a YAG procedure, the plots show the impact of making a different health care professional choice. ETT indicates estimated time travel. Of 7246 patients, 2658 (36.7% [95% CI, 35.6%-37.8%]) who made original choices (A), 6278 (86.6% [95% CI, 85.9%-87.4%]) who chose the closest optometrist (B), and 6419 (89.0% [95% CI, 87.9%-89.3%]) who chose the cloests ophthalmologist (C) had values less than 30.

performed by an optometrist (median, 49 minutes) rather than an ophthalmologist (median, 23 minutes). We also found longer drive times to optometrists for YAG procedures performed in Oklahoma and Arkansas. For LPI, patients in Kentucky drove over 1 hour (median, 61 minutes) for an optometrist to perform an LPI rather than a median of 21 minutes for an ophthalmologist. In comparison, the mean drive time for a new patient appointment in all states was shorter for patients seeing an optometrist, which is consistent with other studies showing that there are more practicing optometrists than ophthalmologists.[10] Therefore, longer drive times to receive laser eye surgery procedures from optometrists were unexpected.

We further explored our unexpected findings by examining estimated travel time if patients opted for the closest health care professional for YAG procedure in Kentucky. Patients who initially chose an ophthalmologist had a median travel time of 23 minutes. This could have been reduced by 5 to 10 minutes if they selected the closest optometrist (median, 13 minutes) or ophthalmologist (median, 18 minutes). In contrast, patients who chose to see an optometrist traveled significantly more with a median estimated travel time of 49 minutes. Choosing the nearest optometrist (median, 14 minutes) or ophthalmologist (median, 15 minutes) would have saved nearly 35 minutes of travel time. Trends of longer driving times for laser procedures for optometrists compared with ophthalmologists in states where scope has been expanded to improve access are concerning. It is possible that these patients are being referred to distant health care professionals within a network, resulting in increased drive times.

In Oklahoma, while optometrists comprise 56% of all health care professionals who perform 3 or more YAG procedures per year, they account for only 37% of total procedures, indicating that optometrists provide fewer YAG procedures on average than ophthalmologists. The percentage of optometrists who provided YAG procedures in Oklahoma was 21.3%, possibly indicating that many optometrists are choosing not to provide laser procedures. This trend is seen in Kentucky, Louisiana, and Arkansas as well, although their results may be explained by surgical scope expansions having occurred more recently. Despite the larger number of optometrists performing YAG in Oklahoma, the only state that has a greater percentage of the population with 30-minute access to only optometrists (7.6%) vs only to ophthalmologists (4.1%), patients in Oklahoma were traveling for longer times on average for YAG procedures from an optometrist. Mahr et al[11] found no difference in drive times between Oklahoma Medicare patients who saw optometrists vs ophthalmologists for YAG procedures; however, our study used the full Medicare data set and a different method to calculate driving time.

Limitations

Several limitations exist in this study. Anomalies in the Medicare data included patients older than 120 years and out-of-scope procedures occurring in Missouri and Arkansas; not all errors are as easily identified, and thus, the true number of procedures performed by each health care professional is subject to some degree of error. Although 29% of Medicare beneficiaries receiving SLT and YAG procedures were covered under Medicare Part C, we had to omit all Part C data because of the difficulty in unambiguously identifying the individual performing the procedure; this is consistent with other findings.[3,22] In addition, our data were limited to Medicare claims from 2016 to 2020; related claims just outside this window could not be considered for context or error detection. Thus, our estimates may be underestimates or overestimates of true differences, although yearly rate between 4 years did not appear to change significantly decreasing the likelihood of potential outliers outside our study window. In addition, data from 2020 may have been impacted by COVID-19–related restrictions.

We did not include health care professionals in adjacent states; patients living in these border communities may travel outside of our study area potentially affecting conclusions regarding health care professional choice and access to care. We assumed travel by car from the patient's home and did not consider other starting points. Both health care professional types may have multiple sites of practice but enter just 1 location on Medicare claim forms, leading to a potential underestimation of geographical coverage. Population-weighted centroids were used for access calculations for the general population and geographic centroids were used for point to point routing based on zip codes; in both cases, there are inaccuracies when estimating distance and time to access care. We were unable to disambiguate case complexity or severity in the claims data to understand if this played a role in a patient's choice to see an optometrist or ophthalmologist.

The study data are limited to geographical analysis and cannot address whether quality of care was improved with this expanded access, whether ease or speed of appointments were improved, the impact of physician availability, or if costs decreased without compromising quality. Finally, our data did not allow analyses of sociodemographic factors including race and ethnicity or cultural factors that could have played a role in decision-making for patients.

Conclusions

This study of Medicare claims in the states of Oklahoma, Kentucky, Louisiana, Arkansas, and Missouri found insufficient evidence to assert that optometric scope expansion increases geographical access and reduces driving times for laser procedures. Both optometrists and ophthalmologists are critical in the delivery of eye care in the US, although their training requirements vary, and the impact of expanded access on quality of care and other outcomes should be investigated in future studies. Given concerns about quality of care per previous literature[23,24] and the lack of evidence for improved access to care in our study, careful consideration should be given before supporting additional scope of practice expansion.

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Concept and design: Rajesh, Stewart, A. Lee, Miller, C. Lee.
Acquisition, analysis, or interpretation of data: Shaffer, Rajesh, A. Lee, Miller, C. Lee, Francis.
Drafting of the manuscript: Shaffer, Rajesh, Miller, Francis.
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