

Survey of Telehealth Adoption by Neuro-ophthalmologists During the COVID-19 Pandemic:
Benefits, Barriers and Utility

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Abstract

Background: During the COVID-19 pandemic tele-health modalities have come to prominence as a strategy for providing patient care when in-person care provision opportunities are limited. The degree of adoption by neuro-ophthalmologists has not been quantified.

Methods: Telehealth utilization pre- and peri-COVID-19 was surveyed among practicing neuro-ophthalmologists in and outside the US using an on-line platform. Demographics, perceived benefits, barriers, and utility for different neuro-ophthalmic conditions were collected. Data collection occurred over a 2-week period in May, 2020.

Results: 208 practicing neuro-ophthalmologists (81.3% US, 50.2% female, age range < 35 to > 65, mode 35-44 years) participated in the survey. Utilization of all telehealth modalities increased from pre-COVID to peri-COVID (video visit 3.9% to 68.3%, $p < 0.0005$, remote interpretation of testing 26.7% to 32.2%, $p = 0.09$, on-line second opinion 7.9% to 15.3%, $p = 0.001$, interprofessional e-consult 4.4% to 18.7%, $p < 0.0005$, McNemar). The majority selected access, continuity, and patient efficiency of care as benefits and data quality as a barrier. Telehealth was felt to be most helpful for conditions relying on history, external exam, and previously collected ancillary testing and not helpful for conditions requiring funduscopy exam.

Conclusions: Telehealth modality usage by neuro-ophthalmologists increased during the COVID-19 pandemic. Identified benefits have relevance both during and beyond COVID-19. Further work is needed to address barriers in their current and future states to maintain these modalities as viable care delivery options.

Keywords: telehealth, telemedicine, video visits, neuro-ophthalmology, pandemic

Introduction

Telehealth, the delivery of healthcare services where patients and providers are separated by distance and sometimes time, was historically a relatively small component of the entire healthcare delivery system. During the COVID-19 pandemic, when minimizing face-to-face contact became a primary strategy to reduce virus transmission, public health policy changes incentivized health care providers and systems to accelerate implementation and utilization of telehealth services.(1, 2) While there are some universal benefits and challenges to the utilization of telemedicine, there are also specialty-specific nuances.(3)

Before the COVID-19 pandemic, a minority of neuro-ophthalmologists utilized telehealth services to improve efficiency of and access to care. As part of the audience response questions at a recent telehealth symposium, planned pre-COVID and delivered on March 9, 2020 at the annual meeting of the North American Neuro-Ophthalmology Society (NANOS), 4% of attendees reported utilizing telehealth video visits and 21% reported performing remote interpretation of testing as part of their clinical practice(personal communication, T. Thebeau,

NANOS). The goal of this study is to characterize changes in telehealth utilization by neuro-ophthalmologists during the COVID-19 pandemic as well as perceived benefits, barriers, and utility. Select synchronous and asynchronous telehealth methodologies were considered (Box 1).

Methods

This study is a survey of neuro-ophthalmologists in independent clinical practice. Exclusion criteria were non-independent practice (e.g. resident, fellow-in-training, or student) or inactive clinical practice (e.g. retirement). The population was sampled in a non-random fashion through an e-mail sent to members of NANOS, the largest organization in the world for the clinical subspecialty of neuro-ophthalmology, with 16% of members residing outside the US. The study was deemed exempt by the Stanford Institutional Review Board. Participants were survey respondents who agreed to the parameters of the study and confirmed eligibility prior to proceeding with survey questions.

Survey content

Demographic questions included country of residence, state of residence for US participants, age category, gender, and board certification(s) (neuro-ophthalmologists train initially in neurology and/or ophthalmology). Clinical practice questions included practice setting, proportion of income derived from clinical revenue, and electronic medical record (EMR) utilization, all of which were categorical.

Participants were asked about use of synchronous (video visits) and asynchronous (remote interpretation of tests, second opinion reviews, e-consults) telehealth in their personal clinical practice before the COVID-19 pandemic (for US participants, prior to March 1, 2020), during the COVID-19 pandemic (March 1, 2020-through dates of survey May 1-15, 2020) and looking to the future. Telephone visits, virtual check-ins, and online patient portal communications were not included in this study.

Perceived benefits of synchronous telemedicine (video visits) were collected only from those who use it, while all participants were asked about barriers. Questions about benefits and barriers were presented as multiple-choice responses where multiple responses could be selected. Additional comments were collected as free text. Participants were asked for their opinion (helpful, somewhat helpful, not helpful) on the utility of video visits in the evaluation and management of select neuro-ophthalmic conditions. See online supplemental material for full survey questions (Supplement 1, <http://links.lww.com/WNO/A433>).

Survey delivery

The survey was implemented on an electronic, web-based platform (Survey Monkey, San Mateo, CA) and distributed via e-mail to members of NANOS using the organization's member listserv on May 1, 2020. Two additional reminders were sent. The survey was open from May 1-15, 2020. No identifying information was collected.

Analysis

Responses to categorical survey questions are reported as proportions. Responses to numerical responses are reported as mean and 95% confidence interval. Responses to free text questions are reported qualitatively. Country of residence was collapsed to US and non-US due to small numbers in most non-US countries. For US participants, states were grouped by US census regions (west, midwest, south, northeast) for reporting purposes.

Free-text comments for video platform use, benefits of video visits, and barriers to video visits were analyzed qualitatively through thematic grouping by the authors. For any comments on the same issue generated by multiple participants a new response category was generated for inclusion in quantitative analysis, noting that these are likely underestimates since they were not specifically queried as the other items were.

Utilization of different telehealth modalities was compared between US and non-US participants for both the pre-COVID and peri-COVID time frames using Chi Square test or Fisher's Exact test when a cell size was less than 10. Change in utilization of each telehealth modality was compared pre- and peri-COVID using McNemar's test. Ordinal age and clinical revenue categories were compared between users and non-users of peri-COVID synchronous telehealth using Mantel Haenszel test for trend. Clinical practice environment and board certification were compared between users and non-users of peri-COVID synchronous telehealth using Chi Square. Proportions of participants perceiving barriers to use of synchronous telemedicine were compared between users and non-users of synchronous telemedicine peri-COVID using Chi Square. $p < 0.05$ was the threshold for statistical significance. Statistical analysis was performed using SPSS 26 (IBM Inc.).

Results

The survey invitation was delivered by e-mail to 813 people (756 non-trainees). 214 responses were received. All confirmed independent practice and agreed to participation. 6 did not answer any questions beyond demographics and were excluded from further analysis. Thus, 208 respondents were included in the final analysis (Table 1). The participants were mostly from the US (81.3%, Figure 1), with fairly even age and gender distribution. The US/non-US distribution is similar to that for NANOS membership (84% US, 16% non-US). A recent comprehensive effort to count the number of neuro-ophthalmologists in the US identified 386 individuals in active clinical practice (187 clinical full time equivalents) (Personal communication, L. Frohman, NANOS). Thus we estimate that the US survey participants represent a 54% non-randomized sample of the population of US-practicing neuro-ophthalmologists.

Survey participants came from ophthalmology and neurology backgrounds (2:1). Multiple practice environments were represented with the majority in academic practice. Over half of participants derived more than 75% of their income from clinical revenue. Over 90% of participants reported using an EMR. About half had attended the telehealth symposium presented at the NANOS 2020 Annual Meeting on March 9, 2020. Among symposium attendees, two thirds reported participating in the audience response questions at the symposium.

Video visits

Prior to the COVID-19 pandemic, 3.9% (5.1% non-US, 3.6% US, $p=0.65$ Fisher's Exact) of participants used video visits; of those participants using video visits, 87.5% performed 1-10

video visits/week. 12.6% of non-users reported it was available to them. During the COVID-19 pandemic, 68.3% (38.5% non-US, 75.1% US, $p < 0.0005$, Chi Square) of participants used video visits ($p < 0.0005$ vs. pre-COVID, McNemar; Figure 2A). This figure included all pre-COVID users, and 66.8% pre-COVID non-users. Among non-users, it was available to 33.4%, of interest to 38%, and not of interest to 29%.

Video visit use peri-COVID was higher in younger survey participants (72.3% < 35 years old, 69.5% 35-44 years, 79.3% 45-54 years, 64% 55-64 years, 48.3% ≥ 65 years old, $p = 0.04$, Mantel-Haenszel test for trend) and among those with neurology board certification (84.3% vs. 59.2% ophthalmology, $p = 0.001$). Reasons for not adopting (available/not using, not available/interested, available/not interested) did not differ by board certification ($p = 0.88$, Chi Square). Use was higher in academic, private solo/group, and private hospital based practice than government-based practice (73.1%, 64.5%, 75.0% vs. 27.3%, $p = 0.01$ Chi Square). However, government-based practice participants were disproportionately outside the US (72.7%) which confounds this relationship. Use did not differ by proportion of revenue derived from clinical income ($p = 0.58$, Mantel-Haenszel).

The majority of peri-COVID video users (64%) saw 1-10 video visits/week. 27.4% saw 11-20 and 3 participants saw > 40 . Many platforms were used, led by EMR integration (41.5%), with Zoom, Doxy.me, Facetime, and Doximity all having > 10 users. Many users utilized more than one video platform.

More than 50% of peri-COVID video users selected benefits of improved access to care, continuity of care, and efficiency of care for the patient (Figure 3). Selected barriers were similar between peri-COVID video users and non-users except for reimbursement (45% users, 30% non-

users, $p=0.04$ Chi Square) and data quality (90% users, 83% non-users, $p=0.01$ Chi Square).

Data quality was the barrier selected by the largest proportion of both video users and non-users (Figure 4). Free-text comments identified multiple other barriers and disadvantages of telehealth that had not been included in the multiple-choice options (Table 2). Assuming continued telehealth reimbursement, 73.9% of users plan to continue video visits in their practice post public health emergency, while 17.6% are unsure.

Remote interpretation of tests

Prior to the COVID-19 pandemic, 26.7% of participants (28.7% US, 17.1% non-US, $p=0.21$, Fisher Exact) performed remote interpretation of tests with a mean of 4.7 /week (95% CI 3.4-6). Leading tests interpreted remotely were visual fields (87%) and OCT (79.6%). A minority remotely interpreted visual evoked potentials, electroretinography, and other testing. 17.8% of non-users preferred to see all patients having testing performed in person.

During the COVID-19 pandemic, 32.2% of survey participants (30.7% US, 38.9% non-US, $p=0.43$ Fisher Exact) performed remote testing interpretation ($p=0.09$ vs. pre-COVID, McNemar) with a mean of 5.3 /week (95% CI 3.8-6.9). 22.2% of pre-COVID users ceased peri-COVID, while 15.6% pre-COVID non-users adopted this practice (Figure 2B). One participant noted that in person testing was not being performed at their institution during the pandemic, which limited the opportunity. Ophthalmic imaging and visual fields remained the main types of tests being interpreted without seeing the patient. 84.6% of peri-COVID users plan to continue this practice, while 10.8% are unsure.

Asynchronous telehealth

Prior to the COVID-19 pandemic, 7.9% (6.6% US, 13.9% non-US, $p=0.17$ Fisher's Exact) and 4.4% (3.6% US, 8.3% non-US, $p=0.20$, Fisher's Exact) of participants used online second opinions and e-consults respectively. During COVID-19, 15.3% (14.4% US, 19.4% non-US, $p=0.45$ Fisher's Exact) of participants used online second opinions and 18.7% (18.6% US, 19.4% non-US, $p=1.0$, Fisher's Exact) used e-consults ($p=0.001$ second opinion, $p < 0.0005$ e-consult, vs. pre-COVID, McNemar, Figure 2C-D). A limitation to offering second opinion services was prohibition by the participant's institution (24% pre-COVID, 17.8% peri-COVID).

Perception of utility of synchronous telehealth (video visits) for select neuro-ophthalmic diseases

Some participants did not respond to questions of video visit utility for neuro-ophthalmic conditions (Table 3, Figure 5). The number of responses per condition varied between 120-125; proportions are reported according to the number of participants who selected a category for each condition. Conditions for which >50% of participants indicated video visits are helpful were: migraine with aura (65.0%), pituitary tumor with prior visual fields, and magnetic resonance imaging (MRI) results (62.1%). Conditions for which >50% of participants indicated that video visits are not helpful were non-arteritic anterior ischemic optic neuropathy (NAION) (63.4%), possible arteritic ischemic optic neuropathy (60.5%), and optic atrophy (70.8%).

Discussion

Telehealth modalities as a way to deliver neuro-ophthalmic care have been of interest in the profession for many years, as demonstrated by inclusion of symposia on this topic in the annual meetings of the North American Neuro-ophthalmology Society in 2013 and 2020.(4, 5) During the COVID-19 pandemic, interest in and utilization in this area increased throughout the medical profession and in neuro-ophthalmology.(3, 6) In this study, we demonstrate increased telehealth utilization by neuro-ophthalmologists during the COVID-19 pandemic. It builds upon prior single institution qualitative reports by quantifying utilization by providers in different practice environments both in and outside of the US. In addition, a higher-level of evidence for perceived benefits, barriers and utilization is provided, building on what has been previously stated by expert opinion.

Prior to COVID, the literature supported use of video visits and remote interpretation of testing for delivery of neuro-ophthalmic care.(7-9) However, participants both in and outside the US reported minimal use of video visits, on-line second opinions and e-consults and moderate use of remote testing interpretation pre-COVID, similar to what was reported using the audience response system at the 2020 NANOS telehealth symposium. Increased utilization peri-COVID occurred for all modalities, though this increase did not meet the threshold of statistical significance for remote interpretation of testing. Remote interpretation of testing was the only modality surveyed for which some participants ceased utilization peri-COVID. Based on a comment by one participant, this change is likely attributed to cessation of all in-person testing in some practice environments during COVID-19.

Increase in telehealth modality utilization occurred for both US and non-US participants.

Adoption was greatest in the younger survey respondents (<35 years old) which may reflect the greater numbers of digital natives within this age demographic.(10) Participants board-certified in neurology were higher adopters, in line with the more established role of synchronous telemedicine in neurology,(11) whereas ophthalmology telemedicine has traditionally focused more on remote imaging with automated interpretation.(12) There was no association between telehealth adoption and proportion of income derived from clinical revenue. While this lack of association may speak to altruistic motives for provision of care via telehealth modalities, such a conclusion is speculative since participants' motivations were not queried.

While this survey did not explore the full extent of telehealth's impact on patient care, participants endorsed many benefits. However, the relative merit of these benefits is situational, currently consisting of a global pandemic. It remains to be seen how these benefits are valued as traditional methods of care delivery resume. This benefit is particularly relevant to neuro-ophthalmology where improved patient access and increased efficiencies facilitated by telehealth may address shortfalls in provider access, who are concentrated in major cities and academic centers with an average wait time of 6 weeks, and over 20% of whom report wait times >3 months (personal communication of internal NANOS survey, M. Moster, NANOS).

Even among telehealth adopters, a high proportion of survey respondents identified data quality concerns including exam limitations as a significant barrier. This study did not ascertain which aspects of the exam posed the greatest barrier for telehealth implementation for our participants but based on participant responses regarding utility of telehealth in various conditions, we suspect that a primary challenge is obtaining a proper internal assessment of the eyes. Conditions for which video visits were deemed most helpful by participants were those primarily relying on

history or external exam to inform management, and those for whom vision measurement and or visualization of the posterior fundus was accomplished through ancillary testing. In contrast, video visits were deemed not helpful for conditions relying on an ophthalmoscopic finding for diagnosis. Of note, there was no consensus on the helpfulness of video visits for any condition, highlighting the heterogeneity of clinical practice style among neuro-ophthalmologists. Studies to validate data acquired through telehealth methods will be important to optimize telehealth care.

Differences in data acquired via telehealth and in-person visits, and the implications of basing management decisions on these, may be the cause of medical liability concerns.⁽¹³⁾ Prior to COVID, telemedicine coverage was available as part of liability plans. During this pandemic, new federal acts grant immunity from liability for healthcare workers acting in good faith. Protections at the state level vary with many states amending existing Good Samaritan statutes to provide broad civil immunity to health care professionals during the pandemic.⁽¹⁴⁾

In the US, telehealth reimbursement pre-COVID was restricted and disproportionately low compared to in-person visits, acting as a disincentive. Peri-COVID, CMS and many private insurers are covering telehealth visits at a level equivalent to in-person visits, effectively lowering this barrier.⁽¹⁵⁾ Future reimbursement regulations remain uncertain and continue to rapidly evolve. Regular provision of education regarding billing and coding for neuro-ophthalmologists will be essential to lower these barriers.

Beyond information technology infrastructure, implementation challenges of integrating video with in-person practice and lack of ancillary support for video visits in current practice models were identified by survey participants. These were noted to have negative impacts on provider

wellness. Ongoing use and further adoption of telehealth modalities will require organizations to continue providing and improving telehealth infrastructure. Protocols for incorporating non-provider staff into telehealth delivery, strategies to optimize patient selection, and scheduling to optimize both efficiency and outcomes and train trainees and providers will need to be expanded and refined.(16)

Even when presuming continued telehealth reimbursement, over one quarter of peri-COVID video visit users either plan to discontinue or remain uncertain regarding future video visit utilization following the end of the public health emergency. This survey did not elicit responses for participants' motives regarding their reluctance to continue telehealth services. Perhaps this reflects the favorable benefit:barrier ratio during this pandemic when traditional care delivery has not been possible; this ratio may revert post-COVID, resulting in increased barriers, both broadly (reimbursement, liability) and locally (practice delivery and efficiency).

The main limitations of this study relate to the survey methodology used.(17) Specifically, sampling and questionnaire development were done in an accelerated fashion due to the time sensitivity of the research question. By collecting responses during the COVID-19 pandemic, recall bias was likely minimized. The non-randomized sample with voluntary response likely biased towards overestimates of adoption given that those not interested likely had reduced rates of participation. Benefits and barriers not specifically queried (e.g. patient technology issues) were likely underestimated. There were areas of interest not captured by the survey including use of phone calls, online portal and e-mail communications with patients, remote interpretation of patient submitted data, and "virtual check-in" encounters, as well as stratifying benefits and barriers pre-COVID, peri-COVID, and post-COVID.

Conclusions

During a time of pandemic, neuro-ophthalmologists have rapidly adopted telehealth by 17-fold, providing patients with continued access to care and partially recovering revenue lost due to public policies restricting traditional in-person clinical practice patterns. Similar to many neurological subspecialties and in contrast to other ophthalmic subspecialties, neuro-ophthalmology is amenable to telehealth visits, which still allows for careful history taking and external examination to obtain actionable data for patient triage and management.⁽¹⁸⁾ The future of telehealth in neuro-ophthalmology remains uncertain. It is a promising modality for continued patient access and practice revenue, but barriers remain, including some that individual practitioners have limited control, such as federal and state policies on telehealth reimbursement and liability. Important areas for future study include the benefits of telehealth and patient access to neuro-ophthalmic care and strategies to address barriers under practitioners' control including data quality, practice efficiency, and patient selection.

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Box 1: Definitions of Telehealth Modalities Included in This Study

- *Video visits* are real-time (synchronous) encounters between a provider and a patient separated by location. The provider is able to obtain a history from the patient, perform external examination, and review previous clinical data, then counsel the patient and make decisions for management of the patient's care. Regulations on patient and provider location, medical liability, and billing and reimbursement have evolved rapidly during the pandemic.
- *Remote interpretation of testing* is where the patient obtains a test separately from a direct encounter with a provider; the provider interprets the test and provides a report to a referring provider separately. Relevant tests in neuro-ophthalmology including visual fields, ophthalmic photography and electrophysiology. Excluded from this definition is the CPT/HCPCS code G2010 (remote review/interpretation of remote patient data), in which an established patient submits a photo or video to a provider for review and

interpretation in order to determine whether or not the patient needs to be seen in person urgently.

- *Online second opinions* are asynchronous encounters between the provider and a new patient (ie, not previously seen in their in-person practice). Typically they are administered through a third party vendor, are initiated by the patient and consist of the provider's review of the patient's medical records and patient questions, followed by a written report to the patient.(19, 20)
- *E-consults* (or *interprofessional consults*) are asynchronous and sometimes synchronous encounters between the consulting provider and a referring provider about new or established patients without any communication with the patient. These consults are requested by the referring provider (with patient consent) and consist of review of the patient's medical records by the consulting provider and sometimes verbal discussion with the referring provider. The consulting provider then provides a written report to the referring physician. This definition is in accordance with the CPT/HCPCS codes 99446-99449 and 99451.

Table Legends:

Table 1: Description of Survey Participants

Table 2. Additional barriers to video telehealth generated by participants

Table 3: Perception of video telehealth utility in select neuro-ophthalmic conditions

Figure Legends:

Figure 1: Geographic Distribution of Survey Participants. Shade of world map (upper) and US map (lower) corresponds to number of participants from each country (upper) and US state (lower).

Figure 2: Changes in Neuro-ophthalmologist Telehealth Service Utilization During the COVID-19 Compared with Immediately Prior. Each pie represents self-reported status of survey participants with regards to utilization of telehealth modalities in their clinical practice peri-COVID according to pre-COVID utilization of different telehealth modalities (see box 1 for definitions): video visits (A), remote interpretation of ancillary testing (B), on-line second opinion (C), E-consult (D).

Figure 3: Benefits of Video Telehealth Selected by Neuro-ophthalmologists who are Users of Video Visits During COVID-19. Each bar is the proportion of peri-COVID video users (n = 141) who selected that item as a benefit to video telehealth. Benefits are ordered by proportion of peri-COVID video users selecting it.

Figure 4: Barriers to Video Telehealth Selected by Neuro-ophthalmologists according to Video Telehealth User Status During COVID-19. Each bar is the proportion of peri-COVID video users (black, n = 141) or non-users (grey, n = 66) who selected that item as a barrier to video telehealth. Patient technology barrier was not included in the survey choices, but was added to the analysis based on inclusion in comments by multiple participants. Barriers are ordered by proportion of peri-COVID video users selecting it.

Figure 5: Perception of Video Telehealth Utility in Select Neuro-Ophthalmic Conditions. Each stacked bar represents a condition, with colors representing proportion who gave a response for that condition (n=120-125) selecting that video telehealth is helpful (black), somewhat helpful (dark grey) or not helpful (light gray). Conditions are ordered by proportion selecting “helpful”.

Statement of Authorship

Category 1:

a) Conception and design

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Table 1: Description of Survey Participants

Variable	Distribution (n=208)
Country US Non-US Missing	169 (81.3%) 39 (18.8%) 0
Region (amongst US participants) West Midwest South Northeast Missing	34 (20.2%) 40 (23.8%) 50 (29.8%) 44 (26.2%) 1
Age (years) < 35 35-44 45-54 55-64 > 65 Missing	11 (5.3%) 59 (28.5%) 58 (28%) 50 (24%) 29 (14%) 1
Gender Female Male Other Missing	104 (50.2%) 103 (49.8%) 0 1
Board certification Ophthalmology Neurology Both Missing	130 (63.1%) 70 (34%) 5 (2.9%) 2
Practice setting Academic Government Private solo/group Private hospital Missing	119 (57.2%) 11 (5.3%) 62 (29.8%) 16 (7.7%) 0
Proportion of income derived from clinical revenue 0-25% 26-50% 51-75% > 75% Missing	40 (19.2%) 25 (12%) 33 (15.9%) 110 (52.8%) 0

Table 2. Additional barriers to video telehealth generated by participants

Wellness	<ul style="list-style-type: none"> - More physically draining than face-to-face to maintain engagement with patients
Technology	<ul style="list-style-type: none"> - Variable reliability of live video technologies - Video doesn't offer much more than phone for ophthalmology
Patient Buy-In	<ul style="list-style-type: none"> - Patient dissatisfaction with billing - Patients not convinced by telemedicine
Quality of Care	<ul style="list-style-type: none"> - Decreased precision and comprehensiveness of exam
Efficiency and Scheduling	<ul style="list-style-type: none"> - Learning curve for incorporating video telemedicine into daily clinic flow - Increased time to prepare for each visit - Video telemedicine visits may take extra time, resulting in decreased clinic volumes
Limited Support	<ul style="list-style-type: none"> - Not utilizing technicians or medical assistants for intake and questionnaires

ACCEPTED

Table 3: Perception of video telehealth utility in select neuro-ophthalmic conditions

Helpful	<ul style="list-style-type: none"> - Cranial nerve palsy(ies) - Migraine with aura - Optic neuritis with visual fields (VF), magnetic resonance imaging (MRI), and optic disc photos or optical coherence tomography (OCT) - Pituitary tumor with VF, MRI, OCT - Positive visual phenomenon - Pseudotumor cerebri/idiopathic intracranial hypertension with VF and optic disc photos or OCT
Somewhat Helpful	<ul style="list-style-type: none"> - Anisocoria - Binocular diplopia - Eye pain with normal eye exam - (Ocular) myasthenia gravis - Ptosis - Transient visual loss - Stable established patient with afferent visual pathway disease
Not Helpful	<ul style="list-style-type: none"> - Non-arteritic anterior ischemic optic neuropathy (NAION) - Possible arteritic ischemic optic neuropathy - Optic atrophy

ACCEPTED

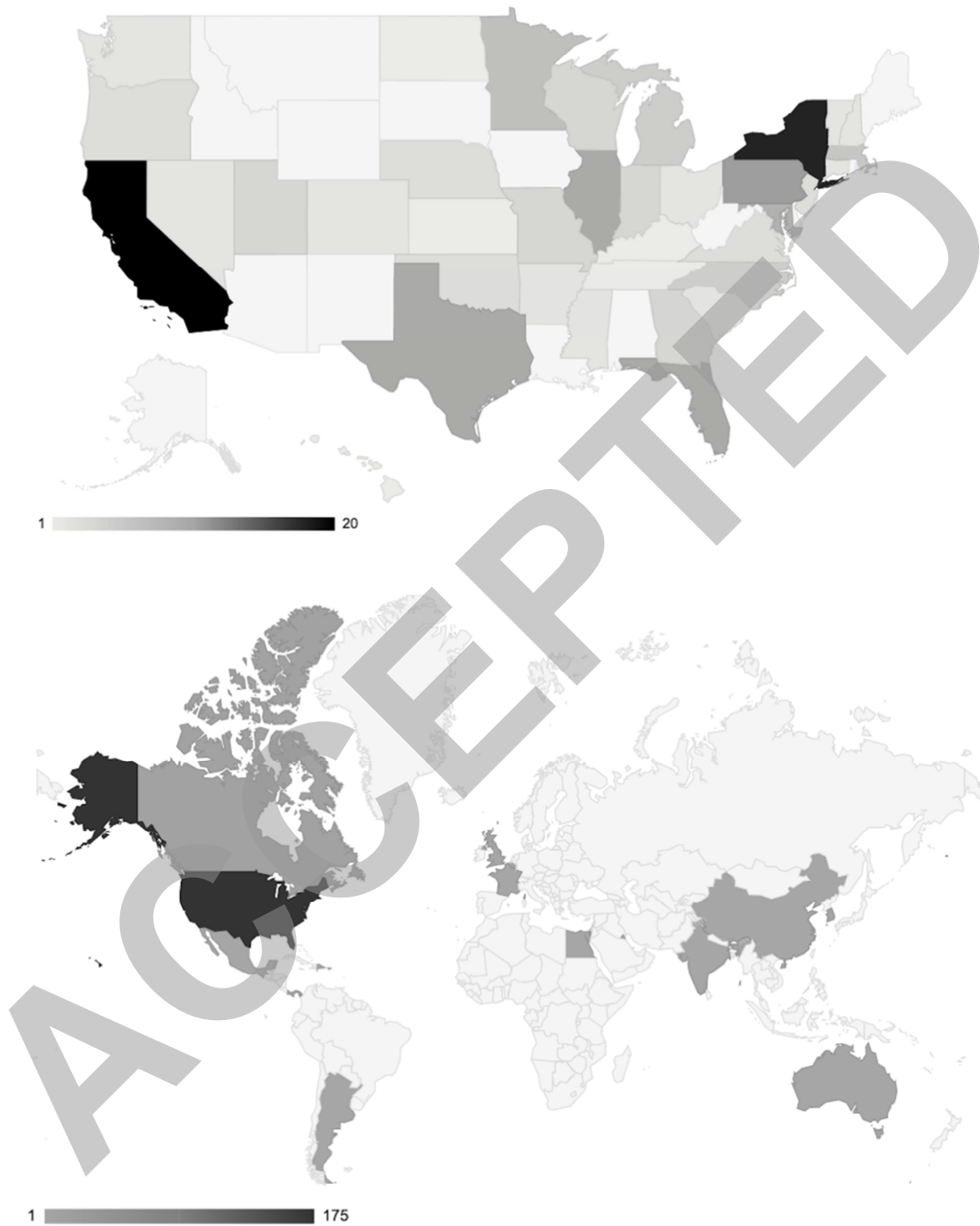


Figure 1

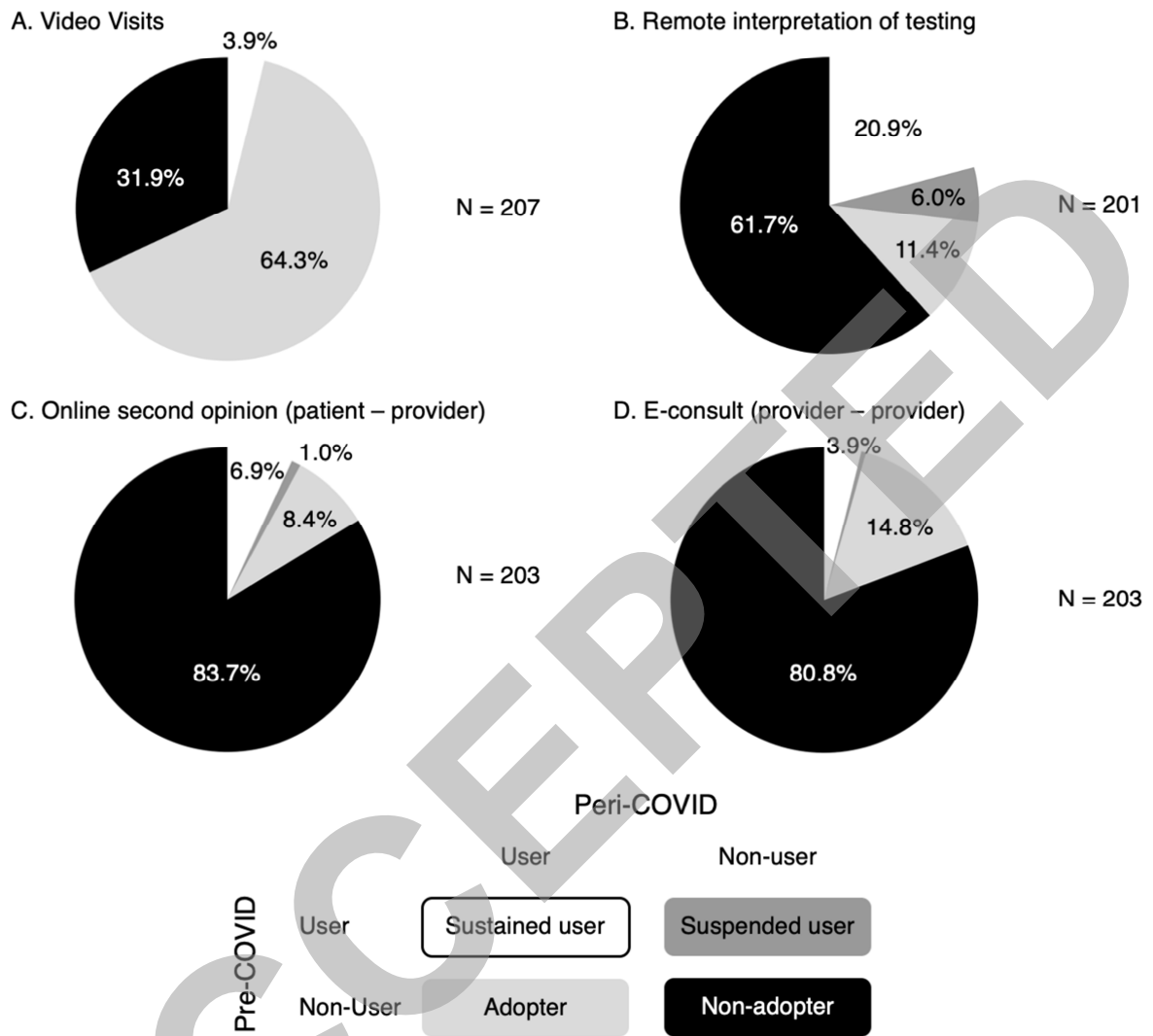


Figure 2

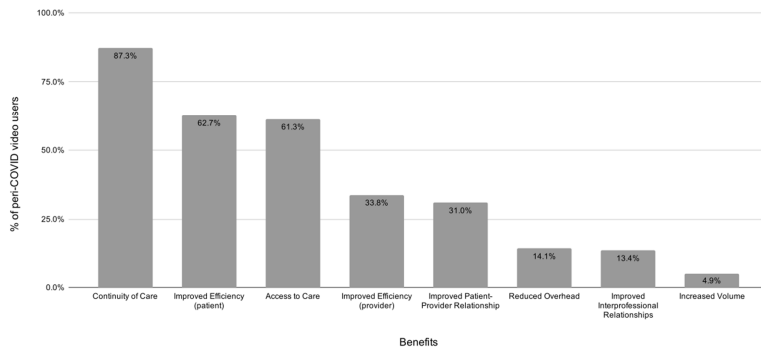


Figure 3

ACCEPTED

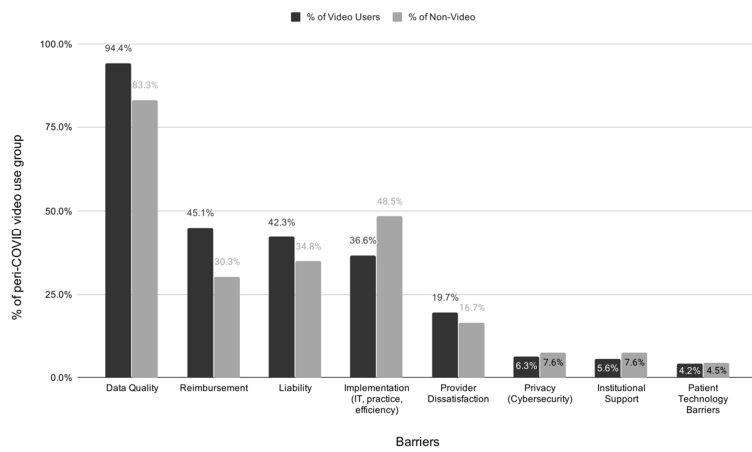


Figure 4

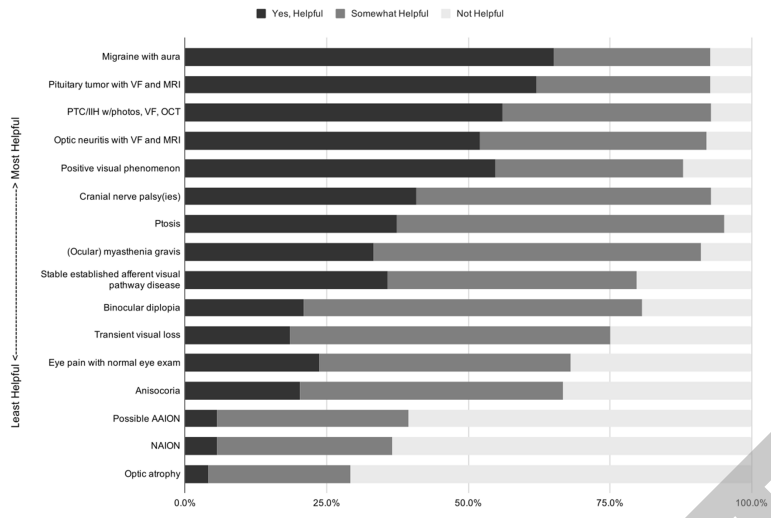


Figure 5

ACCEPTED