

individuals. The current study aims to assess the cost-effectiveness and clinical outcomes of a remote, neuropsychologist-led consultation model of concussion management. We hypothesized that this remote model would save patients both money and time, while also improving patient outcomes.

Participants and Methods: 604 high school concussion cases occurring between May 2019 and May 2022 were reviewed; 571 were included in the current analysis. The sample was 51% male with a mean age of 15.8 years (SD=1.32). All students took ImpACT tests following suspected concussions, with tests administered at the school by certified athletic trainers or nurses. Test results were electronically reviewed by the consulting neuropsychologist. Interpretations and recommendations were then sent via email to the school official. Cognitive recovery, defined as the days from the injury to the final ImpACT test, and incidence of repeat concussions, or concussions occurring within 3 months of a previous concussion, were used as indicators of patient outcomes. Financial burden was determined by calculating the round-trip distance in miles from the patient's school to the neuropsychologist's medical center, then multiplying this number by the 2022 standard mileage reimbursement rate of \$0.63/mile to determine the travel cost for a single consultation.

Results: The sample consisted of 571 individual concussion cases and 1,285 total ImpACT tests. An average of 2.25 tests were administered for each concussion case (SD=0.90), with an average of 18.47 days to the final test (SD=16.59). 8 concussions (1.4% of total concussions) occurred within 3 months of a previous injury. The distance from schools to the closest available neuropsychologist ranged from 2.4 to 102 miles. The remote nature of the consultation model allowed for patients to avoid up to 204 miles, or up to 4.5 hours, of driving for each consultation. Thus, patients saved anywhere from \$3.00 to \$127.50 in travel costs per consultation.

Conclusions: The remote nature of this consultation model yielded a similar cognitive recovery time to previous literature, indicating that it may be as effective as in-person consultation. Repeat concussions represented less than 1.5% of concussion cases, indicating that care was successful enough to prevent second concussions in the majority of the sample. The remote nature of the model also

saved patients time (up to 4.5 hours of driving) and money (up to \$127.50 in travel costs). Thus, a remote consultation model has the potential to increase access to first-rate concussion care in rural settings, while also being cost- and time-effective for patients.

Categories: Concussion/Mild TBI (Child)

Keyword 1: concussion/ mild traumatic brain injury

Keyword 2: teleneuropsychology

Keyword 3: sports-related neuropsychology

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70 Neuropsychological Consulting in Concussion Management: Remote Models Increase Access to Care

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Objective: Neuropsychological assessment is the cornerstone of concussion management, and the nature of its delivery can vary widely. While literature concerning post-concussion care typically revolves around in-person evaluation, the proliferation of computerized neuropsychological tests (CNTs) has allowed for some distance between concussion patients and the neuropsychologist. In the wake of a global pandemic, several papers describing the use of telehealth for concussion care have emerged; however, the small samples found in these studies may suggest that access to care remains an issue. Additionally, telehealth may not be a sustainable fee-for-service approach as CMS aims to curtail telehealth reimbursement for behavioral health clinicians. The objective of the present study is to describe a remote neuropsychological consultation model of concussion management and evaluate its productivity and impact in a rural setting.

Participants and Methods: In this model, a neuropsychologist based at an academic medical center in the northeastern United States

consulted to middle school, high school, and collegiate concussion management programs. Students typically were administered baseline ImPACT tests prior to participation in sports, and all students in the current sample completed post-injury ImPACT tests as part of return to play protocols. The neuropsychologist read test results through the test's online portal, then communicated interpretation and recommendations via email or phone to the school's representative (e.g., athletic trainer, athletic director, or school nurse). 837 unique concussions were recorded between 2019 and 2022. After removing abnormal cases (e.g., COVID-19 school closures, extended college breaks, non-concussions, and non-return to play decisions), 790 unique concussions (51.4% male) were included for analysis, with a mean age of 16.84 years (SD=2.17). Descriptive statistics were used to characterize the sample. **Results:** Across 790 unique concussions, 7 were middle school, 571 were high school, and 212 were college students. 1,750 total post-injury ImPACT tests were administered over the three-year period. Per concussion, an average of 2.22 (SD=0.90) tests were used. Average time to the last ImPACT given was 18.47 days (SD=16.59), with a median of 15 days. Ten concussions (1.27% of total concussions) occurred within 3 months of a previous injury. The distance between schools and the medical center ranged from 2.4 to 102 miles (M=60.29; SD=34.34).

Conclusions: The current study suggests that there is value in a remote model of neuropsychological consultation for concussion management. While telehealth offers a promising method of evaluation for concussion, it may be inaccessible and present reimbursement challenges. The remote consultation model described here increases access to care by eliminating in-person visits, which decreases demand for physical space at medical centers and increases access to rural populations with seemingly no negative effect on care. This consultation model also allows neuropsychologists working in concussion management more flexibility, potentially increasing the volume of cases they can assess. This program evaluation suggests remote models have merit, but replication studies in different regions of the country are needed.

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71 Feasibility of Virtual Useful Field of View Assessment and Equivalence with In-Person Administration Among Youth Clinically Recovered from Concussion and Uninjured Controls

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Objective: Youth athletes with concussion are at an increased risk of sustaining new concussions and orthopedic injuries after clearance for return-to-play. There are training programs, extensively studied in other patient populations, which can improve performance in cognitive domains that have been implicated in sport-related injury and re-injury after concussion (i.e., visual attention/processing speed). The Useful Field of View (UFOV) is one such training program, accompanied by a computerized adaptive assessment for evaluating response to training and maintenance in clinical trials. Remote UFOV assessment administration may help improve adherence, particularly in assessing long-term training effects. The current study explores the feasibility of virtual UFOV assessment and equivalence with in-person administration in youth clinically recovered from concussion and healthy controls. **Participants and Methods:** Participants included youth ages 10-18 enrolled in a longitudinal study examining neural recovery following medical clearance from concussion. UFOV was attempted in 61 participants (Mage=15.06; SD=2.00; n=19 in-person; n=42). Of these, 7 virtual administrations were discontinued due to computer limitations, and 1 in-person administration was excluded due to overall performance validity concerns. This resulted in a total sample of 53 participants (Mage=15.02, SD=2.00, 58.5% male; n=14 concussion, M_{days_since_injury}=272.64, SD=185.35;