

Analyzing 2,589 child neurology telehealth encounters necessitated by the COVID-19 pandemic

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Study objective

This study assessed the rapid implementation of child neurology telehealth outpatient care in response to the COVID-19 pandemic.

What is known and what this paper adds

In response to the COVID-19 pandemic, many clinical practices rapidly implemented telehealth outpatient services. This study provides insights into a large health system's implementation of telehealth in pediatric neurology.

Participants and setting

This study analyzed in-person and telehealth encounters including audio-video telemedicine encounters performed at the Division of Neurology of the Children's Hospital of Philadelphia. Telehealth encounters were implemented after all non-urgent in-person visits were suspended at the onset of the COVID-19 pandemic.

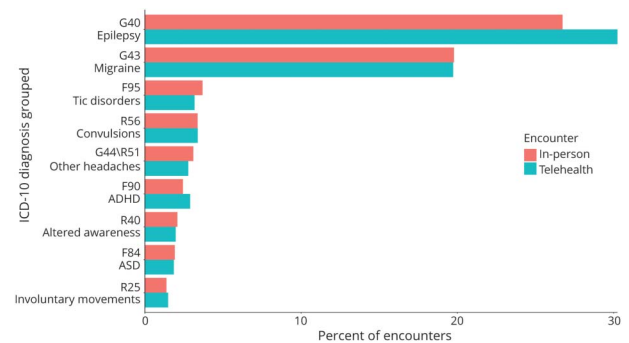
Design, size, and duration

This study compared 14,780 in-person visits between October 1, 2019 and March 15, 2020 and 2,589 telehealth encounters between March 16 and April 24, 2020. Most new and all established patients were scheduled for audio-video telemedicine encounters. Established patients who lacked access to telemedicine were scheduled for telephone encounters. Staff helped families access the patient portal required for telemedicine encounters. Provider questionnaires assessing provider satisfaction, follow-up plans using telemedicine, any technical issues, concerns requiring sooner inpatient assessment, and caregiver evaluation of the encounter were embedded in note templates and analyzed using a Natural Language Processing pipeline. Demographic information and diagnosis were extracted from the EMR and analyzed through the R analysis framework.

Primary outcome measures

The primary outcome measures were the distribution of demographic features and diagnosis before and after transition to telehealth, and the responses to provider questionnaires.

Figure Spectrum of diagnoses before and after transition to telehealth in response to the COVID-19 pandemic



Main results and the role of chance

There were no differences in patient age and major ICD-10 codes before and after transition to telehealth. Clinicians considered telemedicine satisfactory in 93% of encounters, recommended telemedicine for follow-up care for 89% of visits, and subsequent in-person assessment for 5%. There were technical challenges in 40% of the encounters. Parents/caregivers expressed interest in future telemedicine encounters in 86%. Participation in telemedicine compared to telephone encounters was less frequent among patients in racial or ethnic minority groups.

Bias, confounding, and other reasons for caution

The results were obtained within the setting of the COVID-19 pandemic and may not be applicable in a non-pandemic setting. The study was performed in a single large health care network. Provider questions used were not validated assessments of care effectiveness. These results do not yet offer insights into care outcomes.

Study funding/potential competing interests

This study received no funding. The authors report no competing interests. Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

A draft of the short-form article was written by M. Dalefield, a writer with Editage, a division of Cactus Communications. The corresponding author(s) of the full-length article and the journal editors edited and approved the final version.

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