



**Ontario  
Health**



# **Clinically Appropriate Use of Virtual Care in Outpatient Neurology**

Seizure/Epilepsy, Concussion, and Headache Types  
Guidance Reference Document

September 2023

# Acknowledgements

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*This document is intended to provide guidance for the use of virtual care in clinical practice in Ontario. Physicians seeking information on how to bill OHIP for virtual care services are advised to refer to the Health Insurance Act, the regulations thereunder, including the Schedule of Benefits for Physician Services or to contact the Ministry of Health.*

# 1 About this Document

Geography, climate, and resource availability vary throughout Ontario, affecting delivery and accessibility of neurology services. Before the COVID-19 pandemic, use of virtual care helped to address this impact; however, rapid uptake during the pandemic exposed many challenges to delivering virtual care within clinical neurology. This document, *Guidance for Clinically Appropriate Use of Virtual Care in Outpatient Neurology (Seizure/Epilepsy, Concussion, and Headache Types)*, is the product of the deliberations of an expert panel convened to provide advice to Ontario Health in decision-making around when virtual care is indicated and which modality (e.g., messaging, telephone, video) is appropriate. It acknowledges the need to offer virtual neurological care services in a clinically appropriate manner that meets the standard of care.

This guidance is intended to be specific to the delivery of outpatient virtual neurology care in the three stated areas (seizure/epilepsy, concussion, and headache types) and to supplement rather than replace any related legislation, regulation, college practice, and standards and policies, government directives, or public health guidance.<sup>1</sup>

You may need to adapt these guidelines to address unique patient, organizational or other local conditions. Further updates may be released as clinical evidence develops and as the longer-term strategy for virtual care in Ontario evolves.

The guidance recommendations in this document are current as of May 15, 2023.

## 1.1 Target Audience

The target audience for this guidance is the neurologist and health care team receiving referrals for patients with symptoms consistent with seizure/epilepsy, concussion, and headache types who are assessed, treated, and followed up in outpatient settings. The guidance may be applicable to other areas of neurology at the clinician's discretion.

## 1.2 Age Considerations

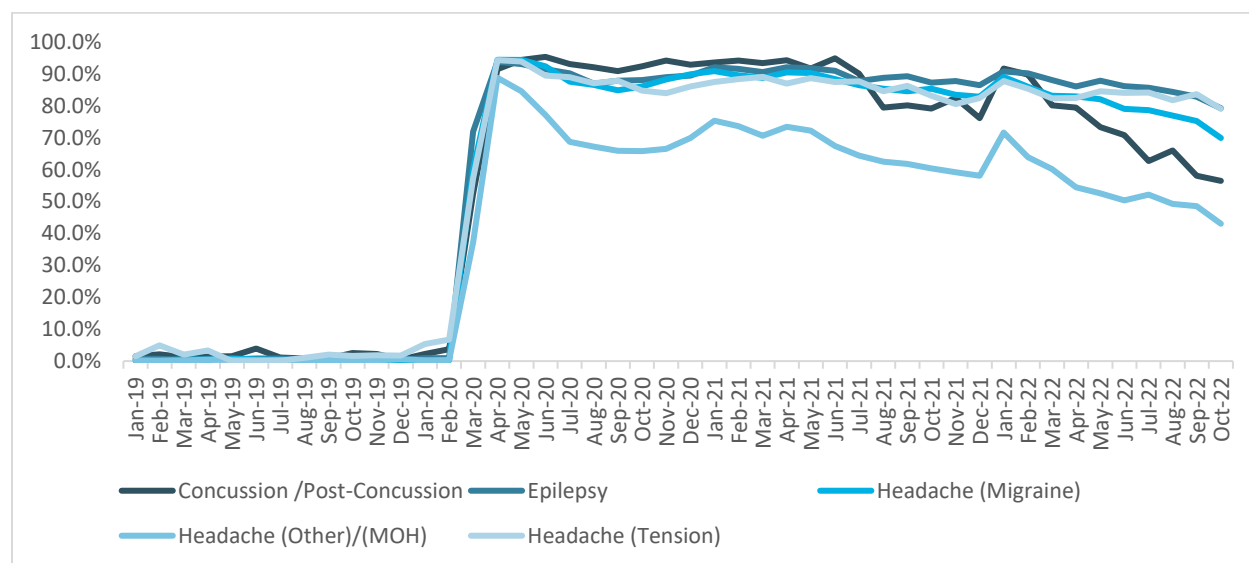
While this guidance applies to patients across the lifespan, there may be risk factors associated with certain age groups depending on the care context. Some risk factors have been discussed by the expert panel. Where these have been discussed and may be a consideration in making virtual care-related decisions, they will be addressed in this guidance. Other risk factors associated with certain age groups will need to be assessed by the clinician on a case-by-case basis.

## 2 Background

Over the course of the COVID-19 pandemic, the delivery of and access to virtual health care has grown significantly. Virtual care allows ambulatory neurological care to be offered in new and innovative ways, helping to address unmet needs of specific populations.<sup>2</sup>

### 2.1 Review of Relevant Data

To help better understand the use of virtual care in neurology in Ontario for the three specific areas of focus, available data were reviewed for relevant neurology visits in Ontario from January 2019 to October 2022. These showed that virtual visits for seizure/epilepsy, concussion, and headache types peaked in April 2020, with approximately 90% of visits being performed virtually. As of October 2022, 79% of neurology epilepsy and headache (tension type) visits and 57% of concussion/post-concussion visits were still being performed virtually (Figure 1).



**Figure 1: Neurology visits by diagnosis**

OHIP Claims Database linked to the Corporate Provider Database (CPDB) for claims between January 2019 to October 2022, and filtered for the following:

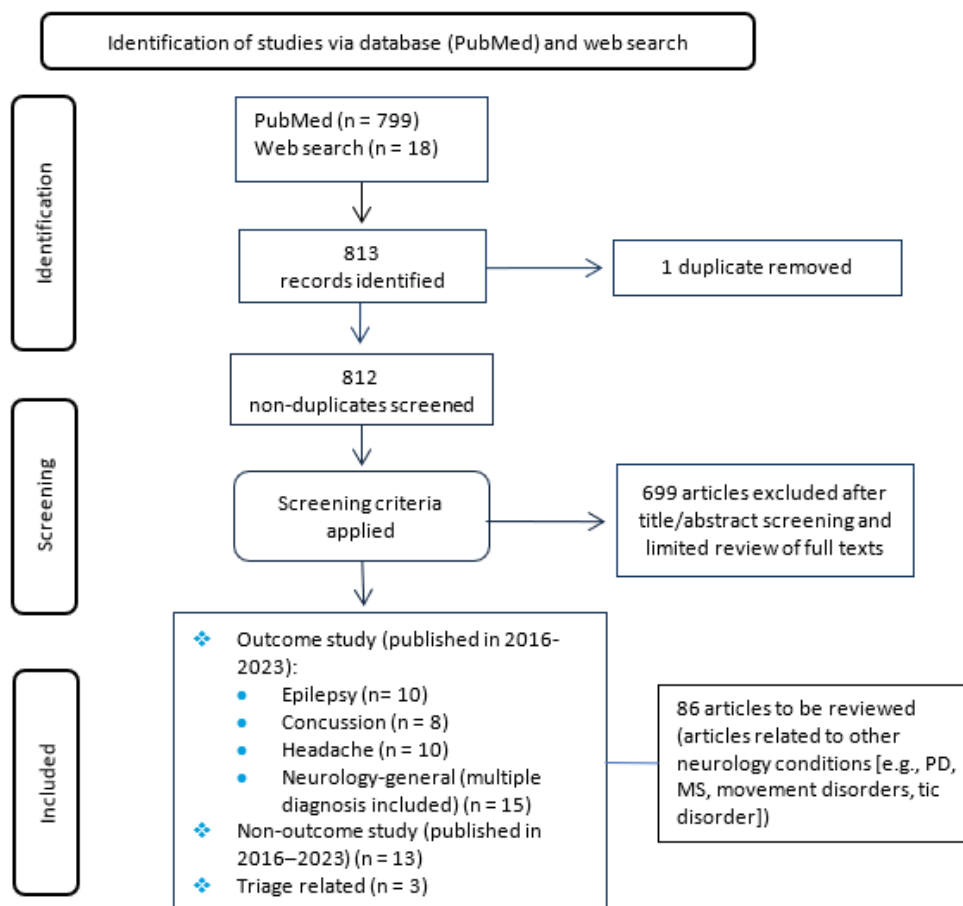
- **Include:** Specialty “18” (neurology); fee codes K080, K081, K083, K087, K088, K088, K089, K300, A185; diagnostic codes 345, 346, 307, 780, 850
- **Exclude:** non-Ontario residents, claims with fee paid is null or 0
- **Virtual visits** are defined as visits with the following fee codes: K080, K081, K083, K087, K088, K088, K089, K300, or have a service location of “OTN”

Abbreviation: MOH, medication-overuse headache.

These data show that virtual care remains highly utilized in neurology, as more than 50% of visits for the three areas of focus included in the dataset continued virtually through October 2022, despite increasingly relaxed COVID-19 public health measures. There is limited guidance and quality research to date on appropriate use of virtual care in ambulatory neurology practice settings.

### 2.1.1 Literature Review

Ontario Health conducted a review of the literature to better understand the role of virtual care in neurology, with a special focus on the three conditions/diagnoses of interest (seizures/epilepsy, concussion, and headache types). A total of 86 articles were reviewed, consisting of outcome and non-outcome studies and triage-related studies (Figure 2). Positive outcomes, including acceptability/feasibility of virtual care, patient satisfaction, clinician satisfaction, time- and cost-savings (patient perspective), and reduced wait times were reported in most studies across all conditions.<sup>3</sup> A few outcome studies within this review suggested neuromuscular disorders are more likely to require an in-person visit.<sup>3-5</sup> An additional outcome study also showed patients with headaches and suspected seizures were less likely to need reassessment or reinvestigation following virtual visits compared with other neurologic conditions (e.g., multiple sclerosis, functional neurological disorders).<sup>3,6</sup>



**Figure 2: PRISMA flow diagram – study selection process**

Abbreviations: PD, Parkinson’s disease; MS, multiple sclerosis.  
Source: Kim et al.<sup>3</sup> Reprinted with permission.

## 2.2 Review of Relevant Guidance

A rapid review of relevant guidance was conducted. In the process of conducting the review, it was evident that there is a lack of consensus regarding which complaints and neurological conditions were clinically appropriate for a virtual versus an in-person visit.

Some existing guidelines for virtual neurology care include the American Telemedicine Association Telestroke Guidelines<sup>7</sup> and the Canadian Medical Association (CMA) *Virtual Care Playbook* (hereafter the *Playbook*).<sup>8</sup> The American Telemedicine Association Telestroke Guidelines focus on recommendations for implementing virtual stroke assessment into an existing neurology practice.<sup>7</sup>

The CMA's *Playbook*<sup>8</sup> states:

Physician regulators all adhere to the same concept when it comes to virtual visits: a physician must not compromise the standard of care. That means that if a patient whom you see virtually provides a history that requires physical examination maneuvers that cannot be executed remotely, you must redirect the patient to an in-person assessment. (p. 7)

The *Playbook* has also listed recommendations for which issues can be safely assessed and treated virtually versus in-person. The *Playbook* states<sup>8</sup>:

In contrast, the problems that are currently **not amenable to virtual care** [emphasis added] include any new and significant emergency symptoms such as chest pain, shortness of breath **and loss of neurologic function** [emphasis added]. They also include ear pain, cough, abdominal/gastrointestinal symptoms, many musculoskeletal injuries or conditions and **most neurological symptoms** [emphasis added]. (p. 7)

In the view of the expert panel, this last excerpt from the *Playbook* lacks sufficient specificity to provide direction for neurological care through virtual modalities.

Virtual care continues to be widely used in neurology practice despite clinics reintroducing in-person care visits. There are no publications that specifically address decision-making around appropriateness of virtual care modalities in the neurology context at a provincial level.

## 2.3 The Role of the Expert Panel on the Clinically Appropriate Use of Virtual Care – Neurology

An expert panel was engaged to inform the development of this guidance. The expert panel comprised pediatric and adult neurologists and a neurology nurse practitioner.

The role of the expert panel was to provide advice on the contents of this guidance document, including focus, scope, concepts, and statements, using data and evidence from the literature and experiences from their own practices. The panel also advised on the dissemination of this guidance.

The expert panel participated in four 2-hour meetings and completed four post-meeting surveys to deliberate and reach an agreement on the guidance statements included in this document. The guidance recommendations in this document are current as of May 15, 2023.

## 2.4 Guiding Principles of the Expert Panel

The following guiding principles were agreed upon by the expert panel and were used as a framework in the development of this guidance.

This guidance on virtual delivery of neurological care will:

- Align with the Ministry’s transformation agenda focused on population health and advancement of integrated care delivery through Ontario Health Teams (OHTs)
- Be developed with a person-centred approach, involving both people requesting care and those delivering care
- Take an equity lens, with the understanding that constraints related to access exist in certain patient populations and geographic locations
- Acknowledge the role of clinician judgement in delivering care, given various clinical contexts
- Leverage, where reasonably practical, existing national or provincial-in-scope virtual care guidelines with which clinicians or organizations may be required to respect or comply
- Consider the practical application of integration into clinical practice and clinical information systems through strategic partnerships as foundational for the implementation/activation of the guidance

The guidance will not:

- Replace billing and payment rules outlined in the Schedule of Benefits or define which services are eligible to be delivered virtually
- Contradict policies or guidelines issued by regulatory bodies (e.g., [College of Physicians and Surgeons of Ontario Virtual Care Policy](#))

## 3 Key Concepts

This section of the document defines key concepts foundational to the structure and content of this guidance. This guidance is focused specifically on *clinically appropriate use* of virtual care, which involves the clinical decision-making process concerning which modalities of virtual care should be used when delivering virtual neurology services.

### 3.1 Clinical Appropriateness

The definition of “clinically appropriate use of virtual care” used in this document was adapted from that used in the *Clinically Appropriate Use of Virtual Care in Primary Care* reference document,<sup>9</sup> and was agreed upon by the expert panel for the purpose of this guidance to be as follows:

Clinically appropriate care is safe, timely, and effective care provided within the scope of practice of the practitioner in a setting or using a modality that permits appropriate clinical



assessment of presenting conditions and that is reasonable to the patient and practitioner. Person-centred care and equity considerations are critical to clinical appropriateness.

### 3.2 Virtual Care

The expert panel agreed to the definition of virtual care adapted from a discussion paper, “Virtual Care in Canada,”<sup>10</sup> presented at the Canadian Medical Association annual health summit, which took place in Toronto in August 2019. The definition of virtual care for this document as follows:

Virtual care is defined as any interaction between patients and/or members of their circle of care, occurring where the patients and/or members of their circle of care are not located in the same place, using any form of communication or information technologies, with the aim of facilitating or maximizing the quality and effectiveness of patient care.

### 3.3 Virtual Care Modalities

Virtual care modalities, for purposes of this guidance, include messaging, telephone, and video. It is acknowledged that apps to monitor certain conditions (e.g., headache trackers) may be useful in capturing information that may be relayed to a clinician before or at the time of a visit. These monitoring apps were not the focus of this guidance, nor are they addressed within this document. As new digital clinical-support tools emerge, they may play a more prominent role in the assessment, treatment, and monitoring of patients.

## 4 Guidance Recommendations

The following guidance statements were developed to assist clinicians in the process of determining when one might consider seeing a patient virtually versus in-person, considering factors other than the benefits of a physical neurological exam.

The following guidance statements assume the understanding that the standard of care provided during virtual neurology care should be no different than the standard of care provided during an in-person visit. All references to virtual neurology care refer to clinically appropriate care that is safe, equitable, and person-centred [refer to section 2.4]. In this document, the use of the term “clinicians” refers to “neurologist and other members of the healthcare team” (e.g., nurse, physician assistant).

### 4.1 Planning Virtual Neurology Care

#### 4.1.1 Assessing Patient Population Needs and Virtual Service Capacity

- a. Neurologists incorporating virtual care into their outpatient practice are familiar with the patient populations they serve, have reflected on their own ability to use each virtual care modality safely and effectively with these patient populations, and have equipped any members of their care team with the necessary information and tools to support virtual care.

- b. Neurologists have reflected on and determined factors that may or may not be conducive to the use of virtual care for each of the patient populations served. These factors may include but are not limited to diagnosis, age, geographical distribution, and socioeconomic status.

#### 4.1.2 Using Current Evidence

- a. Neurologists keep current with the evolving nature of virtual care delivery and apply current evidence/leading practices to their virtual neurology care practice.

### 4.2 Delivering Virtual Neurology Care

#### 4.2.1 Determining Virtual Modalities

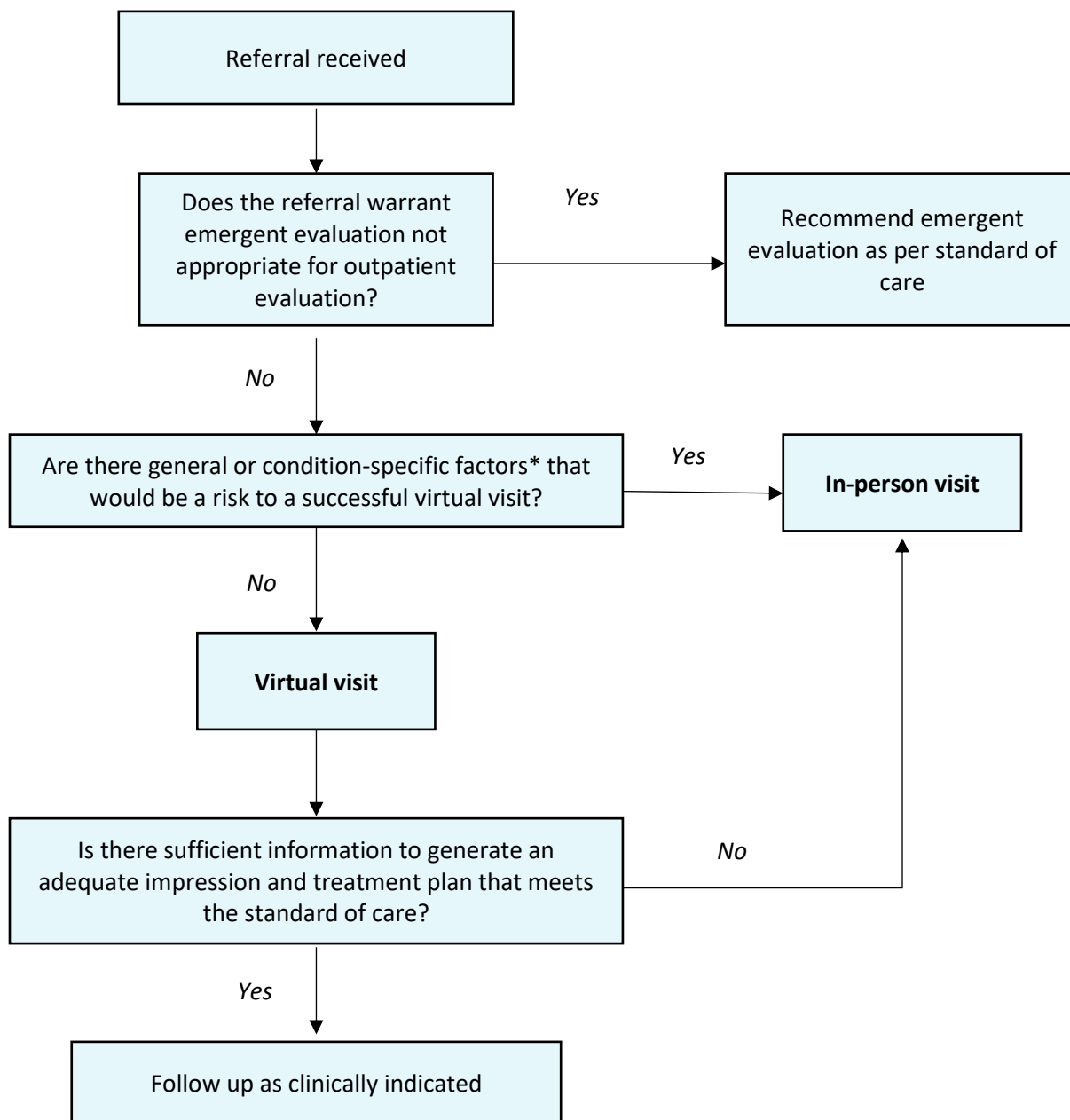
- a. Neurologists, the care team, or their delegates assess referrals for factors that may or may not be conducive to the use of virtual care. [Refer to section 5.2.3, “General and Condition-Specific Factors to Consider” below.]
- b. Neurologists and/or the health care team consider whether a patient’s request for virtual neurological care is aligned with the patient’s ability to receive virtual care services or whether any change/accommodation may be required to meet the request.
- c. Neurologists and/or the health care team consider whether a patient’s preferred modality is:
  - i. Suitable for the referral question or chief complaint (e.g., if the clinician determines neurological examination is required and aspects of the exam cannot be completed virtually, the patient may be scheduled for an in-person visit [note that this is not the only example])
  - ii. Consistent with the level of urgency deemed by the clinician (e.g., if the clinician anticipates the presenting concern/test result may need to be addressed urgently, a virtual visit may be able to address this more quickly than arranging an in-person interaction)
- d. If the initial assessment or consultation with a patient using a virtual modality is sufficient to generate an adequate impression and treatment plan that meets the standard of care, then a subsequent in-person visit to complete the assessment may not be required.

#### 4.2.3 General and Condition-Specific Factors to Consider

This guidance document recognizes the importance of considering both general and condition-specific factors when making clinical appropriateness–related decisions for virtual care in neurology. A flow diagram (Figure 3) has been developed to visually depict the relationships between these general and condition-specific factors, setting out an interplay between general and condition-specific influences.

Additionally, the statements that follow the flow diagram further elaborate on the general and condition-specific factors presented. These statements provide detailed insights into the significance and contributions of each factor, enabling a deeper understanding of their implications.

This combined approach equips clinicians with a resource that can inform decision-making, promote effective implementation, and foster better outcomes in the realm of virtual care in neurology.



**Figure 3: Specialist Referral Flow Diagram**

\*General and condition-specific factors are outlined in detail in section 4.2.3 which follows.

*Note:* This figure cannot necessarily address all clinical eventualities and, therefore, does not replace the need for clinicians to exercise clinical judgement when making clinical appropriateness decisions for use of virtual care.

# General Factors

For the purposes of this guidance, the expert panel's review was limited to three specific conditions (seizure/epilepsy, concussion, and headache). These general factors are to be considered for all three conditions; the condition-specific factors that follow are to be taken into consideration depending on the patients' neurological condition.

- a. General factors for consideration when reviewing referrals to determine whether virtual or in-person care is most appropriate include (but may not be limited to):
  - i. Do patient factors support a virtual option (e.g., stated preference for virtual care, barriers to mobility/travel, ability to effectively communicate virtually, support available if needed)?
  - ii. Is the referral suitable and sufficient (i.e., is the clinician comfortable with the information available and prior assessment/investigations)?
  - iii. Is an assessment using virtual means likely to yield the required clinical information (i.e., an in-person physical assessment is not indicated)?

# Condition-Specific Factors

The expert panel acknowledges that some of the following condition-specific recommendations may also be applicable to other neurological conditions at the discretion of the clinician's clinical judgement. Guidance related to other neurological conditions is likely to evolve over time. The considerations below are not exclusion criteria, but rather represent factors that need to be contemplated before making a decision about whether to see a patient in person or virtually.

- b. Condition-specific factors to consider when reviewing referrals to determine whether virtual or in-person care is most appropriate include (but may not be limited to):
  - i. Epilepsy special considerations:
    - Red flags or concerning clinical presentations in the context of epilepsy (examples include but are not limited to: an acute or evolving neurological or neurosurgical condition, intracranial infection/insult or raised intracranial pressure, electrolyte disturbance or toxic ingestion, concern for infantile spasm, age less than 6 months)
    - New/progressing focal neurological deficit evolving in the context of known seizure disorder or presentation of first seizure
    - Recent emergency department assessment/physical examination, which may guide determination of appropriateness of virtual visit

- ii. Headache-type special considerations:
  - Red flags or concerning clinical features (examples include but are not limited to: new onset or progressive headache, concern for raised intracranial pressure, focal neurological deficits/abnormal exam, headaches with transient hemiplegia, thunderclap headaches, age-related risk factors, head injury)
  - Recent neuroimaging, which may guide determination of appropriateness of virtual visit
  - Recent emergency department assessment/physical examination, which may guide determination of appropriateness of virtual visit
  
- iii. Concussion special considerations:
  - Red flags or clinical features that may raise concern for a more serious head injury, and thus prompt either emergent evaluation or in-person evaluation (examples include acuity, age, medications such as blood thinners, etiology of the head injury [fall, syncope, sport-related, etc.], past medical history, such as dementia)
  
  - Recent neuroimaging, which may guide determination of appropriateness of virtual visit
  
  - Recent emergency department assessment/physical examination, which may guide determination of appropriateness of virtual visit

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