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COVID-19 – A Guide to Rapid Implementation of Telehealth Services:

A Playbook for the Pediatric Gastroenterologist

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ABSTRACT

The COVID-19 pandemic has triggered an unprecedented expansion in telemedicine across the United States and world. In an effort to slow the spread of disease, particularly in high-risk healthcare settings, the United States Secretary of Health and Human Services announced a directive for broad and rapid implementation of telemedicine. Telemedicine capacity in the United States prior to the COVID-19 public health emergency was limited by inadequate equipment, high costs of training, restricted insurance contracting, low reimbursement, and software constraints. The telehealth mandate has lowered some of these barriers and facilitated rapid adaptation and expansion of telemedicine. Work completed now to establish best practices for telehealth in pediatric gastroenterology will form the foundation for future innovations in telehealth for children with digestive diseases beyond the COVID-19 pandemic. This paper is intended as a guide to the implementation of telehealth services for pediatric gastroenterologists during the COVID-19 public health emergency and beyond.

Key Words: coronavirus, pandemic, telemedicine, inflammatory bowel disease, intestinal failure

WHAT IS KNOWN / WHAT IS NEW

What is known:

- Telehealth on a relatively small scale increases access to care and satisfaction for some patients
- Prior telehealth practices have been limited by insurance and regulatory barriers
- General telehealth guidance provided from the American Academy of Pediatrics offers a basic framework

What is new:

- Unprecedented, large scale implementation of telehealth in response to the COVID-19 public health emergency
- Sweeping regulatory changes alter license recognition, enforcement of the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule, and reimbursement
- Best practice recommendations for introducing and expanding telehealth in pediatric gastroenterology

Introduction

The COVID-19 pandemic has triggered an unprecedented expansion in telemedicine across the United States and world[1]. In an effort to slow the spread of disease, particularly in high-risk healthcare settings, the United States Secretary of Health and Human Services announced a directive[2] for broad utilization of telemedicine[3]. This paper is intended as a guide to the rapid implementation of telehealth services for pediatric gastroenterologists.

The Institute of Medicine defines telemedicine as the use of electronic and telecommunications technologies to provide and support healthcare when distance separates the participants[4]. Telemedicine capacity in the United States prior to the COVID-19 pandemic was limited by inadequate equipment, high costs of training, restricted insurance contracting, low reimbursement, and software constraints[5]. The telehealth mandate has lowered some of these barriers (e.g., reimbursement) and necessitated adaptation for others (e.g., inadequate equipment) to facilitate the rapid expansion of telemedicine.

Some centers and providers have practiced telemedicine for several years within the confines of narrow regulations and limited financial incentives[6,7]. However, in the midst of the current COVID-19 public health emergency (COVID-19 PHE), several key developments have facilitated widespread adoption: (1) some states have loosened regulations, allowing physicians to provide medical care for patients across state lines regardless of licensure[8], (2) reimbursement for telehealth visits has been increased[9], and (3) enforcement of the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule for confidential communication has been relaxed to accommodate communication platforms that may not comply with HIPAA standards[10].

Medical providers are adapting quickly to the call for widespread use of telemedicine. General guidance for conducting telehealth visits is available from the American Academy of Pediatrics[11], the American Medical Association[12], and adult gastroenterology societies[13]. Our aim is to provide pediatric gastroenterology providers a relevant guide to implementation or expansion of telehealth practices during the COVID-19 PHE. The guide consists of five sections: (1) guiding principles, (2) planning and implementing visits, (3) documentation and billing, (4) adapting general telehealth principles to varied clinical settings and (5) specific applications of telehealth for children with inflammatory bowel disease (IBD) and intestinal failure (IF). Additionally, sample templates for documenting telehealth encounters are included as supplemental digital materials (Supplemental Digital Content, http://links.lww.com/MPG/B819).

1. Guiding Principles

During the COVID-19 PHE, Medicare/Medicaid recognizes three major categories of outpatient telehealth encounters:

- **Telehealth Visits:** A visit between a provider and new or established patient using audio *and* visual telecommunications.
- **Virtual Check-ins:** Brief communication between the provider and an established patient via telephone, audiovisual application, secure text messaging, email or a patient portal.
- **E-Visits:** Communication initiated by an established patient with the provider through an online patient portal.

The overarching aim of telemedicine interactions during COVID-19 PHE is to provide patients and families with supportive care while minimizing exposure to disease in traditional healthcare venues[14].

2.Planning and Implementing Visits

Planning and implementing telehealth visits can be divided into three parts: pre-visit, intra-visit and post-visit.

Pre-visit Phase

Teams must prepare to pivot in the face of worsening disease outbreak. As physicians and advanced practitioners face the possibilities of being called to the front lines or becoming patients themselves, team members must have a plan to care for each other's patients. Medical assistants and nurses may be redeployed to perform scheduling, technical support, and visit triage. Tasks to be accomplished in the pre-visit phase include:

Triage visit type: Standardize the process for redirecting in-person visits by creating clear guidelines for support staff to determine whether a patient's visit can be switched to a telehealth encounter. Without clear guidelines, a physician or nurse will need to individually review charts and triage patients, which adds significant time to the physician's role in the pre-visit phase. Standards of care for this process do not yet exist. Therefore, it may be reasonable in pediatric gastroenterology practice to conduct telehealth visits for all patients other than those with urgent, acute issues (e.g., gastrointestinal bleeding, intractable vomiting, severe malnutrition, liver disease, fever with a central line). Common chief complaints that are amenable to telehealth include constipation, gastroesophageal reflux disease, feeding disorders, and weight management. As an alternative to pre-visit triage, some centers convert all visits to telehealth visits with the option to refer patients for an urgent evaluation with an on-site provider as needed. This possibility should be discussed with patients when scheduling and performing telehealth visits.

Patient-facing logistics: Train schedulers and repurposed medical assistants, nurses, or medical student volunteers to guide patients and families through pre-visit preparation, including downloading telecommunications software, registering for the electronic patient portal, and confirming all available phone numbers, email addresses, and the preferred pharmacy. Provide pre-written scripts to the administrative team members conducting pre-visit preparation phone calls. A follow-up email with a standardized, easy-to-read tip sheet may be sent to the patient or family to re-iterate instructions discussed via phone. A follow-up call from the registration team 12-24 hours before the visit offers the opportunity to verify insurance and internet capabilities. A suggested workflow for support teams coordinating visits is provided in Figure 1a.

Patients who require additional planning and accommodations include those who need language translation services (spoken or sign language). Additionally, patients without access to internet, computer or smartphone are disadvantaged in their ability to participate in telehealth, accentuating healthcare disparities[15]. Patients without audiovisual capabilities should be offered telephone visits as an alternative.

Provider-facing logistics: All clinical team members who will interface with patients via telemedicine software require training. HIPAA-compliant audiovisual platforms include Epic Haiku/Canto, Avizia, Cisco Jabber, PolyCom, Vidyoconnect, Microsoft Teams, and Zoom Healthcare. In the time of relaxed HIPAA compliance standards, patient-facing conventional modalities may also be used (e.g., FaceTime, Facebook Messenger video chat, Google Hangout, Skype). However, care must be taken to inform the patients that these modalities may introduce additional privacy risks. Training methods for these applications may include synchronous video seminars, asynchronous recordings made by telemedicine-knowledgeable staff, and tip sheets with screen shots of implementation steps.

Practice groups would benefit from appointing a member as the telemedicine champion for outreach and support. Additionally, each location must ensure that all necessary equipment is available and in working order, including computers, internet access, microphones and/or headsets, front-facing lighting, functioning iOS or Android devices, and a second phone line if possible.

Intra-visit phase

Setting the stage: Telehealth visits can take place anywhere. The provider should make efforts to create a professional environment. This includes conducting visits in a private location with a door that closes, low ambient noise, and the camera at eye level against a neutral background. To enhance patient privacy, consider playing white noise outside of the room and hanging a sign indicating that you are in session. Professional attire and a photo ID within the camera field are essential.

Inviting multi-disciplinary partners in health to the visit: Telehealth visits provide the opportunity for collaboration with multidisciplinary teams located at various sites. These may include the primary GI provider, GI fellow, GI resident, dietician, nurse practitioner, nurse educator, social worker, patient, parents, home health aides, and nurses. Some platforms can accommodate multiple providers in the same visit. Plan ahead to coordinate the roles of each participant and identify a team leader to facilitate the visit.

Rooming the patient: Approximately 15-30 minutes before the telehealth visit, the registration team calls the patient to troubleshoot technical problems, ensure that all necessary software is downloaded, verify that both the child and parent/guardian will be present for the visit, confirm important information (e.g., demographics, insurance coverage, pharmacy, current medications,

medical history). It is also an opportunity to remind the patient to gather medicine containers to display later. The team should then invite the patient to enter the virtual waiting room. This simulates in-person workflows and allows the provider to focus on practicing medicine instead of waiting for the patient or providing technical support. A suggested workflow for the visit is outlined in Figure 1b.

Structuring the visit: Begin each visit with introductions of all who are present, including those who may not be visible on camera. Clarify each person's name and relationship to the patient. Provide verbal consent using a pre-written script (Supplemental Digital Content 1, http://links.lww.com/MPG/B819) to explain the risks and benefits of video visits including limited examinations and diagnostic testing capabilities. Obtain a back-up phone number for the patient or family and confirm location in case of the need to call for emergency services. In some states, it is necessary to confirm that the patient is present in a state where the physician is licensed, however laws are changing rapidly during the COVID-19 PHE.

History and physical: When performing medication reconciliation, take advantage of video technology to view each medication that the patient has in their possession and assess accuracy of the prescription and correct usage. Providers can visually examine patients and document overall appearance, mental status, activity level, body habitus, presence of scleral icterus, oropharynx, neck asymmetry or masses, cyanosis, respiratory effort, abdominal girth or distention, muscle wasting, extremity swelling or clubbing, skin rash or pallor, visible neurologic deficits, emotional affect, and presence of medical devices including alternative feeding devices and central venous catheters (Figure 2). Photos of specific areas of interest can be uploaded to some electronic medical record systems. Some providers find it helpful to watch as a parent or caregiver palpates a child's abdomen. Visual rectal exams may be performed but with careful

discussion of the sensitivity of visualizing this area over a video, especially if using an application that is not HIPAA-compliant. Unless critical to decision-making, providers may opt to defer this part of the exam until a live encounter can take place.

The risks and benefits of potential procedures including imaging and endoscopy should be discussed in the context of COVID-19. Any elective studies and procedures should be deferred to minimize the patient's risk of exposure to the virus and to conserve use of personal protective equipment (PPE). Provide patients with a timeline for anticipated scheduling if at all possible and ask them to contact you within a specific timeframe to follow up regarding scheduling for deferred testing and procedures.

Addressing technology challenges: Despite optimal preparation, technological difficulties will arise for providers and patients. Instruct staff to contact the patient and family prior to the visit to ensure they are prepared for the visit and instruct the patient to login to the visit 15 minutes prior to the appointment time. Empower patients to contact technical support (hospital technical support or readily accessible office staff trained in telehealth software usage) right away if issues arise. If there is no formal registration team available, consider assigning medical assistants or other ancillary staff to contact the patient and family 15-30 minutes prior to the visit to ensure they are prepared for the visit. If the pre-selected telemedicine software fails, present the patient with a back-up software option (e.g., Zoom, WhatsApp, FaceTime) but advise patients that these tools are not HIPAA-compliant. Verbal telephone communication may serve as an option of last resort and the difference should be reflected in billing.

Post-visit Phase

At the end of the visit, medical support staff can call patients to schedule follow-up visits, coordinate diagnostic testing, forward after-visit summaries, and clarify questions or discrepancies. This interaction provides an opportunity for the practice to survey patients for their feedback on the telehealth visit in order to improve the quality of care provided through this approach.

3. Documentation and Billing

Documentation and billing of telehealth visits can be conducted like standard in-person office visits with additional notation of how the care provided differs from that in an in-person visit. The limitations of telehealth visits and, in particular, the narrow scope of visual examinations should be acknowledged. Visual observations can be documented as part of the exam (Figure 2). Consent for virtual visits must be documented and can be obtained during the pre-visit phase by a registration team. Some patient portals include written consent forms to be signed before the video visit launches. Others obtain verbal consent at the start of the visit (script provided in Supplemental Digital Content 1, http://links.lww.com/MPG/B819) and include a written statement in the visit note indicating that verbal consent was obtained (Supplemental Digital Content 2, http://links.lww.com/MPG/B819). The decision to proceed with a telehealth encounter is ultimately a joint decision between the provider, patient, and family.

Billing expectations should be included with consent, indicating that the visit is a billable service with reimbursement determined by individual insurance carriers. Reimbursement for telehealth visits is equivalent to in-person encounters of the same complexity. Specific CPT codes and modifiers for telehealth are outlined in Table 1. The three major categories of outpatient

telehealth encounters recognized by Medicare/Medicaid are billable with unique CPT codes (Table 1a). Standard billing codes for in-person visits can be used to bill for telehealth encounters and will be reimbursed at the same level when specific modifiers are added to signify the use of telehealth technologies (Table 1b). Billing for time is an accepted practice and may be beneficial especially when a visit does not otherwise fulfill all E/M guidelines. A provider can bill only for face-to-face time and cannot include time setting up the technology as part of the visit length. The visit note should include a specific statement of the visit duration and the percentage of time that was spent on counseling and education (see Supplemental Digital Content 3, http://links.lww.com/MPG/B819). It is absolutely necessary for the child to be present for the visit. If this is not possible or if the audio-visual connection fails, then the encounter can be carried on as a telephone visit, which is billable at a lower rate.

4. Applying General Telehealth Principles to Specific Clinical Settings Including In-Hospital Consultations

In addition to addressing the need for social distancing to limit the spread of COVID-19 in the outpatient setting, telemedicine limits disease exposure and transmission and reduces PPE use in hospital settings. The principles described for general telehealth visits may be applied for pediatric gastroenterology consultations in the emergency department (ED) and inpatient settings. Collaboration with primary service teams is crucial to establish a successful care model for virtual consultations. Consulting teams should determine the necessity of in-person consultation based on their initial telehealth assessment. For common GI chief complaints (e.g., constipation, abdominal pain), a virtual consultation may replace in-person consultation or serve to determine the necessity of in-person physical examination. Teams requesting consultation may benefit from receiving a list of common GI presentations amenable to virtual consultation.

Some telehealth platforms (e.g., Avizia) are designed specifically for hospital-based encounters, however alternate platforms (e.g. FaceTime, Skype, Zoom) may be utilized during the COVID-19 PHE. Virtual in-hospital consultation may occur through two main modes of delivery: (1) direct to patient (i.e., to patient's personal smartphone), or (2) through a hospital-furnished telemedicine cart equipped with the preferred application. The communication method utilized must be documented as described above, acknowledging risk of privacy loss when applicable.

5. Telehealth for Specific Pediatric Populations with Chronic Digestive Diseases

Chronic pediatric digestive diseases that may be managed using telemedicine include chronic abdominal pain, celiac disease, chronic constipation, cyclic vomiting syndrome, dysphagia, eosinophilic esophagitis and gastroenteritis, food protein-induced enterocolitis, gastrostomy tube care, inflammatory bowel disease, intestinal failure, and irritable bowel syndrome. For the purposes of this guide, we have chosen to highlight telehealth experiences in inflammatory bowel disease and intestinal rehabilitation.

Inflammatory Bowel Disease

Inflammatory bowel disease (IBD), a chronic disease process requiring multidisciplinary care[16] and frequent monitoring[17], was ripe for application of telehealth prior to the COVID-19 PHE. IBD symptoms are debilitating[18] and increase healthcare utilization[19]. Increased monitoring and access to care can positively influence IBD outcomes[20]. Given that many children with subspecialty needs have limited access to appropriate care[21], telemedicine has the potential to revolutionize pediatric IBD management[22].

Use of telemedicine in IBD before the COVID-19 PHE has shown multiple benefits, including increased patient satisfaction, improved quality of life, and decreased clinic utilization[23,24,25].

Compared to standard of care, use of telemedicine in IBD has not been associated with differences in rates of hospital admission, clinical relapse or symptom severity[24,25]. Additionally, telemonitoring systems in IBD (e.g., TELE-IBD) that utilize remote tracking of clinical data have shown promise in improving clinical outcomes, specifically in reducing hospitalizations[26]. Given the overall benefits shown for patients with IBD enrolled in telemedicine and telemonitoring studies, the COVID-19 PHE provides additional impetus to implement these tools more broadly.

Intestinal Rehabilitation

The most successful outcomes from intestinal rehabilitation occur when patients with intestinal failure receive center-based care from a multidisciplinary team[27]. Given the limited number of specialized intestinal rehabilitation programs, they are often distant from the patient's home. Transitioning multi-provider visits to telehealth poses technical challenges but, once overcome, provides opportunities to conduct virtual home visits, educate multiple family and care team members simultaneously, and reduce risk of exposure for children who are medically complex. A pilot study performed from 2014-2016 by Raphael, et al., showed that brief telehealth visits that focused on education after initiation of home parenteral nutrition (PN) reduced rates of central line-associated bloodstream infections[7]. If implemented on a broader scale, this could have lasting impact to reduce morbidity and mortality associated with parenteral nutrition.

Prior to conducting a telehealth visit, patients and families should be prepared and consented. These visits provide the opportunity to assess the home environment and offer education about line care, PN administration, alternative feeding devices, and medication administration. Areas to focus on can include observing where PN is stored, visually reviewing medications, assessing whether patients have appropriate durable medical equipment and supplies, and supervising

dressing changes or feeding. Virtual examinations can provide important information about the central line site, alternative feeding devices, and diaper rash. Additionally, they can inform the provider by allowing observation of an abdominal exam performed by a parent, guardian or home health aide. These visits can provide an opportunity to meet home nurses, connect with multiple family members, and identify risks for re-admission and complications.

Telehealth visits can be combined with home care visits. The home care nurse can perform an observed or even a directed physical examination. Combining periodic telehealth visits with local assessment of patient weights and lab results can facilitate assessment of nutritional status and disease management.

Conclusion

Successful implementation of large-scale telemedicine depends upon mutual support for all team members and flexibility in roles and responsibilities. As the workflow evolves, methods established in some subspecialty clinics (e.g., intestinal rehabilitation and IBD) can be adapted to others including hepatology, nutrition, aerodigestive, and celiac disease. As the response to the current public health emergency evolves and, eventually, resolves, provisions made for billing, liability, and HIPAA protection for telehealth may change. However, the work that is done now to establish best practices for telehealth in pediatric gastroenterology will form the foundation for future innovations in telehealth for children with digestive diseases beyond the COVID-19 pandemic. For telehealth, the future is now.

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Figure 1: Sample workflows to guide coordination and implementation of telehealth visits. (1a) Administrative and medical support team workflow for telehealth visit coordination; (1b) Pediatric gastroenterology provider workflow for telehealth visit implementation

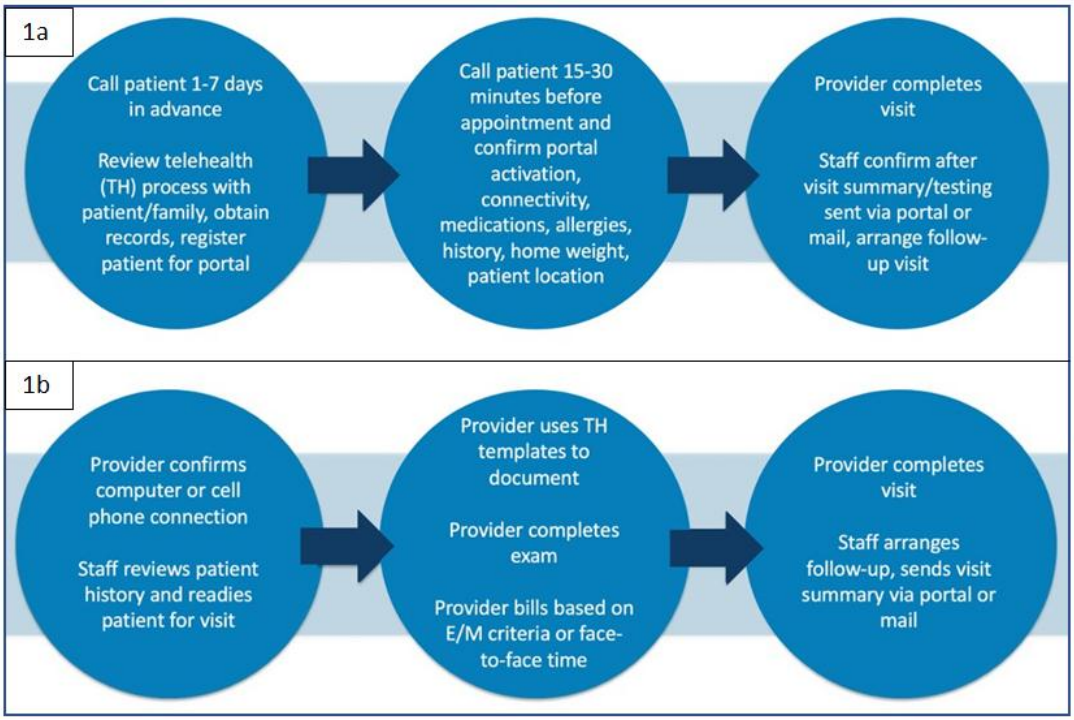

Figure 2: Sample telehealth visual examination

Visual Examination:

A visual physical examination (as appropriate and possible via telehealth technology) was performed by PROVIDER NAME and is described below. In order to assess specific exam elements, the bedside provider and/or a family member present during the exam assisted in order to accurately obtain relevant portions of the exam. The ability to complete a physical exam was limited. All documented exam was done visually unless noted as (reported).

General: well-appearing, no acute distress

Head: normocephalic, atraumatic, normal hair pattern

Eyes: conjunctivae clear

Ears: no external drainage

Oropharynx: lips normal, moist mucous membranes, no aphthous ulcers

Neck: no asymmetry, visual masses or scars

Resp: normal work of breathing, unlabored respirations, no retractions

Cardiovascular: no cyanosis

Abdomen: nondistended, (adult-assisted palpation in all 4 quadrants with no visible signs of pain)

Alternative feeding device: gastrostomy tube, ____Fr, ___cm, clean, dry and intact

Extremities: no obvious muscle wasting, no contractures, no swelling or clubbing

Skin: no visible rashes, no bruising

Neurological: alert, no focal visible deficits when moving facial muscles & extremities

Psychiatric: normal affect

Table 1: CPT Codes and Modifiers for Telehealth Services

(1a) A series of CPT codes were designed to bill specifically for telehealth encounters.

CPT Codes	**Description of Visit Type**	**Acceptable Technology**	**Providers**
99421-99423	E-visits: Online digital evaluation and management service, for an established patient, for up to 7 days, cumulative time during the 7 days; 5-10, 11-20 or ≥ 21 minutes.	Online patient portal	Physicians and advanced practitioners (NP or PA) for established patients
99441-99443	Virtual check-ins: Telephone evaluation and management to patient, parent or guardian not originating from a related E/M service within the previous 7 days nor leading to an E/M service or procedure within the next 24 hours or soonest available appointment; 5-10, 11-20 or ≥ 21 minutes of medical discussion	Telephone, secure text messaging, email, patient portal	Physicians and advanced practitioners (NP or PA) for established patients
98966-98968	Telephone assessment and management service provided to an established patient, parent or guardian not originating from a related assessment and management service within the previous seven days nor leading to a management service or procedure within the next 24 hours or soonest available appointment; 5-10, 11-20 or ≥ 21 minutes of medical discussion.	Telephone, secure text messaging, email, patient portal	Nonphysician healthcare provider

Adapted from Coding for COVID-19 and Non-Direct Care. American Academy of Pediatrics website. https://downloads.aap.org/AAP/PDF/COVID%202020.pdf. Accessed March 31, 2020.

(1b) Providers can add the following CPT modifiers to the billing codes typically used for standard in-person encounters.

CPT Modifier	**Description**	**When to Use it**
CR	Catastrophe/disaster related	Consider adding for any service provided during COVID-19 pandemic
95	Synchronous telemedicine service rendered via a real-time interactive audio and video telecommunications system	Add to any CPT code for any visit performed using audio and video services
52	Reduced services	Add to any visit that does not fulfill the full E/M requirements (i.e., exam could not be performed or visit discontinued early due to technical difficulties)