



Telemedicine in pediatrics: things to consider

Sandhya J. Kadam, MD¹, Archana Reddy Bongurala, MD²

¹Department of Pediatrics, Family HealthCare Network, Visalia, CA, USA; ²Department of Pediatrics, Omni Family Health, Bakersfield, CA, USA

Key message

This article highlights the benefits, challenges, and current significance of telemedicine. Future research is needed, primarily to address the challenges of optimizing the implementation of telehealth. To use telemedicine effectively and efficiently for the timely diagnosis and management of patients, an evaluation of current telemedicine practice is needed. Analysis of shortcomings and advantages can help enhance healthcare delivery to pediatric patients, making it more accessible for future use.

Telemedicine was part of healthcare for many years, but it represented only a small fraction of medical practice until the emergence of the coronavirus disease 2019 (COVID-19) pandemic. Since then, it has rapidly transformed to become an integral component of healthcare.

Children from newborn to adolescent years often need health checks and follow-ups. Telemedicine has the ability to connect patients remotely to their pediatricians for consultation and management, offering significant benefits along with some challenges. For the effective use of telemedicine, it is important to understand the benefits and challenges.

Telemedicine can be used as an interactive audio, video, or other digital technology by healthcare providers to deliver healthcare services. The COVID-19 pandemic accelerated the adoption of telemedicine as a crucial strategy to maintain patient access to care, particularly in the context of social distancing measures and healthcare system strain.¹⁾

In pediatrics, telemedicine is used across all specialties and all age groups, including neonatology, where it is rapidly advancing to facilitate access to care for various neonatal conditions, including neonatal resuscitation, as studied in Egypt based on 3 different studies.¹⁾

Benefits of telemedicine in pediatrics

Patients living in underserved remote areas may face obstacles to accessing healthcare. Single and working parents often find it difficult to balance their responsibilities and take children to in-person appointments. Telemedicine can provide a flexible option to consult a pediatrician, avoiding the need for time-consuming travel and childcare arrangements.²⁾

Telemedicine can be particularly helpful for routine check-ups and follow-up appointments, reducing the time spent in waiting rooms. Chronic conditions like asthma, epilepsy, and diabetes in children need regular follow-ups and continuity of care. Telemedicine visits can make it easier for pediatricians to provide ongoing care to support families with these chronic conditions.³⁾

Telemedicine can be useful in tracking labs and test results and keeping proper records to ensure patient's records are up to date and all conditions are fulfilled. By using virtual telemedicine visits, pediatricians can offer at-home care techniques to the patients and guardians, which can serve as great guidance tools. Parents can reach pediatricians quickly and easily via telemedicine to get the answers to their questions and concerns. This can help parents feel more comfortable with their child's condition and encourage parent's active involvement in treatment plans. Telemedicine can reduce overall healthcare costs by minimizing the need for emergency room visits and in-person consultations for non-urgent issues, ultimately benefiting the entire system.⁴⁾

Telemedicine can be used to consult specialists quickly and get expert advice for complex and rare conditions. Telemedicine virtual consultations can facilitate multidisciplinary care, improving diagnosis, treatment plans, and care coordination, resulting in better healthcare outcomes. Pediatric obesity is becoming a global problem, leading to physical and psychological complications in children. It is associated with weight stigma. Telemedicine may be a good option for diagnosis, management, and fol

Corresponding author: Sandhya J. Kadam, MD. Department of Pediatrics, Family HealthCare Network, 4121 W Elowin Court, Visalia, CA, USA

✉ Email: hellosandhya7@gmail.com, <https://orcid.org/0009-0000-2804-1742>

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low-ups of obesity. Telemedicine can be beneficial in obesity-related complications like obstructive sleep apnea (OSA). A review suggested the benefits of adopting a hybrid approach, integrating both in-office and virtual appointments, which could effectively meet the needs of children with OSA.⁵⁾

Challenges of telemedicine in pediatrics

Physical examination is critical to accurately diagnose conditions, particularly urgent conditions. However, telemedicine visits have limitations regarding physical examinations, such as palpation of lumps or tenderness, examination of rash, ear and joint examination, which may result in delayed or missed diagnosis.²⁾

Families in low-income areas may lack the required devices and a stable internet connection to participate in telemedicine. Poor internet connection and software glitches can also disrupt consultations and impact the quality of care. For families with limited technological literacy, telemedicine can be confusing, leading to frustration and delays in care.³⁾

Telemedicine cannot replace the need for a hands-on approach that can provide immediate diagnosis and intervention, especially in severe and complex urgent emergency illnesses. It may not be effective for managing conditions that require specialized equipment or procedures. Medical staff may need thorough training on using telehealth to establish efficient workflow. They may also need guidance on gathering information through virtual interviews without the usual auditory and visual cues present during in-person visits.⁴⁾

Staff may need education to maintain patient privacy and ethical standards. Extra cautions must be followed to protect the health information of children who are minors. Many telehealth platforms follow regulatory standards like Health Insurance Portability and Accountability Act, still, there could be a risk of breach of security,

especially if families use unsecured networks or devices. Families and children may struggle to develop rapport and connect with a pediatrician during telemedicine visits. This may hinder their comfort and trust in the pediatrician, especially younger children who are often excited to see pediatricians for their complementary goody bags and stickers. Patients may miss the personal warmth and thoroughness of in-person visits.⁵⁾ Please refer to Table 1 for the summary of the benefits and challenges of telemedicine.¹⁻⁵⁾

Pre-COVID-19 use of telemedicine was studied in one of the studies by Barnett et al.⁶⁾ from 2005–2017. Trends in telemedicine were studied in the large commercially insured population. Analyzing data from 2005 to 2017 across primary care, telemental health, and other services, the study found an increase in telemedicine utilization from 2005 to 2017, with annual visits surging from 206 to 202,374, representing an average annual growth rate of 49%. Telemental health and primary care dominated telemedicine use. While telemental health grew steadily, primary care telemedicine experienced rapid growth after 2016.⁶⁾

During the COVID-19 pandemic, another study was done by Karimi et al.⁷⁾ A national survey was conducted to study the trends in telehealth used in the year 2021. The survey found that telehealth utilization increased dramatically during the COVID-19 pandemic, with 23.1% of respondents reporting its use and access were inequitable. Disparities were evident in overall utilization and, particularly, in access to video telehealth, with lower rates among marginalized populations.

Further research may be useful to understand the changes and growth in telemedicine over time and to investigate the impact of telehealth on patient outcomes. Research can help to determine whether telemedicine can effectively address health disparities and improve access to care for underserved populations. Long-term studies are also necessary to assess the sustainability and long-term impact of telehealth on the healthcare system, including its cost-effectiveness and its role in improving the quality and efficiency of care delivery.

Table 1. Benefits and challenges of telemedicine¹⁻⁵⁾

Benefits	Challenges
Prompt access to care	Technological abilities
Flexibility and decreased wait times	Training
Increased time with the physician	Less reliable vital signs and physical exam
Cost-effectiveness and cost reduction	HIPAA-compliant and security concerns
Less risk of weight stigma, infections	Platforms – isolated treatment, integration issues
Improved satisfaction	Regulatory considerations
Quality of care	Not covered by all Insurances
Improve adherence	Limitations for personal interaction

Footnotes

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ORCID:

Sandhya J. Kadam  <https://orcid.org/0009-0000-2804-1742>

Archana Reddy Bongurala  <https://orcid.org/0009-0005-1687-0558>

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