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Opinion Article

Use of Telemedicine in Pediatric Chronic Disease Management During Pandemics

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DESCRIPTION

The COVID-19 pandemic has dramatically reshaped healthcare delivery across the globe, compelling a swift pivot from traditional in-person visits to telemedicine platforms. For pediatrics patients living with chronic diseases, this shift has brought both opportunities and challenges. Telemedicine the remote delivery of healthcare services *via* digital communication technologies has proven to be a crucial tool in maintaining continuity of care when in-person access was limited due to lockdowns, infection risk and overwhelmed health systems. Children with chronic illnesses such as asthma, diabetes, cystic fibrosis and congenital heart disease require regular monitoring and timely intervention to prevent complications and optimize health outcomes. The pandemic highlighted the vulnerabilities of this population, as delays in routine care could lead to exacerbations or hospitalizations. Telemedicine provided a means to connection, ensuring ongoing care while minimizing exposure to COVID-19.

In high-income countries, where infrastructure and technology access are relatively well-established, pediatrics chronic disease management through telemedicine expanded rapidly. Platforms offering video consultations, remote monitoring, digital symptom tracking and electronic prescription services became integral to clinical practice. This transformation not only sustained care during acute pandemic phases but also catalysed a broader revaluation of care models. Telemedicine offers several advantages in pediatrics chronic disease management. First, it reduces barriers related to transportation, geographic distance and caregiver work constraints. Families can attend appointments from home, eliminating travel time and associated costs, which is particularly beneficial for children with mobility issues or those living in remote areas. Second, telemedicine facilitates more frequent touchpoints, allowing clinicians to monitor symptoms, adjust treatments and provide education without waiting for in-person visits. This proactive engagement can improve disease control and empower families in self-management.

Additionally, telemedicine platforms can incorporate remote patient monitoring devices such as glucose meters, pulse oximeters, or spirometers that transmit data directly to providers. These tools enable objective assessment of disease status and timely interventions, fostering personalized care. For example, pediatrics patients with type 1 diabetes can upload continuous glucose monitoring data for virtual review, allowing dose adjustments without clinic visits. However, despite these benefits, several challenges must be acknowledged. Telemedicine cannot fully replace the comprehensive physical examination and diagnostic tests often necessary in chronic disease management. For complex cases requiring procedures, imaging, or laboratory evaluations, in-person visits remain indispensable. Furthermore, the digital divide poses a significant barrier; families without reliable internet access, adequate devices, or digital literacy may struggle to engage effectively with telehealth services, exacerbating health inequities.

Privacy and data security are additional concerns, particularly when managing sensitive pediatrics health information. Healthcare providers must ensure compliance with regulations such as HIPAA in the US or GDPR in Europe, safeguarding patient confidentiality in virtual settings. From a clinical workflow perspective, integrating telemedicine requires investment in training, infrastructure and scheduling adaptations. Providers must develop new communication skills and adjust clinical protocols to maximize virtual visit effectiveness. Moreover, reimbursement policies and licensing regulations, which vary across jurisdictions, influence telemedicine's sustainability beyond the pandemic.

Looking forward, the integration of telemedicine into pediatrics chronic disease management should be seen as complementary rather than substitutive. Hybrid models combining virtual and in-person care can optimize patient outcomes, balancing convenience and clinical thoroughness. High-income countries are well-positioned to lead in developing and evaluating these models, leveraging advanced technologies and robust healthcare systems. Importantly, ongoing research is needed to assess telemedicine's long-term impact on disease control, patient

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satisfaction, cost-effectiveness and health disparities. Stakeholder engagement including patients, families, clinicians and policymakers will be essential to customise telehealth services to pediatrics needs and preferences.

CONCLUSION

The COVID-19 pandemic accelerated the adoption of telemedicine as a important tool in managing pediatrics chronic diseases, ensuring continuity of care when traditional healthcare delivery was disrupted. In high-income countries, telemedicine demonstrated clear advantages by improving access, enhancing monitoring and empowering families in disease management. Nonetheless, telemedicine is not a panacea. Limitations related to clinical assessment, digital access, privacy and healthcare infrastructure must be addressed to harness its full potential. A hybrid approach that integrates virtual and face-to-face care is likely the most effective strategy for comprehensive pediatrics chronic disease management. As we emerge from the acute phases of the pandemic, it is imperative that healthcare systems solidify telemedicine's role through policy support, investment in technology and workforce training. Prioritizing equitable access and patient-centred design will ensure that telemedicine remains a valuable complement to traditional care, improving outcomes for children living with chronic illnesses. Ultimately, the lessons learned during the pandemic offer a unique opportunity to transform pediatrics healthcare delivery making it more accessible, flexible and responsive to the needs of children and their families, both during crises and in routine care.