Children's Hospital Los Angeles Takes a Patient Centered Approach to Enhancing Diabetes Care Management with Remote Glucose Monitoring Technology

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Executive Summary

Diabetes is a significant and growing health challenge in the pediatric population in the United States. Managing diabetes in children and adolescents is particularly challenging due to the need for constant monitoring, the risks of both hyperglycemia and hypoglycemia, and the complexities that arise during adolescence when self-management begins. In response to these challenges, Children's Hospital Los Angeles (CHLA) is piloting a remote glucose monitoring tool designed to enhance diabetes management and support patient-centered care. This white paper outlines the strategic implementation of this product at CHLA, with a focus on keeping the patient's journey at the forefront of this initiative. It explores how remote glucose monitoring devices can improve the quality of care by integrating seamlessly into the daily lives of pediatric patients with diabetes, allowing for real-time data sharing between patients and healthcare providers. This technology has the potential to improve glycemic control, reduce the burden of daily diabetes management, and ultimately enhance the overall quality of life for both patients and their families.

Introduction

Diabetes is a chronic condition that affects how the body regulates blood sugar and managing it can be especially challenging in pediatric populations. Type 1 diabetes, an autoimmune disorder, accounts for about 95% of pediatric diabetes cases, while Type 2 diabetes, often linked to obesity, is on the rise. These conditions require vigilant daily management to avoid complications such as high or low blood sugar levels, which could lead to emergency hospital visits or long-term health issues.

Currently, pediatric diabetes management typically involves patients or their families manually tracking blood glucose readings using a pen and paper or by calling CHLA's diabetes hotline to share updates with their care team. This process is cumbersome, prone to errors, and can result in delays in treatment adjustments, making it difficult to maintain optimal blood sugar levels.

Remote glucose monitoring platforms offer a solution to these challenges by allowing patients and care teams to share data asynchronously. With this technology, the care team has access to updated glucose levels between appointments, which allows for more timely interventions and reduces the burden on patients and families to manually report data. By improving the flow of information, Remote glucose monitoring products make diabetes management less stressful, allowing families to focus on their child's health while maintaining better glycemic control.

Patient Centric Approach

CHLA leans into a patient centric approach by piloting a remote glucose monitoring tool in three ways. First, a patient-centric approach is taken by examining the pediatric patient's journey in diabetes care. Secondly, the implementation team examines how A remote glucose monitor integrates into the patient's daily life while facilitating data communication between the patient's device and healthcare providers. Lastly, the implementation team at CHLA assesses how remote glucose monitors can be tailored to individual patient needs and ultimately improve a patient's and patient's family overall quality of life.

1. **Examining the Pediatric Patient's Journey in Diabetes Care -** The implementation team began by taking the time to learn the current state of diabetes management for pediatric patients. This included identifying key communication milestones between the care team and the family through process mapping. By understanding the critical points where care teams and families interact, the team could better support patients at the right moments—such as during diagnosis, when transitioning to self-management, or during times of critical care.
2. **Integrating a Remote Glucose Monitor into the Patient's Daily Life -** The team also examined how a remote glucose monitor could fit into the daily routine of pediatric patients and their families, focusing on making the data-sharing process as seamless as possible. This included determining the most appropriate methods of communication for different types of interactions. For example, text messages might be used for urgent alerts, while the patient portal could serve as a resource for routine check-ins. The team ensured that various communication methods—such as letters, videos, and website resources—were available to meet the diverse needs and preferences of families.
   ***** *A visual of the communication journey map can be found in the **Reference** section.*
3. **Tailoring a Remote Glucose Monitor to Individual Patient Needs -** Lastly, CHLA's care team works closely with individual patients and families to ensure that a remote glucose monitor is tailored to meet each patient's wellness goals. By offering continuous support through health education courses, the care team ensures that patients and families feel empowered to use the technology effectively. This personalized approach not only helps with diabetes management but also improves the overall quality of life for both patients and their families.

Remote glucose monitoring tools are designed to integrate into a patient's daily life to continue to support a patient centric approach to diabetes care management. Remote glucose monitoring technology can help improve glycemic control as well as reduce the burden of the daily management process by eliminating the need for patient families to manually record and track levels by pen and paper to report to the care team. A diabetes care system with remote monitoring capabilities allows for care teams at CHLA to review and assess glucose levels, enabling healthcare providers to track trends, make adjustments to treatment plans in real time, and provide timely interventions. This can be particularly beneficial for newly diagnosed or critically ill pediatric patients who may require more frequent adjustments to their care plan. By integrating this type of technology into a patient's daily life, patients and their families can experience reduced stress and anxiety related to diabetes management. The ability to share data with the healthcare team in real-time also fosters a more proactive approach to care, potentially preventing complications and improving long-term outcomes.

Implementation Strategy

There are 3 main parts of implementing the remote glucose monitoring technology at CHLA. The technology must be integrated with the hospital's existing electronic health records (EHR), the healthcare providers and care team must be trained on the technology, and patients as well as their families must be onboarded.

1. **System Integration -** A remote glucose monitor must be integrated with CHLA's existing EHR system to ensure that patient data flows smoothly into medical records. This integration is critical for maintaining up-to-date patient information, allowing healthcare providers to make timely, informed decisions about patient care.

2. **Training Healthcare Providers** – CHLA's healthcare providers and care teams will be trained on how to use the remote monitoring system effectively. This includes not only understanding the technology but also recognizing when and how to use it to enhance patient care. Training will also cover streamlining processes around data management and communication based on remote monitoring data.
3. **Onboarding Patients and Families -** Patients and their families will be introduced to the technology by a nurse or other member of the care team. This onboarding process will include answering any questions, providing instructions, and explaining what they can expect as part of their diabetes care when using A remote glucose monitor. Families will also receive guidance on how to integrate the tool into their daily diabetes management routine.

Challenges and Considerations

Implementing remote glucose monitoring technology at CHLA poses 3 major considerations:

1. **Technical and Logistical Challenges -** One of the primary technical considerations is integrating a remote glucose monitoring technology with the existing EHR system at CHLA. CHLA aims to ensure that the technology allows for patient data to flow seamlessly into the EHR system; this is critical for providing healthcare providers with real-time access to patient data.
2. **Data Privacy and Security -** As healthcare becomes more technologically advanced, CHLA wants to ensure patients and patient families that while these advancements are adopted, their privacy and personal health information will not be compromised or at risk. CHLA will seek to address concerns around patient data privacy by testing that security measures in place, and in compliance with healthcare regulations (i.e., HIPAA) before implementation and afterwards. Ensuring that patient data is securely transmitted, stored, and accessed is paramount and aligns with the hospital's goal of cultivating trust.
3. **Patient Engagement and Adherence** - We want to meet patients and their families where they are when it comes to navigating new technology and CHLA understands that not everyone is comfortable with using technology to help manage care for their child or themselves. Not only must patients and their families familiarize themselves with the technology with the support and education from a member of their care team, but they must also adhere to using the technology regularly by connecting the remote monitoring technology to the patient's glucose monitoring device. CHLA will need to develop strategies to encourage consistent use, such as reminder systems, or integrating the remote glucose monitoring technology into existing diabetes education programs.
4. **Clinician Engagement** – The implementation team found it essential to involve clinical leadership in the design of the workflow to ensure the technology's success. Clinical leaders played a critical role in advocating for the use of Glooko with patients and families, helping build trust in the system. Their involvement ensured that the workflow was patient-centered and aligned with existing practices.

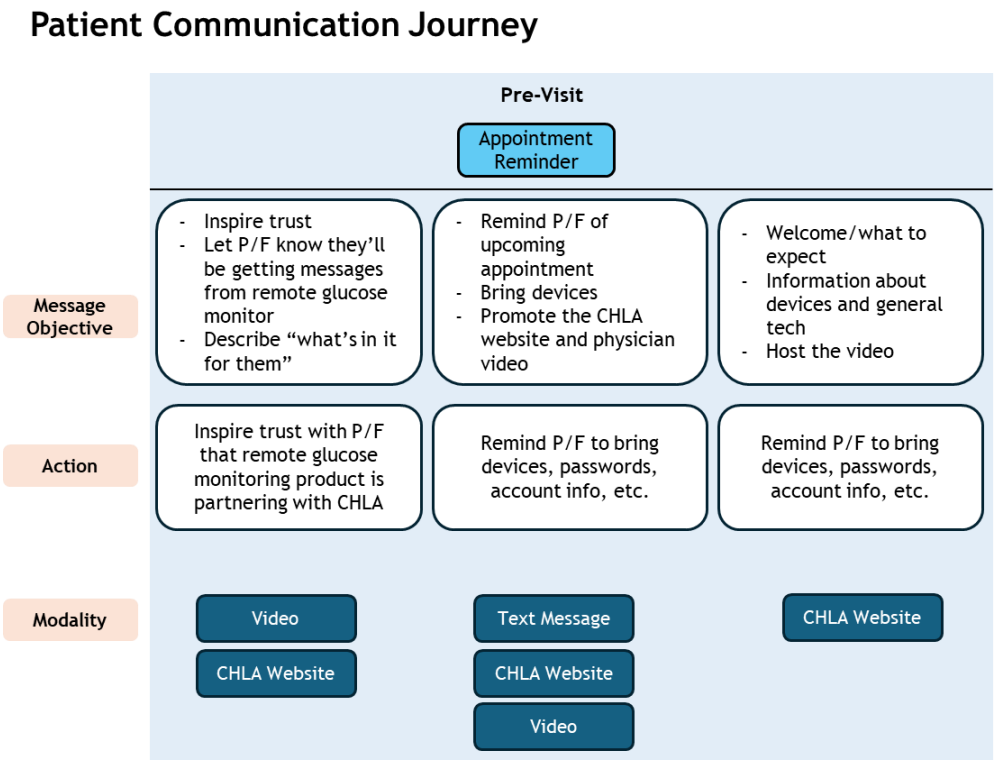
Conclusion

The implementation of a remote glucose monitoring system at CHLA represents a progressive approach to managing pediatric diabetes, emphasizing the hospital's commitment to patient-centered care by leveraging technological innovation. By integrating remote glucose monitoring into the daily lives of patients, CHLA aims to improve overall diabetes management, enhance glycemic control, and reduce the burden on patients and their families.

CHLA has identified key challenges associated with this type of implementation, from technical and logistical integration to ensuring patient and clinician engagement. Addressing these challenges will help ensure the technology not only meets clinical needs but also supports the long-term well-being of patients. This initiative serves as a model for how remote monitoring tools can be effectively integrated into patient care and offers valuable insights for future implementations in diabetes management and beyond. Ultimately, CHLA's pilot of this remote glucose monitoring system underscores its dedication to providing connected, informed, and patient-centered care.

As healthcare continues to evolve, CHLA's pilot of a remote glucose monitoring technology serves as a model for how remote monitoring tools can be effectively integrated into patient care, offering insights that can inform future implementations both within and beyond the field of diabetes management. Ultimately, this initiative underscores CHLA's dedication to leveraging technology while keeping the patient at the center of the way the hospital delivers care. Through this pilot and many alike, CHLA aims to drive forward the way for a more connected, informed, and patient-centered approach to healthcare delivery.

Reference



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