# PEDIATRIC CHRONIC CARE

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## Abstract

Pediatric chronic care refers to the longterm health management of children. This care includes a combination of medical, emotional, and social support to improve the child's quality of life. Narratives from studies or literature on chronic disease care can summarize important aspects of the management of these conditions, including challenges encountered, effect ive treatment strategies, the importance of family in volvement, and effects on child development and he alth.Pediatric chronic care involves the longterm management of children's diseases. These conditions often last a long time and require regular monitoring, treatment and support. Some childhood diseases include asthma, diabetes, cystic fibrosis, heart disease and autoimmune diseases.

#### Keywords

EHR, data analysis and visualization, mobile usage, security and privacy, artificial intelligence and ma chine learning.

### INTRODUCTION

Create an app for effective and efficient child care. Our app assists doctors, parents and caregivers and helps improve the management of diseases mostly seen in children. The Pediatric Chronic Care Clinic serves children with chronic or complex medical conditions. Pediatrics is nothing but treating children. Chronic pain is nothing but chronic or preexisting pain. Children with health problems may experience limited mobility, more frequent pain or discomfort, growth and development abnormalities, and more hospitalizations. The way of providing care for children's diseases continues far beyond medical intervention. It uses a multidisciplinary approach with doctors, specialists, nurses, physicians, social workers, and most importantly, the child's caregivers and family. The common goal is not only to treat symptoms, but to create an environment that supports children's growth, development and wellbeing despite the challenges of chronic pain. The foundation of caring for a child with a chronic illness is the awareness that it is all-encompassing. It includes medical management, psychological support, education and empowerment of children

and their caregivers. The purpose of this teaching is to recognize the interplay of physical, emotional and social aspects of a child's life, and therefore the aim is not only to control diseases but also to improve the child's quality of life. Therefore, pediatric palliative care is a comprehensive support system that is important for children with chronic diseases and their families.

#### LITERATURE REVIEW

Title: BrainTracker: an mHealth application for remote monitoring of children and comorbidities, 2020. Authors: Kevin Gary, Mason Cole, Dipak Purbey, Meng-Jung Lin, Krishnakantha, Jayashree, Chandrashekhar. Journal/Conference: **IEE** Е Publisher. Version 2020. Pros: We created a mobile health application with functions and features that target the activities where sick children are most at risk. Disadvantages: a. Not all patients have access to smartphones or the internet, which can create health problems. Title: Integration of patient daily life assessment into pediatric cancer care: a randomized controlled trial, 2018. Author: Udaya Lakshmi, Mathewhong, Laurenw ilco.Journal/Conference: IEEE Publisher. It was published in 2018. advantage:. Previous studies have focused on capturing physician-defined, patientgeriatric generated data in oncology care. Disadvantages: The information patients enter may not be accurate or complete, which can lead to incorrect treatment decisions. Title: Mobile therapy

for toxicity using near-field assessment communication technology to treat pediatric oncology patients, 2015. Authors: Katharina Duregger, Dieter Hayn, Jurgen Morak, Ruth Ladenstein Schreier. and Günter Journal/Conference: IEEE Publisher. It was published in 2015. It was published in 2015. .Advantages: Existing telephone systems for elderly chronic patients [13-15] have been expanded and modified to meet the needs of the oncology patient environment. Downside: Uncertainty around chronic illness can be stressful for children and their families.

#### **EXISTING SYSTEM**

In the current field of pediatric disease care, many systems and procedures have been developed to meet the needs of children with chronic diseases. These systems are versatile and designed to provide comprehensive care, taking into account the unique challenges faced by young patients and their families. The fundamental basis of child care is the idea of the hospital. The hospital model emphasizes an integrated, family-centered continuum of care. Participates with the primary care provider in monitoring and coordinating all aspects of the child's health, including preventive services, treatment planning and referrals to specialists, and specialized treatment as needed. This approach provides uninterrupted care, leading to better management of conditions chronic and improved health.Multidisciplinary teams bring together many medical professionals, including doctors, nurses,

physicians, psychiatrists, psychologists and more, to play an important role in treating children's illnesses. Workers and doctors. These groups work together to meet children's diverse needs. This holistic decision addresses not only medical but also psychological and developmental needs, providing greater support for children and their families. Telemedicine and remote care have become important tools in pediatric care, especially for patients who live in remote areas or have limited mobility. This technology allows doctors to monitor patients' health, provide counseling, and provide education and support to families, increasing access to specialized care and improving overall care. However, despite these advances, challenges remain in current systems. The transition from pediatric to adult care has significant consequences and often results in disruptions in continuity of care and adherence to treatment plans. Additionally, inequity in access to care resulting from health, geographic, or cultural barriers remains a significant problem that must be addressed to ensure that all children with chronic illnesses receive equal care. Solving these problems requires a multifaceted approach that includes not only doctors but also policy makers, educators, community organizations, and the family itself. By focusing on improving coordination, access, and continuity of care while taking into account the child's needs, current child care systems can be enhanced and improved, ultimately leading to better

outcomes and quality of life for these young patients.

#### PROPOSED METHOD

Appointment scheduling:Includes scheduling for doctor appointments and follow-up visits, as well as automatic medication refills.

Medication Management: Assist with medication supplementation, track medication supplementation to follow correct treatment.

Secure Health Records: Allows you to control medical records or health records, reports to ensure that only trusted people (such as doctors) can access them.Symptom Tracking: Track how you feel and any changes in your body; Record events that occur, for example, when you experience symptoms of pain or other health problems. Emergency Assistance: Get fast help when you are in a serious and unexpected situation, such as something bad has happened, and you need help immediately. Health and Employment Services: Apply a patient-centered approach to clinical, social and emotional support, with personalized care plans developed in collaboration with the family and multidisciplinary team. Transitional and Continuity Services: Develop transition plans and care strategies primarily to ensure continued transition from child care to adult care and to prevent treatment and support disparities.

## **METHODOLOGY**

Child care requires a comprehensive, multidisciplinary approach to meet the long-term medical, developmental and psychological needs of children with health problems. An important part of

this approach involves a patient approach that recognizes the unique needs of each child and their family. First of all, it is important to establish a good relationship between the healthcare team, the child and his family. This includes effective communication, building trust and shared decision-making. Clinicians should include parents or caregivers in the care plan to ensure they understand the child's condition, treatment options, and ways to manage the child's health at home.

In addition, the care of children's illnesses often involves specialists, including physicians, nurses, physicians, psychologists, and social workers. These professionals work together to develop a care plan tailored to the child's unique needs. Regular multidisciplinary discussions and monitoring of these professional collaborations are essential to ensure consistency and consistency. Another important factor is the importance of safety management and preventive maintenance. This includes regular check-ups, screenings and tests to monitor your child's health, detect potential problems and intervene early to avoid problems. Educating and supporting children and families on drug management, lifestyle changes and coping strategies is an important part of this approach. In addition, the child's development and well-being should also be taken into account in nursing care for children. Access to resources such as psychosocial support, counseling and groups, or community services can impact a child's quality of life and overall health.

Finally, the transition from pediatric to geriatric care is an important step for young people with chronic diseases. A flexible transition plan is essential to prepare children and families for this change in providers and environments. This includes educating young people about their condition, improving self-management, and ensuring continuity of care during transitions.

Ultimately, an approach to child care integrates patient work, multidisciplinary integration, emotional management, motivational brain and change with the goal of optimizing the health and well-being of children with chronic diseases. improving long-term outcomes.

### RESULT AND CONCLUSION

The success of child care depends not only on the treatment, but also on the health and quality of life it provides for children and their families. When implemented well, this approach provides many important benefits. First, it improves families' sense of support and trust as they become involved in the management of their child's illness. Education and support help them cope with the complexities of the disease and its treatment, resulting in adherence to care plans and better health for their children.

Also an effective way to care for children, often reducing hospital and emergency room visits. With preventive care, regular check-ups and early intervention, the potential for complications or serious illness can be minimized, thus reducing the need for emergency medical attention.

In addition, this approach often affects children's development, thinking and health. It helps children live fulfilling lives by addressing the medical and psychological consequences of chronic diseases. Access to mental health support, education, and community services can help improve the overall quality of life of children and their families.

In conclusion, care of pediatric diseases is not limited to medical management only; It incorporates a comprehensive, patient-centered approach that covers all aspects of the child's life. Used carefully, this approach can improve health outcomes, reduce healthcare utilization, improve quality of life, and improve the overall health of children with chronic diseases and their families. Continued progress in this area is important to further develop strategies a11 and ensure that children receive the comprehensive care they deserve.



Fig.1 Output

### **OUTCOMES AND FUTURE WORK**

The benefits of pediatric cancer care continue to increase thanks to advances in medical knowledge and technology and increased understanding of the needs of children with chronic diseases. Continuous efforts in this field have yielded great results. One of the main benefits is improving the long-term health of children with chronic diseases. By focusing on self-care plans, early intervention, and prevention, doctors can often reduce the progression of the disease and the impact of its complications, leading to better prospects and longer survival. Another major benefit is the increased importance of patient and family care. Given the important role of families in managing childhood illnesses, health systems on supporting families by providing information, resources, and tools to participate in the monitoring process. Shifting to a more collaborative and inclusive model of care improves the family's experience and increases adherence to treatment plans. Additionally, technological advances such as telemedicine and remote monitoring have opened new ways to provide care to sick children. These innovations make healthcare easier and more convenient, especially for families living in remote areas or facing logistical problems. Additionally, digital medical tools and electronic medical records facilitate better communication and collaboration between healthcare providers, allowing for greater collaboration in care.Looking ahead, the future of pediatric cancer care will focus more on personalized

medicine. Advances in genomics and precision medicine may allow doctors to tailor treatment to the child's genetics and specific disease. This could lead to more effective treatment, reduce side effects and improve performance.In addition, efforts can continue to improve the transition of young people with chronic diseases from healthcare professionals to adults. Easing this transition and ensuring continuity of care during this critical period is critical to maintaining success in disease management and encouraging young people to care for themselves. Overall, the future of pediatric disease care is promising for improving outcomes through personalized medicine, continued advancement of clinical practice, technology, and a strong commitment to holistic and family care. As research and innovation continues, the goal remains the same: to improve the health and well-being of sick children and give them the best possible life.

### References

- [1][1] Krivitzky LS, Walsh KS, Fisher EL, Berl MM.
- [2][2] Overview of executive functions in pediatric cases "BRIEF": age and diagnostic factors. Child Neuropsychology 2015: 1–19.
- [3][3]Kolk A, Ennok M, Laugesaar R, Kaldoja M-L, Talvik T. Long-term cognitive outcomes after childhood stroke. Pediatr Neurol 2011; 44:101–9.2. [4][4] Brinkman TM, Krasin MJ, Liu W, Armstrong GT, Ojha RP, Sadighi ZS, et al.

- [5] Long-term neurocognitive functioning and social competence in adult survivors of childhood central nervous system tumors:St. Jude
- [6] Lifespan Cohort Study. J Clin Oncol Off J Am Soc Clin Oncol 2016.
- [7][4] Sehlo MG, Kamfar HZ. Depression and quality of life in children with sickle cell disease: The impact of social support. BMC Psychiatry 2015; 15:.
- [8][5] Yates KO, ed. Pediatric neuropsychology: Research, theory, and practice. second edition. New York: Guilford Press; 2010Escoffery, C., McGee, R., Bidwell, J., Sims, C., Thropp, E.K., Frazier, C. & Mynatt, E. D. (2018). A review of epilepsy patient self-management practices. Epilepsy and Behavior, 81, 62–69.
- [9][6] Deonna, T. (2008). Epilepsy in children: Secondary prevention is important.
- [10] Developmental Medicine and Child Neurology, 45, p. 38-41.
- [11] [7] Cardamone, L., Salzberg, M., O'Brien, T. and Jones, N. (2013). Antidepressant treatment in epilepsy: Do medical comorbidities affect the underlying disease? British Journal of Pharmacology, 168(7), p. 1531-1554.
- [12] [8] Russ SA, Larson K, Halfon N. National profile me nyuam yaus qaug dab peg thiab qaug dab peg. PEDIATRIC 2012; 129:256–6.
- [13] [9] 2014 NINDS Epilepsy Research Comparisons.
- [14] [10] Kumar S, Nilsen WJ, Abernethy A, Atienza A, Patrick K, Pavel M et al.

- [15] Mobile health technology assessment. American Journal of Preventive Medicine 2013; 45:228–36.
- [16] [11] Sieverink, F., Kelders, S.M. and van Gemert-Pijnen, J. E. (2017). Explain the concept of health technology compliance: System
- [17] Alysis when used for compliance. Journal of Medical Internet Research, 19(12), e402.
- [18] [12] Park, L.G., Howie-Esquivel, J. and Dracup, K. (2014). A quantitative review of the effectiveness of mobile phone interventions to improve medication adherence. Journal of Advanced Nursing, 70(9), 1932-1953.
- [19] [13]Oppenheimer, Julia, Alan Leviton, Madeline Chiujdea, Annalee Antonetty, Oluwafemi William Ojo, Stephanie Garcia, Sarah Weas, Eric W. Fleegler, Eugenia Chen and Tobias Lowe Denkemper. "Electronic monitoring of outpatients with epilepsy." Epilepsy and Behavior 87 (2018): 226-232.
- [20] [14] Shegog, Ross, Lana Braverman and John D. Hickson. "Digital and technology in epilepsy: Building a digital ecosystem to improve epilepsy management." Epilepsy and Behavior 102 (2020):
- [21] 106663.
- [22] [15] Escoffery, Cam, Robin McGee, Jonathan Bidwell, Christopher Sims, Eliana Kovitch Thropp, Cherise Frazier, and Elizabeth D. Mynatt. "Review of epilepsy patient's self-management skills." Epilepsy and Behavior 81 (2018): 62-69.

- [23] [16] Stoyanov, Stoyan R., Leanne Hides, David J. Kavanagh, Oksana Zelenko, Dian Tjondronegoro and Madhavan Mani. "Mobile App Rating Scale: A new tool for measuring the quality of healthcare mobile apps." JMIR mHealth and uHealth 3, no. 1 (2015): e27.
- [24] [17]Ader, Deborah N. "Development of the Patient-Reported Outcomes Measurement Information System (PROMIS)." (2007): S1-S2.
- [25] [18]Carlozzi, Noelle E., Jennifer L. Beaumont, David S. Tulsky and Richard C. Gershon. "NIH Toolbox Model Comparative Processing Speed Test: Normative Data." Archives of Clinical Neuropsychology 30, no. 5 (2015):
- [26] 359-368.
- [27] [19]Eriksen, Charles W. and Derek W. Schultz. "Data Processing in Visual Analysis: Continuous Flow Concepts and Experimental Results." Perception and Psychophysics 25, no. 4 (1979): 249-263.
- [28] [20] Corsi, Philip M. "Human memory and the central nervous system." Doctoral thesis, ProQuest Information and Learning, 1973.
- [29] [21] Witt, Suzanne T., Angela R. Laird, and M. Elizabeth Meyerland. "Functional neuroimaging correlates with changes in finger function: an ALE meta-analysis." Neuroimaging 42, no. 1 (2008): 343-356.
- [30] [22] Patwardhan, M., Stoll, R. Hamel, D.B., Amresh, A., Gary, K.A. and Pina, A. "Designing mobile applications to support prevention and promotion of early intervention in childhood

depression." Proceedings of the 2015 Wireless Health Conference (WH '15). Computer Society, New York, Tshooj 8, 1-8 (2015). [23] Gary, K.A. li al., "mHealth hybrid application for self-reported pain measurement in sickle cell disease," 2016 IEEE Healthcare Innovations Point of Care Technology Conference (HI-POCT), Cancun, (2016), pp. 179182 nplooj ntawy.

[31] [24] Gary, K.A. li al., "mHealth Hybrid Application for Self-Reported Pain Measurement in Sickle Cell Disease," 2016 IEEE Healthcare Innovations Point of Care Technology Conference (HI-POCT), Cancun, (2016), ib., 179-18.