Digital Nutrition Monitoring and consulting system for Home – based clinical nutrition

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LASPEN
Latvian Society for Clinical Nutrition and Metabolism

Background: In Latvia, there is an urgent need for improved monitoring and management of home-based clinical nutrition for malnutrisioned patients, especially since the state fully funds clinical nutrition products for home clinical nutrition. The challenges associated with their conditions frequently result in suboptimal outcomes.

Rationale for the Initiative: The current methodologies for monitoring clinical nutrition are fraught with errors and inefficiencies. This project proposes a digital solution that promises timely and precise nutritional support for Chronic patients at risk of malnutrition. Utilizing digital technology and clinical algorithms could significantly improve the efficiency and precision of home-based clinical nutrition monitoring for these patients. This initiative is designed to address shortcomings in current methods, enhance patient outcomes, and contribute to the overall improvement of care for patients receiving home nutritional treatment.

Objectives and Scope:

- To develop a patient-focused application that facilitates the monitoring, logistics, and management of clinical nutrition plans for Chronic patients at home, thereby improving their quality of life and decreasing healthcare costs.
- To establish a web interface that enables dietitians to oversee requests, consultations, and the logistics of clinical nutrition supplements tube feeding and parenteral nutrition products .
- To create a clinical algorithm that will aid healthcare professionals in evaluating and modifying the nutritional care of oncology patients, based on real-time data."
- Research and analyze the cost-effectiveness of this digital system after implementation of the system

Planned Activities & Deliverables

Interface Design: Develop user-friendly interfaces for both patients and Health care provider (dietitian , doctors, nurses) .
Product Catalogue Integration: Incorporate product catalogues into the system.
Functionality and Security Testing: Rigorously test the application's functionality and security protocols.
Deployment and Performance Monitoring: Deploy the application and monitor its performance for optimization.

Development Stages:

Application Development: Construct the application, specifically designed for at-home clinical nutrition monitoring.
Stakeholder Integration: Foster progressive partnerships with multidisciplinary stakeholders, including patients, caregivers, and dietitians.
Professional Training: Deliver comprehensive training sessions to healthcare providers for the effective application of the NutriMonitor system.
Pilot Testing: Initiate pilot testing at the Liepāja Regional Hospital and with Mobile Palliative Care teams in Rūre (Rīga, Kurzeme, Latgale) to solicit user feedback and enhance functionality.
Continuous Improvement: Establish a consistent feedback loop to refine system capabilities based on practical application and user insights.

Concrete Deliverables of the Project:

Improved Patient Outcomes: Evidenced by more effective home clinical nutrition schemes and reduced malnutrition risk.
Economic Benefits: Demonstrated savings from efficient clinical nutrition therapy and patient care outcomes.
Stakeholder Collaboration: Strengthened partnerships with patients, caregivers, and healthcare professionals across disciplines.

Achievements Expected:

Next 12 Months:

Complete the development and initiate beta testing of the digital system application.
Conduct the initial round of healthcare professional training programs.
Gather and analyze pilot test data to further refine the application.

Next 24 Months:

Achieve the full implementation of the digital system application across multiple healthcare facilities.
Noticeably increase user engagement and integrate feedback for second-phase application enhancements.
Realize a measurable improvement in patient outcomes due to improved nutritional monitoring.

Resources & Enablers

Personnel Needs:

Project Manager: To oversee project execution, ensuring milestones are met on schedule.
Software Developers: A team to build and maintain the NutriMonitor app.
Dietitians: To assist in designing the clinical algorithm and provide expert insights.
Data Analysts: To evaluate app performance and patient outcomes data.

Financial Needs:

Development Costs: Salaries for developers, project manager, and ancillary staff.
Operational Costs: Infrastructure costs, including servers and maintenance.
Training Expenses: Materials and resources for healthcare professional training.
Research and analyze : *to conduct research and analyse the cost-effectiveness of using the system, as well as the impact of implementing the system on the patient's quality of life (reducing the risk of malnutrition, improving well-being)*

X **Please tick to confirm the PEN letter of endorsement is attached. Incomplete submissions will not be considered.**

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Grant Allocation:
70% (28 000Eur) Development and Operational Costs: Development of the app, user support, and maintenance.
15% (6000 Eur) Training and Implementation: Creating and delivering training programs.
10% (4000 Eur) Data Analysis and Quality Control: For ongoing evaluation and improvement of the app.
5% (2000 Eur) Research and analyze : to conduct research and analyse the cost-effectiveness of using the system.

Success Factors:

User-Centric Design: Ensuring the app is intuitive and meets the needs of both patients and healthcare providers.
Effective Training: Providing comprehensive training to ensure successful adoption and use of the app.
Data Security: Ensuring patient data is secure and privacy is maintained.
Stakeholder Engagement: Involving all stakeholders, including healthcare professionals, patients, and administrative staff, in the development and implementation phases.
Continuous Improvement: Regular updates based on user feedback and technological advancements.
These resources and enablers are critical for the NutriMonitor project to effectively improve clinical nutrition monitoring and enhance patient care.

Results/Outcomes & Expected Impact
Implementation of Findings:

- Findings from the project will be implemented through updates to the app, changes to clinical nutrition protocols, and integration with healthcare systems.
- Successful strategies and practices identified will be scaled up to a national level through collaborations with healthcare providers and policymakers.

Advancement of Patient Care:
NutriMonitor will advance patient care by enabling real-time tracking and adjustments to nutrition plans, thus responding quickly to patients' needs, and potentially reducing malnutrition and its associated risks.

Contribution to Optimal Nutritional Care:
The project promotes optimal nutrition by personalising patients' meal plans, improving adherence to dietary recommendations, improving clinical nutrition in the home and facilitating better communication between patients and healthcare professionals. The project contributes to optimising the costs of home clinical nutrition, as effective monitoring ensures that the patient receives the optimal amount of product needed to correct the patient's nutritional status, thus saving the government money.

Innovation:

The project's innovation lies in its use of technology to bridge gaps in current nutritional care, especially by personalizing the experience and enabling remote monitoring and assessment, which are not widely available in current practices.

Influence on National Nutrition Policy:

- By demonstrating improved patient outcomes and potential cost savings, Project has the potential to influence national nutrition policy, particularly regarding the adoption of digital health solutions.

Transferability to Other Settings/Countries:

- The modular and scalable design of tool means it can be adapted to other healthcare systems and countries, taking into account local dietary habits, ESPEN and local nutrition guidelines, and healthcare policies.
- Its success in Latvia could serve as a model for international healthcare communities.
- Project results will be implemented by updating the app, modifying clinical nutrition protocols and integrating into health systems. Identified successful strategies and practices will be disseminated nationally through collaboration with health care providers, policy makers and health care staff involved in monitoring home clinical nutrition

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