

Project Proposal: **“A Research Study on Effectiveness of Current Remote Insulin Devices”**

Background

According to the IDF Diabetes Atlas, 537 million adults aged between 20 and 79 live with diabetes. The substantial growth in cases makes it indisputable that adopting essential preventive and treatment measures is crucial for effectively managing this disease.

Effective insulin monitoring is pivotal in helping diabetic patients manage their condition. Utilizing remote monitoring devices can improve insulin monitoring accuracy and convenience, empowering patients to control their insulin levels better and prevent complications.

Therefore, the primary objective of this study is to comprehensively evaluate the currently available remote monitoring devices and offer recommendations to users on the most cost-effective and user-friendly insulin monitoring solutions.

Objectives

- To select five current remote insulin monitoring devices
- Research on the pros and cons of each monitoring device
- To analyze the cost-effectiveness and ease of use of each device

Scope

Analyzing five current remote insulin monitoring devices to assess their accuracy in measuring blood glucose levels, their ability to provide real-time data, their support in making insulin dosing decisions, their potential to enhance diabetes management, and their role in reducing associated health risks and complications.

Timeframe

Phases	Description of Work	Start and End Dates
Phase One	Planning, device selection <ul style="list-style-type: none">• Choosing the devices based on current usage• Research about the available devices in the market• Develop methodology for data collection	08/21/2023 - 09/30/2023
Phase Two	Testing of devices, data collection <ul style="list-style-type: none">• Getting devices and recruiting participants• Selecting testing parameters in all devices and testing devices• Collecting tested data and monitoring	10/01/2023 - 11/15/2023
Phase Three	Data analysis and reporting efficient device. <ul style="list-style-type: none">• Analyzing the collected data by comparing among the devices.• Reporting the efficient device which satisfies all the parameters	11/16/2023 - 12/7/2023

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Project Budget

Phases	Description of Work	Anticipated Costs
Phase One	Research on planning and selection of 5 remote insulin monitoring devices	<ul style="list-style-type: none">Project Manager: \$10,000Research team of 5 people: \$25,000Stakeholder engagement: \$5,000Resource materials: \$5,000Miscellaneous Expenses: \$5,000 Total = \$50,000
Phase Two	Selection of Participants and Testing	<ul style="list-style-type: none">Project Manager: \$15,000Research Team of 5 people: \$50,000Participant Compensation and Incentives: \$10,000 (50 participants)Purchase of Testing Device: \$30,000 (For the work to be completed in 6 weeks)Laboratory Equipment and Consumables: \$20,000Miscellaneous Expenses: \$10,000 Total = \$135,000
Phase Three	Data analysis and final reporting	<ul style="list-style-type: none">Project Manager: \$10,000Research Team and Analysts: \$40,000Statistical tool and analysis: \$10,000Stakeholder Engagement: \$5,000Miscellaneous Expenses: \$5,000 Total = \$70,000
	Total	\$ 255,000.00

Key Stakeholders

Client	Indiana University Health Pharmacies
Sponsor	Indiana University Health
Project manager	Parvathi Dandibhotla

Monitoring and Evaluation

Monitoring:

- The accuracy of all the recorded data
- Financial records and ensuring the project remains within budget.
- Progress by having regular team meetings and maintaining Minutes of Meetings
- Whether the deadlines are met or not.

Progress Evaluation:

- Phase One: Research and Selection Phase
Objective- To identify and select five remote insulin monitoring devices for evaluation.
Evaluation- Identification of suitable remote insulin monitoring devices, development of selection criteria, successful selection of devices, and the completeness of the project plan.

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- Phase Two: Testing and Comparison Phase
Objective- To assess the selected remote insulin monitoring devices' accuracy, usability, and safety.
Evaluation- Completion of accuracy testing, usability assessments, safety checks, efficient resource allocation, and adherence to the project timeline.
- Phase Three: Data Analysis and Report Preparation Phase
Objective- To analyze test results, compile findings, and prepare a comprehensive report with recommendations.
Evaluation- Completeness of data analysis, report preparation, user feedback analysis, adherence to the budget, and ongoing stakeholder engagement.

End of the Project Progress Evaluation:

Assessing the successful completion of all project deliverables, stakeholder satisfaction, achievement of predefined objectives, adherence to the budget, and the project's overall impact on improving remote insulin monitoring for diabetic patients.

Approval Signatures

Indiana University Health
Pharmacies, Project Client

Indiana University Health,
Project Sponsor

Parvathi Dandibhotla,
Project Manager

References

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- [2] Deeb, A., Akle, M., Abdulrahman, L., Suwaidi, H., Awad, S., & Remeithi, S. (2019). Using insulin pump with a remote-control system in young patients with diabetes improves glycemic control and enhances patient satisfaction. *Clinical Diabetes and Endocrinology*, 5(1). <https://doi.org/10.1186/s40842-019-0081-z>
- [3] Daly, A. B., Boughton, C. K., Nwokolo, M., Hartnell, S., Wilinska, M. E., Cezar, A., Evans, M. L., & Hovorka, R. (2023). Fully automated closed-loop insulin delivery in adults with type 2 diabetes: an open-label, single-center, randomized crossover trial. *Nature Medicine*, 1–6. <https://doi.org/10.1038/s41591-022-02144-z>
- [4] IDF Diabetes Atlas | Tenth Edition. (2022). IDF Diabetes Atlas. <https://diabetesatlas.org/#~:text=Diabetes%20around%20the%20world%20in%202021%3A>