Project Proposal - Tailoring Diabetic Therapies: A Pharmacogenomics Investigation

Background

- The aim of the project is to determine a positive connection link between pharmacogenetics and drug therapy used in Type II diabetes. Pharmacogenetics is the varied drug response seen in individuals due to heredity or interplay of genes. The long-term goal of pharmacogenetics is to help physicians a reliable drug and a specific dose suited for each patient. With advances in pharmacogenetics, we can have safer and more efficient drugs and targeted drug therapy.
- Type II diabetes is one of the leading debilitating diseases affecting mankind. In general, there is an absence of effective utilization of insulin which is circulating in the bloodstream. Generally, each cell in our body has an insulin receptor. The circulating insulin must enter these cells via these receptors. When the sensitivity of these receptors decreases, cells die of glucose deficiency as glucose cannot enter the cell without these receptors, leading to type II diabetes. The level of blood glucose and sensitivity of the insulin receptors is kept under check with various medications such as oral hypoglycemic or Insulin.
- It is often noticed certain population of patients may not respond to a specific class of drug which otherwise gives positive results in other patients. Hence, the aim of this study is to find the specific gene modulation affecting the drug metabolism for better-targeted drug therapy.

Objectives

General Objective:

1. Successfully launch new app within the 4-month time frame.

Specific Objective:

1. The information regarding genetic variations that affect how well people with type 2 diabetes respond to treatments like metformin, and sulfonylureas.
2. Preemptive genotyping could help identify patients who are more at risk. Lower doses of sulfonylureas or alternative medications could be given to people who are more susceptible, potentially preventing hypoglycemia episodes.
3. Ensure a positive customer reception and product reviews.

Scope

- To create a new tool kit with a promise of rapid delivery of the results which can help physicians mainly endocrinologists with targeted drug therapy.
- To create a new product that attracts customers and increases the market cap for the company.
- To complete the project in three phases, in Phase-1 the project plan will be developed while gathering necessary pharmacogenetics data for the project.
- In phase 2 the application will be developed and all the gathered data will be integrated, validated, and tested. A marketing strategy will be developed for the launch.
- Finally in phase 3 the application will be launched, feedback will be recorded, and user support will be handled.

Timeframe

	Description of Work	Start and End Dates
Phase One: **Project Initiation**	Assemble team, develop project plan, and gather research data for pharmacogenetics study	21-Aug to 21- Sep
Phase Two: **Development And Testing**	Build the app, integrate genetic data, validate clinically, and develop a marketing strategy.	22-Sep to 21-Oct
Phase Three: **App Launch and Monitoring**	Launch the app, handle user support and feedback, ongoing monitoring, and post-launch marketing.	22-Oct to 06-Dec

Project Budget

	Description of Work	Anticipated Costs
Phase One: **Project Initiation**	Assemble team, develop project plan, and gather research data for pharmacogenetics study.	$50,000
Phase Two: **Development and Testing**	Build the app, integrate genetic data, validate clinically, and develop a marketing strategy.	$70,000
Phase Three: **App Launch and Monitoring**	Launch the app, handle user support and feedback, ongoing monitoring, and post-launch marketing.	$40,000
	Total	**$160,000**

Key stakeholders

Client	Medicaid: US government healthcare program interested in supporting diabetes research. Athena Health: Healthcare tech firm. Google: Tech giant exploring healthcare innovations
Sponsor	Google is funding project development and research initiatives for diabetes treatment.
Project manager	Srinath Kalepu

Monitoring and Evaluation

- Regular Progress reports to the client and sponsor.
- User testing and feedback during development.
- Post-launch App analytics to track traffic, bounce rates, and conversations.

Approval Signatures

		SRINATH KALEPU
[Name], Project Client	[Name], Project Sponsor	[Name], Project Manager