

PHASE 1

Project=[Diabetes Prediction system]

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1.[Introduction]

Diabetes Mellitus ("diabetes" for short) is a serious disease that occurs when your body has difficulty properly regulating the amount of dissolved sugar (glucose) in your blood stream. It is unrelated to a similarly named disorder "Diabetes Insipidus" which involves kidney-related fluid retention problems.

In order to understand diabetes, it is necessary to first understand the role glucose plays with regard to the body, and what can happen when regulation of glucose fails and blood sugar levels become dangerously low or high.

The tissues and cells that make up the human body are living things, and require food to stay alive. The food cells eat is a type of sugar called glucose. Fixed in place as they are, the body's cells are completely dependent on the blood stream in which they are bathed to bring glucose to them. Without access to adequate glucose, the body's cells have nothing to fuel themselves with and soon die.

2.[Database Setup]

Objective: To relieve symptoms to correct associated health problems and to reduce morbidity, mortality and economic costs of diabetes to prevent as much as possible acute and long-term complications; to monitor the development of such complications and to provide timely intervention to improve the quality of life and productivity of the individual with diabetes

What to do: A diet rich in vegetables, fruits, and lean proteins can benefit a

person with diabetes. At the same time, a person with diabetes may need to limit their intake of white bread, sweets, and other highly refined food.

3.[Data Ingestion]

Data Ingestion is the process of importing and loading data into a system. It's one of the most critical steps in any data analytics workflow. A company must ingest data from various sources, including email marketing platforms, CRM systems, financial systems, and social media platforms.

By applying the Value Transformation Framework (VTF) in health centers, the National Association of Community Health Centers (NACHC) aims to show improvements in diabetes control. This systematic strategy to transform the way health centers operate can lead to improvements in health outcomes, patient and staff experiences, costs, and equity (Quintuple Aim). Special attention is paid to the health centers' infrastructure, people systems and care delivery systems.

4.[Methods]

Evidence-based diabetes interventions, the learning community model, and the VTF were used together to drive system improvements and activate proven diabetes control practices within eight health centers. Multidisciplinary teams at select health centers in Georgia and Iowa, with their partner primary care associations, participated in this NACHC-led quality improvement project.

5.[Results]

During the one-year intervention (January 2017–December 2017), the mean raw percentage of patients with HbA1c Poor Control decreased from 50.9% (range, 23.7–70.4%) in January to 27.5% (range, 13.6–37.4%) in December. This represents a relative improvement in diabetes control of 46%. The 1-year-intervention data also showed trends in the desired direction with statistically significant improvements related to the following interventions: a formal written clinical policy, standing orders, patient recall/outreach, performance data shared

at the provider/team-level, and performance data shared at the site/organization level.

6.[Conclusion]

A conceptual model focused on transforming health center systems, organized by the NACHC Value Transformation Framework and supported by a strong learning community, can lead to better diabetes control outcomes among patients seen at health centers.

Keywords: vulnerable populations, hemoglobin A1c, quality improvement, health systems, interdisciplinary care