Diabetes

Improving Delivery of Care for Better Screening
and Early Diagnosis with Data

MDCLONE

Intermountain Healthcare

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Overview

Diabetes is a growing problem, with the estimated number of Americans with the disease increasing from 12.1 million in 2002 to 29.1 million in 2017. The CDC projects that by 2050, as many as 33% of US adults could have diabetes.

Approximately 25% of type 2 diabetes cases may be currently undiagnosed. This is important to note because many patients with type 2 diabetes develop complications just before or immediately after diagnosis. Late diagnosis of diabetes negatively affects patient outcomes. For example, uncontrolled diabetes can result in catastrophic health problems, including heart disease, stroke, blindness, kidney disease, nervous system disease, amputations, dental disease, and pregnancy complications.

Additionally, the healthcare cost burden of diabetes is high and increasing. In 2018, the American Diabetes Association estimated the economic burden of diabetes had risen to $327 billion in 2017 from $245 billion in 2012, when the cost was last examined. It's estimated that within the next decade, spending will rise to almost $500 billion — 10% of total health spending. Cardiovascular complications impose most of the cost in diabetes patients. Preventing or delaying such complications can significantly reduce the cost burden.

Better screening and early diagnosis of diabetes is critical to improving patient outcomes, as good management can preserve and improve quality of life.

Challenges

Intermountain Healthcare needed a way to analyze their patient population and social determinants of health to affect outcomes in care transformation for diabetes. Intermountain aimed to determine in which geographic areas patients had trouble getting to appointments, affording specialty drugs, or picking up prescriptions and whether there was a correlation with barriers related to education, disability, or other social determinants of health.

Intermountain has previously attempted to analyze data on diabetes, but the amount of data on the disease is overwhelming. They needed a tool that would help them pare down their data set to home in on the patients who most required care.

Key Questions

+ How can we better understand the population of patients who do not attend follow up visits after abnormal HbA1c in absence of a diagnosis of diabetes?

+ What are the characteristics of patients who have either chronic kidney disease, coronary artery disease, congestive heart failure, or peripheral vascular disease in addition to diabetes?

+ How can we differentiate the outcomes of patients who received first- or second-line treatments for diabetes?

+ How can we better understand the characteristics of patients who are most likely to pick up their medications?

+ How do social determinants of health and access to healthcare affect the development of comorbidities such as Chronic Kidney Disease in the diabetic population?

Results to Date

Intermountain connected with Algorex Health, a social determinants of health provider who has aggregated data about health system outcomes in specific geographic areas. Then, using the MDClone ADAMS platform, Intermountain took their data from the year 2000 onward, largely from Utah and Idaho locations, and performed an analysis of their diabetic patient populations.

Intermountain found 47,000+ patients ≥ age 18 who had completed at least three outpatient visits in the past 2 years.

+ 8,000+ patients had a type 2 diabetes diagnosis and an A1C of ≥ 8 in one of the last two test results

    + 1,942 had received a type 2 diabetes diagnosis, an A1C of ≥ 8 in the last 2 test results, and a high per member per month (PMPM) cost (75th percentile)

        + The high PMPM cohort represented 64% of the total in-scope medical expense

+ 768 patients in the scope population had received a type 2 diabetes diagnosis, an A1C of ≥ 8 in the last 2 test results, and a high area deprivation index (ADI) representing greater than 60%

    + The high ADI cohort represented 11% of the total in-scope medical expense

Conclusion

Understanding why certain patient populations experience difficulties keeping up with their care can help Intermountain find ways of improving delivery of care. With results of its patient population in hand, Intermountain will be able to define an action plan for its

business and change how it makes care available to patients across all diabetes care locations. This will help patients become more compliant with their care plans, prescriptions, and follow-up visits. Once Intermountain makes changes to the way care is delivered, it can review the data for positive and negative outcomes based on care transformation.

About the Technology

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The MDClone ADAMS Platform is a self-service data environment empowering users to organize and access information quickly, sparking ideas and insights that power research, drive better patient outcomes, and create impactful healthcare innovation.

Data are everywhere. Insights are hard to find.

Navigating data in a health system can be challenging, expensive, and time consuming. Answering simple questions can take months or longer due to siloed systems, complex data models, unstructured data, privacy regulations, and limited support from IT and data teams.

With MDClone's unique underlying technology, healthcare organizations can leverage ideas from across the entire ecosystem, overcoming common obstacles that hinder research, innovation, and collaboration.

Fast Access to Dynamic Data Exploration, Analysis, and Action

The rapid cycle of idea-to-data-to-insight enables healthcare organizations to ask for information, discover insights, act on new understandings, measure performance, and share ideas around the world to improve patient health and outcomes.

+ Independent self-service discovery
+ Interact with all patient data from any source
+ Leverage structureless data
+ Collaborate freely using synthetic data

Learn more at mdclone.com.

About Intermountain Healthcare

Headquartered in Utah with locations in eight states and additional operations across the western U.S., Intermountain Healthcare is a nonprofit system of 33 hospitals, 385 clinics, medical groups with some 3,900 employed physicians and advanced care providers, a health plans division called SelectHealth with more than one million members, and other health services. Helping people live the healthiest lives possible, Intermountain is committed to improving community health and is widely recognized as a leader in transforming healthcare by using evidence-based best practices to consistently deliver high-quality outcomes at sustainable costs.

Learn more at intermountainhealthcare.org.

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Get Started Today

Unlock healthcare data. Transform care.

sales@mdclone.com
mdclone.com/see-a-demo

SEE A DEMO