CASE STUDY

Healthcare Predictive Analytics Helps in Increasing Profit Margins by 14% for a Hospital Chain

Engagement Summary

Most of the work within modern medicine is about anticipating and reducing risk based on existing and historical patient data. How likely a cancer patient is to suffer complications if a surgery is performed or what are the chances of a patient to readmit a patient in the intensive care unit after discharge; healthcare industry workers answer such questions and make decisions without absolute certainty. However, with the emergence of predictive analytics in healthcare, these questions can have data-backed answers. Predictive analytics in the healthcare sector focuses on alarming healthcare workers about likelihood of events and outcomes before they can occur, thus, helping in preventing healthcare issues. Driven by AL and ML, our predictive analytics experts have developed algorithms that can be fed with historical as well as real-time data to make accurate predictions.

The Client

The client is one of the largest and fastest growing multinational chain of hospitals across the USA and Canada. They started their operations in early 90s and currently have 20+ medical facilities across North America.

Unleash the power of healthcare predictive analytics and deploy a smarter approach to tackle the complexities and anomalies in decision making. Request a FREE pilot to learn how we can help your organization.

The Business Challenge

Latest advancements in healthcare technologies have led to an explosion of data that is extremely complex and belongs to disparate sources. The client wanted to leverage these datasets to improve their business efficiency. The major challenges faced by this healthcare industry giant were –

1. Prevent and predict Hospital acquired conditions (HACs) and Healthcare associated infections (HAIs) – The client was facing issues in collecting and analyzing data regarding HACs and HAIs to understand their causes and other valuable insights at a granular level. They also wanted to develop an effective healthcare predictive model to prevent HACs and HAIs.
2. Focusing on Low-value Decision Points – Since the healthcare industry includes human interference, any uncertainty over a clinical decision can result in doctors undertreating or overtreating their patients. This client was looking for a predictive analytics-based solution that would allow their doctors and healthcare workers to administer treatment plans closely and accurately.
3. Identify abuse and fraud of medical insurances – Most of the patients now are entitled to medical insurance but a few of them are fraud which results in major loss in business. This multinational chain of hospitals was facing loss due to abuse of medical insurance. They collaborated with Quantzig to analyze vast datasets of medical insurance claims to identify suspicious anomalies and identify specific patterns to prevent fraud and abuse.

Solution Offered

Quantzig's dedicated team of healthcare analytics and predictive analytics experts initiated a three-pronged approach to solve this client's existing challenges. The first phase included designing a predictive analytics-based healthcare dashboard for doctors and healthcare workers to prompt decision-making. Our experts focused on leveraging AI and IoT to identify gaps and unusual patterns to prevent insurance frauds in the second phase. In the last phase, our healthcare predictive modeling solutions were based on ML, IoT and advanced algorithms. This healthcare predictive modeling helped the client to predict and prevent HACs and HAIs. Quantzig's predictive modeling for the healthcare sector enabled the client to design a predictive model of HACs and HAIs.

Advantages of Implementing Robust Predictive Analytics Model in Healthcare

1: Increase profit margins
2: Prevent over 80% of HACs and HAIs
3: Enhance service quality

Quantzig

THE ANALYTICS ADVANTAGE

Domain Knowledge and Learning-driven Mindset

Flexible White Box Solutions

Agile, Robust, and Innovative Solutions

Business Outcome

The implementation of a robust predictive analytics model led to the following key business outcomes for the client –

1. Increase in profit margins by 14%
2. Prevention of over 80% of HACs and HAIs
3. Enhanced service quality