Client Requirements

Client is a US based pharmaceutical company providing therapeutic products and drugs for CNS and respiratory ailments. Client needed health economics and outcomes research (HEOR) capabilities to define high-risk, high cost patients, compare costs and benefits of its drugs across various patients groups and identify clinical and economical outcomes while proving effectiveness of their pharmaceutical products.

Given its expertise in analytics and life sciences domain, CitiusTech was selected to build an analytics solution which would aggregate large amount of patient data, analyse the data and provide clinical and cost related insights. CitiusTech's BI-Clinical solution was used to provide these capabilities to the customer.

CitiusTech Solution

Requirement Analysis

CitiusTech assigned a cross-functional dedicated team of clinical informatics, healthcare consultants, data scientists, integration analysts and healthcare BI engineers. The CitiusTech team worked closely with the client's clinical experts and conducted a thorough assessment of its medical products. The key objectives from this initiative were -

- Analyze and assess complex data sets for epileptic conditions
- Identify key risk variables to predict adverse events including readmissions, in-patient admissions and emergency admissions
- Identify high risk and high cost patients for these adverse events
- Compare cost and benefits of the therapies
- Identify therapies related to highest employee absence
- Identify the impact of the therapies on patients with disabilities
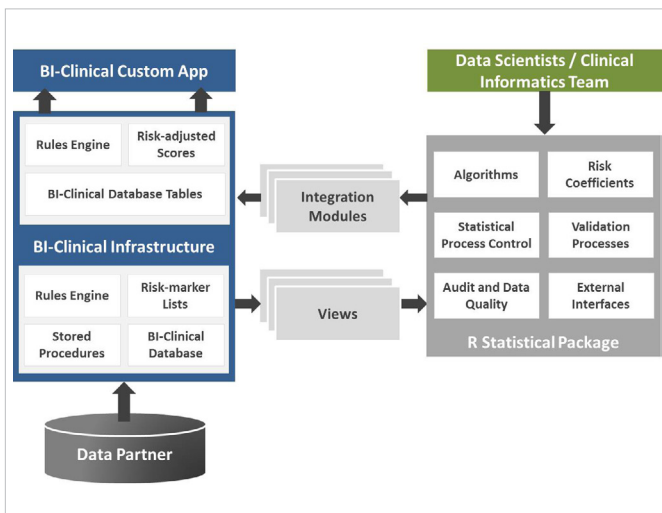
Solution Design and Development

CitiusTech's life sciences team defined the hypothesis and business case for the client and designed the solution that leveraged BI-Clinical and R statistical tool.

- **BI-Clinical**
  - BI-Clinical data adaptors for data acquisition
  - Define patient cohorts (case and control groups) based on current condition and risk profile, using BI-Clinical Rules Engine
  - Define patient profile for risk standardization
  - Leverage BI-Clinical's flexible data model for easy storage of clinical and administrative data
  - Develop database views to prepare and push data for statistical processing

- **Statistical Analysis Using R**
  - Define and execute statistical models to perform retrospective and predictive analysis
  - Receive and integrate statistical analysis results
  - Conduct data audits and validation modules for quality control

Value Delivered

By partnering with CitiusTech, the client was able to:
- Develop highly customizable solution based on client's business need
- Identify social, economic and clinical outcomes to monitor the effectiveness of drugs and therapeutic products
- Leverage CitiusTech's strong expertise in predictive analytics to identify high risk and high cost patients
- Use CitiusTech's extensive experience in hypothesis generation and statistical process control methods

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About CitiusTech

CitiusTech is a specialist provider of healthcare technology services and solutions to medical technology companies, providers, payers and life sciences organizations. CitiusTech's services and solutions include healthcare software development, healthcare interoperability, regulatory compliance, BI/analytics, consumer engagement, care coordination and population health management.

CitiusTech helps customers accelerate innovation in healthcare through a number of solutions and accelerators for clinical quality reporting, healthcare big data, cloud computing, mobile health and predictive analytics. With cutting-edge technology expertise, world-class service quality and a global resource base, CitiusTech consistently delivers best-in-class solutions and an unmatched cost advantage to healthcare clients worldwide.

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