

From Google Sheets to A Fully Scalable & Secure Clinical Data Warehouse And Analytics Tool

For over 65 years, REHAB has been dedicated to rebuilding lives and empowering patients to reach optimal health and independence. Serving over 11,000 patients every year, REHAB works with individuals, families, and communities by providing exemplary rehabilitation care services for those with physical and cognitive impairments in Hawaii and the Pacific.

The challenge

REHAB used Google Sheets to track patient referrals from their partners, but actual admissions, discharge, and transfer (ADT) data was routed through an on-premise healthcare system that used the HL7 v2 data format: a highly complex, text-based data format that stores patient data in a complicated series of pipe and special-character delimited data points. REHAB had no way to connect their HL7 v2 data to their partner referrals and as a consequence, didn't really understand which partners provided referrals that resulted in patient admissions. They needed a clinical data warehouse and interactive client dashboard that could be used to gain insight into the success of their outreach initiatives.

However, HL7 v2 messages can be difficult to work with, requiring specialized knowledge to restructure into a format that can be used for analysis. On top of that, because these messages contain patient data, REHAB had to make sure that whatever solution they chose for their data warehouse was secure and fully HIPAA compliant.

The approach

With the Google Cloud Platform, security and compliance is a breeze. The fundamental components of the platform, including Google's market-leading data warehouse BigQuery and ETL tools such as Google Dataflow, are HIPAA compliant and covered by a Business Associate Agreement. On top of that, Google Sheets, which can be connected to BigQuery via a native connector, is also HIPAA compliant, providing an easy-to-use and cost-effective tool to analyze and visualize data.



About REHAB

Hawaii's only licensed & Joint Commission accredited inpatient rehabilitation hospital dedicated to providing the highest quality of innovative inpatient and outpatient services.

Industry: Healthcare

Location: Honolulu, HI



cloudbakers

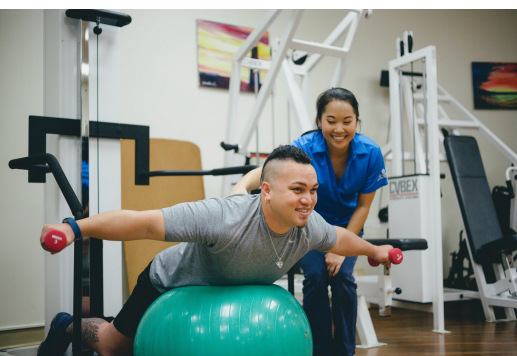
About Cloudbakers

We bring the cloud down to Earth. The future of your business hinges on adopting and adapting to changing technology – that's what Cloudbakers is here to help with.



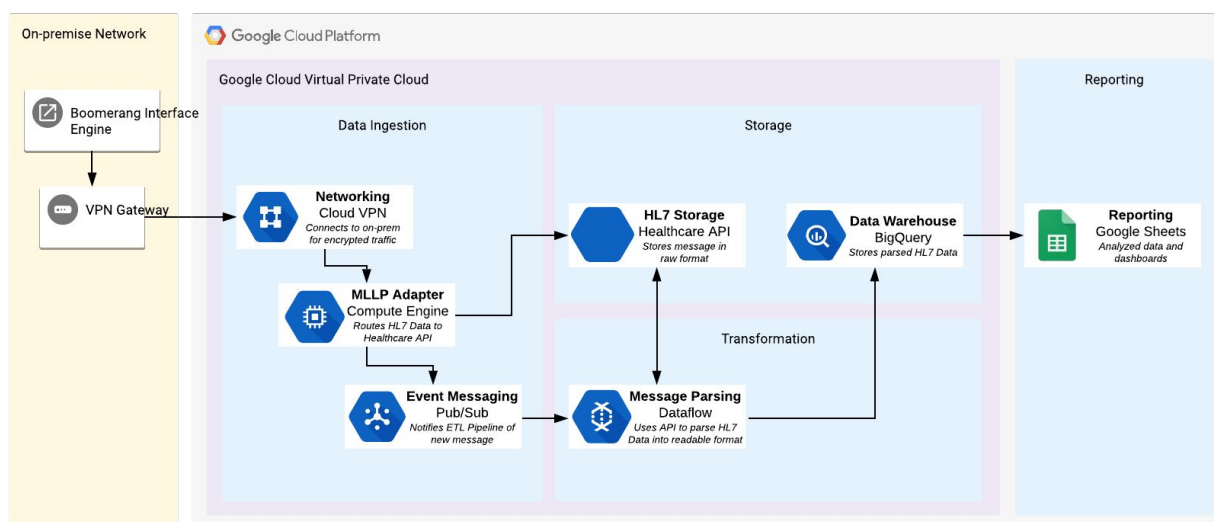
Products

- Google Sheets
- BigQuery
- Dataflow
- Google Healthcare API
- Compute Engine
- Pub/Sub
- Cloud VPN



The approach (continued)

What really differentiates the Google Cloud Platform is that it offers specialized healthcare tools in the form of the Google Healthcare API, which acts a storage mechanism as well as a data interface that quickly parses HL7 v2 messages into a JSON-based format. The JSON format is much easier to work with, and by partnering with Google for the alpha release of the Healthcare API, Cloudbakers was able to create a fully secured, managed Google Cloud Dataflow pipeline that automatically parses HL7 v2 messages and sends them to BigQuery for visualization and analysis in Google Sheets.



The results

- Completely secure & HIPAA compliant data pipeline
- Data admissions processed in real time, sending easy-to-understand & analyzable data into a clinical data warehouse
- Insight into the efficacy of the hospital's outreach
- Closer alignment with partners, helping effectively route patients to hospitals and clinics.

“This project has helped support REHAB in their dedication to rebuilding the lives, families, and careers of individuals who have been impacted by physical and mental trauma.”

– Colbert Seto, Chief Information Officer, REHAB Hospital of the Pacific

