Empowering Healthcare Insights **with Power BI**

Location
USA

Client
A leading provider of senior living and long-term care services

Solution
Xylity Technologies leveraged Power BI to provide data-driven insights and improve patient care operations for the client.

Result
Enabled analytics-driven decision making at individual care facilities, improving operations and care outcomes.

About the Client

We had the privilege of working with a prominent healthcare organization operating numerous nursing homes and assisted living facilities across several states. The client aimed to empower each location with patient-level insights for optimized operations and care delivery. However, with a geographically distributed network, aggregated data and reporting remained a challenge. Seeking a centralized analytics solution, the client was exploring options when referred to our Data Visualization experts at Xylity Technologies.

Client's Goal

Our client's vision was to give individual facilities autonomy through self-service analytics. The goal was establishing a cost-effective data and analytics platform providing administrators and caregivers access to patient insights from any device. This would allow tailoring care programs according to needs while monitoring key metrics. With insights accessible at the point of care, our client believed operations and patient outcomes could be significantly improved across their network.

The Challenge

Despite collecting patient data, tools were inefficient at synthesizing insights for decision making Challenges included:

- Dispersed data residing in disparate systems with no unified views
- Inability to scale existing analytics solution to all facilities
- Lack of mobility limiting insights only to desktop access
- Manual, spreadsheet-based processes inhibiting real-time awareness

Overcoming these hurdles was critical to empowering facilities as envisioned.

Our Solution

The implemented solution comprised:

Azure Synapse for centralized data storage and processing from various sources like EHR systems, billing records and operational metrics. This provided a single source of truth for analysis.

Power BI was configured to create personalized analytics experiences through configurable dashboards and reports tailored for different user roles like administrators, care managers, nurses etc. Interactive visualizations made insights easy to understand and use.

A self-service analytics layer allowed users to explore data independently and gain insights into their areas. This empowered data-driven decision making at the point of care and operations.

Automated data integration routines using Azure Data Factory ensured information was ingested and transformed from various sources into a unified schema in Azure Synapse on a scheduled basis to provide up-to-date insights.

Mobile-optimized visualizations enabled accessing analytics from any device like tablets at patient bedsides. This improved efficiency and care quality by having relevant information accessible when and where needed.

Governance controls ensured adherence to data security, integrity and privacy standards for sensitive patient information with access policies and monitoring.

Implementation Process

Leveraging extensive experience, our Data Visualization experts tailored a strategic plan for the client. The following approach was adopted:

Requirements gathering and blueprinting to map data landscape and capture needs.

System integration using ETL processes to ingest data into a scalable Azure data platform.

Development of personalized dashboards and reports on Power BI for various user types.

Deployment and rollout across all facilities with training ensured caregivers derived maximum value.

Establishing support processes for ongoing enhancements and issue resolution.

Results

Post implementation, the client witnessed tangible outcomes across operations:

Insights into high-risk patients and conditions improved care quality, reducing readmissions by 15% annually.

Targeting staff training as per facility-wise performance boosted patient outcomes. Compliance on critical care metrics increased by over 20%.

Analyzing supply chain and staffing patterns optimized non-care costs, driving overall 5% savings.

Standardizing best practices across facilities enhanced consistency. Patient satisfaction surveys showed average 15% uplift.

Mobile-accessed dashboards streamlined workflows, improving caregiver efficiency by 10 hours per month.

Tech Stack Used

The solution was powered by Microsoft's advanced data and analytics technologies:

Azure Synapse Analytics for petabyte-scale data warehousing and processing needs.

Power BI for self-service analytics and visualization of insights in an interactive manner.

Azure Data Factory for orchestrating automated data integration and movement between sources and synapses.

Azure Active Directory for single sign-on and access governance.

Azure Machine Learning for applying predictive models.

Conclusion

Leveraging the right technologies, the client has transformed its healthcare delivery network with actionable, data-driven insights accessible by all. Patients receive higher quality, customized care delivered more efficiently. Xylity Technologies is proud to support the client's mission through an ecosystem that empowers informed decision-making at every level. Contact us to learn how we can help your organization achieve similar results.