



Data warehouse and BI infrastructure design and implementation

Healthcare provider focused on women and maternal health

- Built a scalable enterprise data warehouse on Azure platform to accommodate data from multiple data sources
- Built Power BI reporting suite to analyze the performance of various Practices

Setting up cloud-based data warehouse and reporting suite

Situation

- Opportunity to build the BI reporting infrastructure to enable more efficient and reliable reporting for Senior Leadership team
- Partnered with client to set up an Azure-based Enterprise Datawarehouse and develop automated performance dashboards

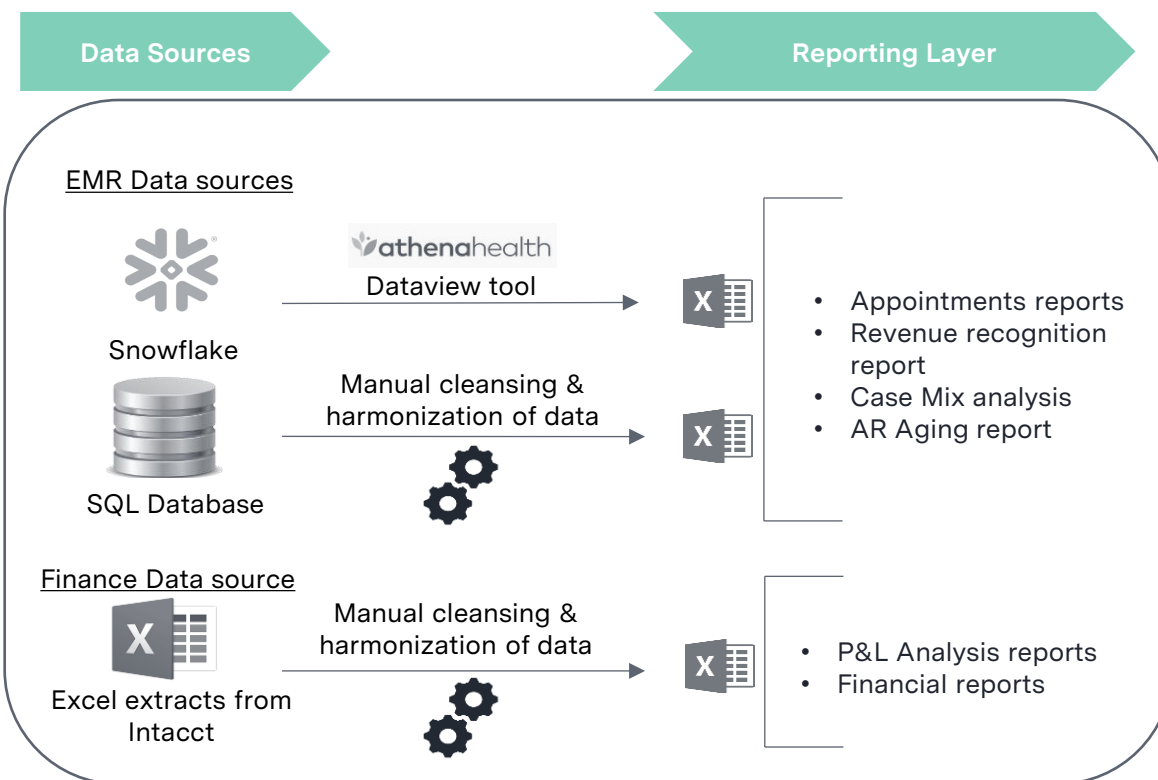
Accordion Value Add

- Analyzed the EMR data (multiple data sources) and Accounting data (Intacct) to identify the relevant KPIs
- Built an Enterprise Datawarehouse (on Microsoft Azure platform) connecting different data sources through data pipelines (in Azure Data Factory), cleansed and transformed the raw data as per business requirements
- Created tabular data models in Azure SQL database to create ready-to-serve data marts for analytical and reporting purposes
- Developed automated Power BI dashboards on top of the tabular data models to analyze the performance across different Practices
- Incorporated automated data validation and reconciliation rules at every step across the entire ETL process to ensure accuracy and consistency in data

Impact

- Advanced Enterprise Datawarehouse enabled the availability of clean and validated data off the shelf across the company on near real time basis
- Data integration of multiple EMR systems enabled the client to have consistent reporting across multiple entities
- Automated Power BI dashboards provided visibility for the Senior Leadership team into the key performance metrics dashboards with consistent and accurate performance KPIs across different practices

Prior reporting processes



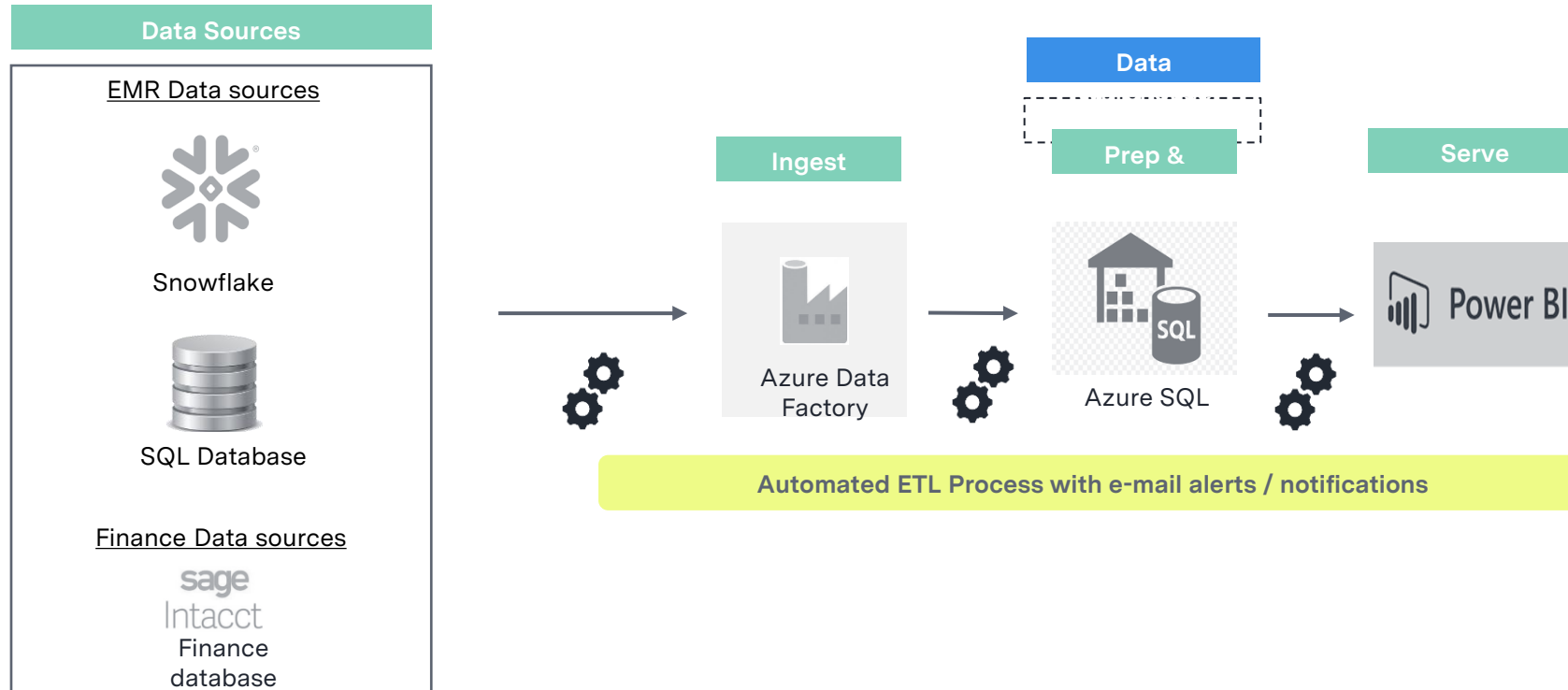
Observations on prior reporting plan:-

- Extracting data from different sources is time consuming and inefficient
- Data sources across various entities are different with varying architecture of each database and inconsistent dimensions
- Non-scalable architecture: cumbersome to add a new data source with different data accessibility method

Data, Reporting and Analytics

- **Lack of consistency of data** sources and **no standardized reporting/ KPIs** across different entities
- **Ad-hoc reporting** based on needs from various teams
- **Prone to errors** as the data is manually updated
- **Lack of availability of real-time data**
- **Data security challenges** while extracting the data from different systems and reports distribution

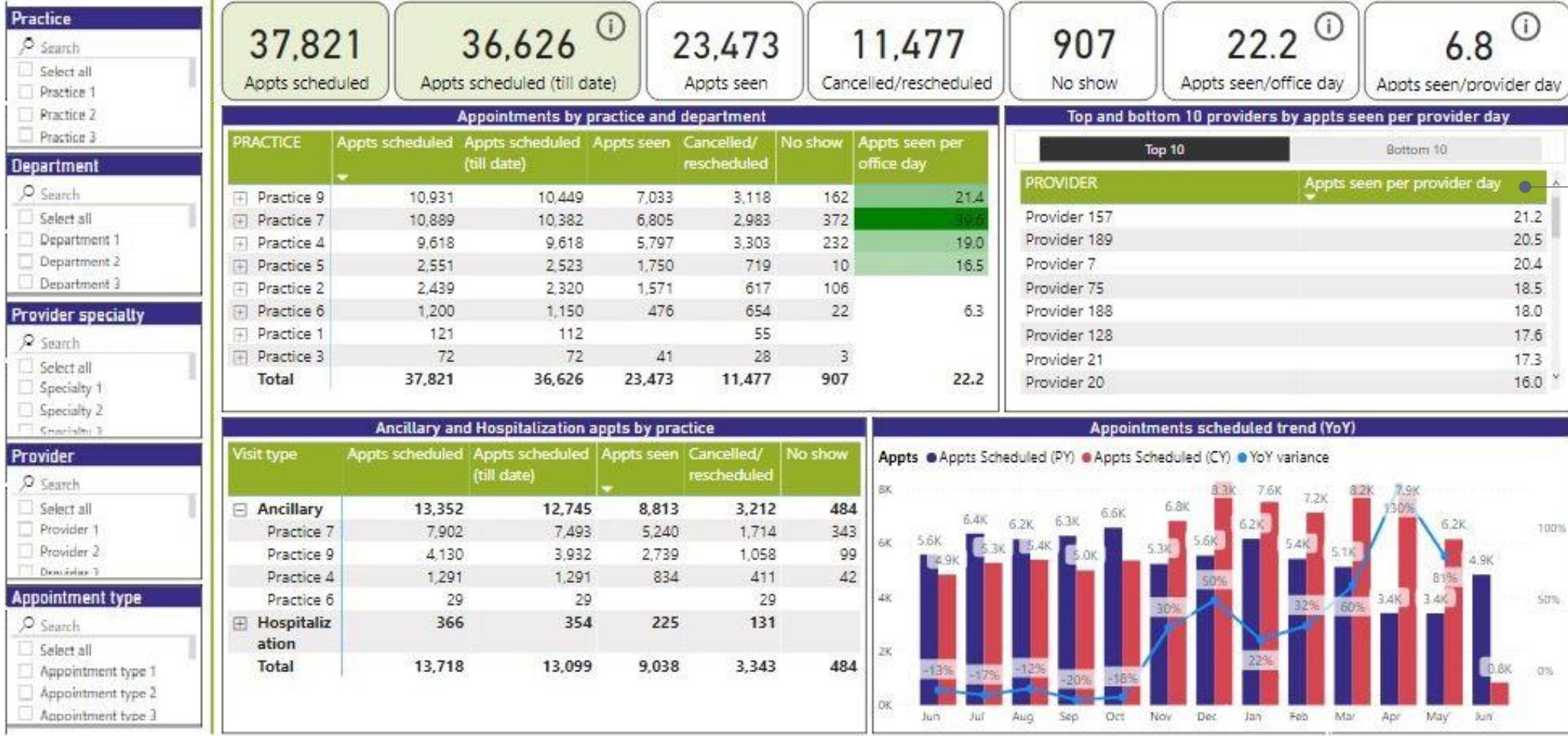
New reporting flow after BI infrastructure implementation



- Built an **Enterprise Datawarehouse** connecting different data sources through data pipelines and transformed raw data as per business requirements
- **Developed an automated ETL process** to load the data into **data warehouse** daily and configured e-mail alerts/notifications to monitor the overall ETL process
- Incorporated **automated data validation** and **reconciliation rules** at every step across the entire ETL process to ensure accuracy and consistency in data
- Created **Tabular data models on Azure SQL database** and **developed ready-to-serve data marts for analytical and reporting purposes.**
- **Developed Power BI dashboards** on top of the data models to monitor and track business performance.

Illustrative dashboard - Appointments

APPOINTMENTS SUMMARY

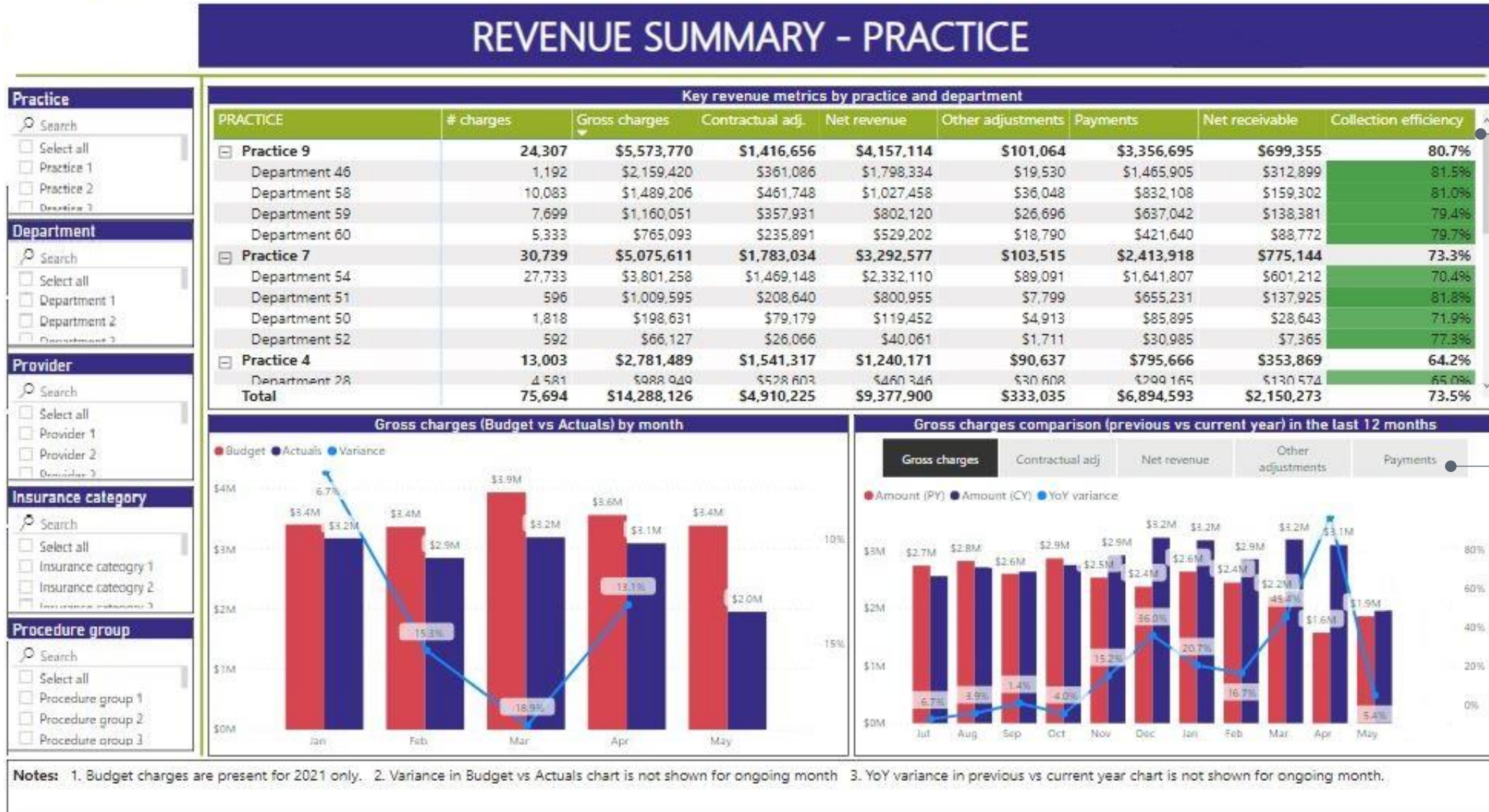


KPI cards to summarize various appointments metrics

Buttons to toggle between list of Top 10 and Bottom 10 Providers based on Appointments seen per provider day

Notes: 1. Appointments are categorized into Visit, Hospitalization and Ancillary based on the Provider mapping and department name. 3. Provider days/Office days are only calculated for office locations. 4. Appts seen in office locations are only considered for calculating appts seen per office day/provider day. 5. YoY variance is not shown for ongoing month.

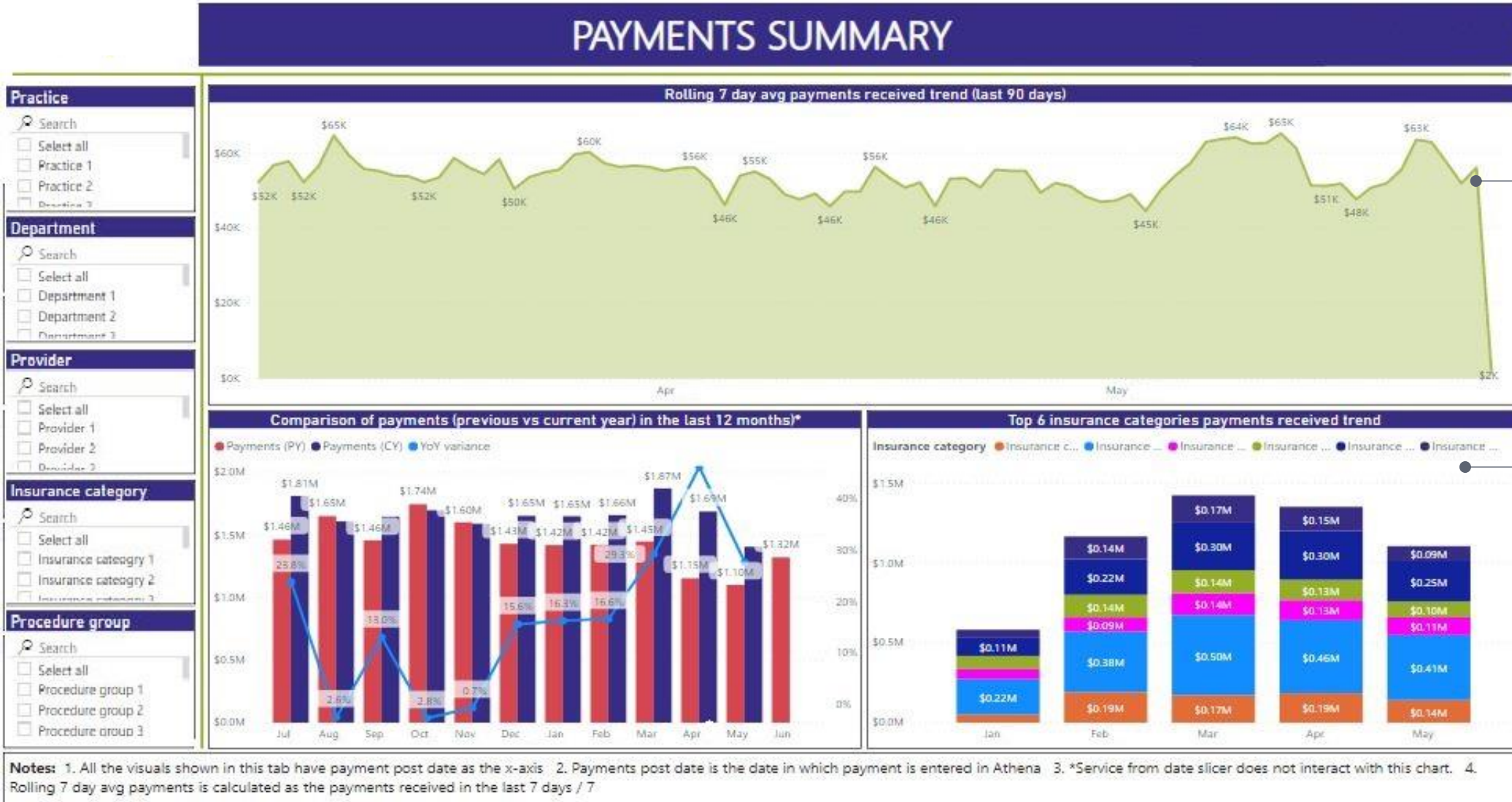
Illustrative dashboard - Revenue



Matrix to give insights into key revenue metrics by Practice and various Departments in each Practice

Buttons to toggle between different revenue metrics. Corresponding previous year numbers are also provided with YoY variance %

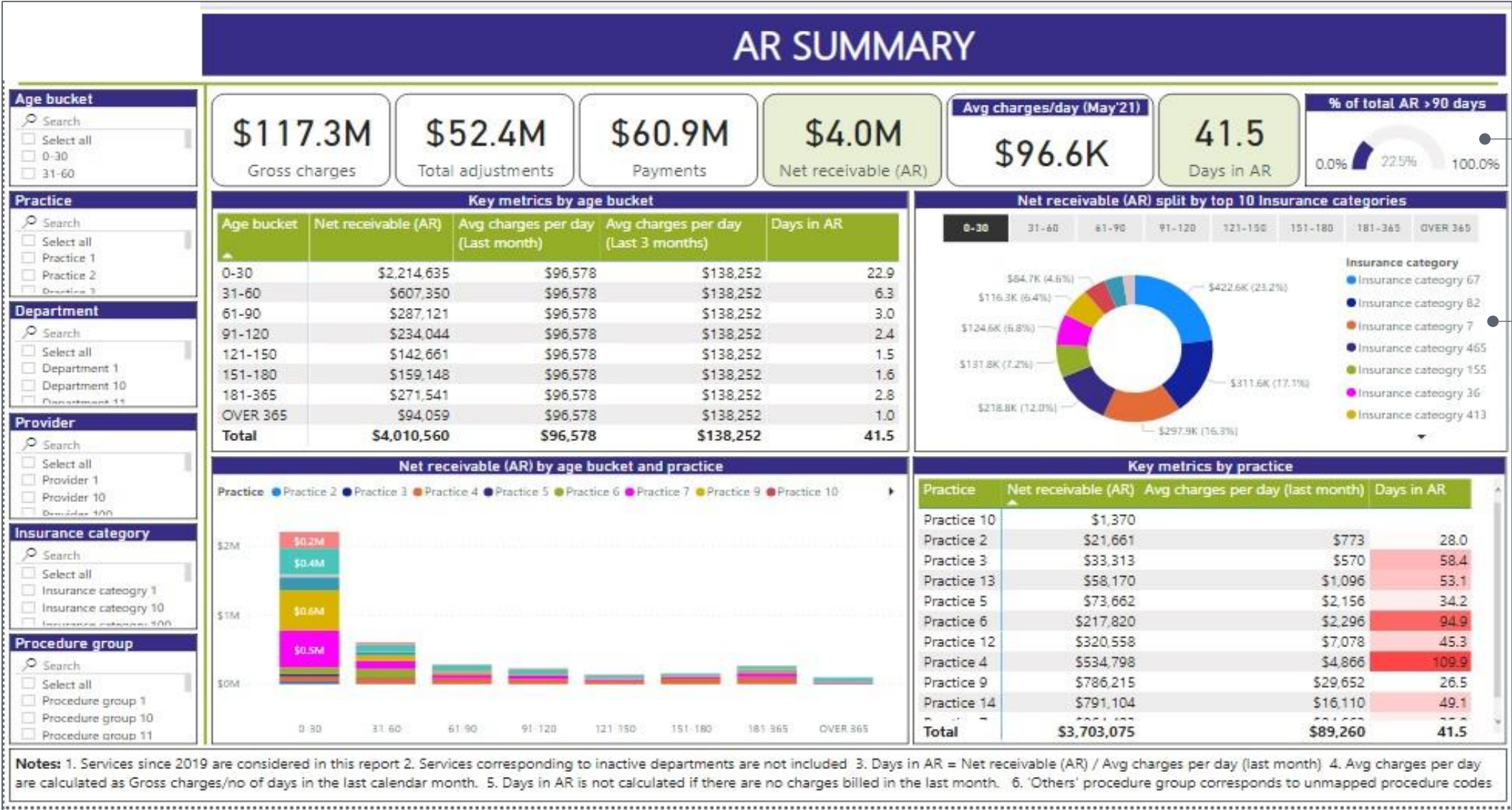
Illustrative dashboard – Payments



7 day rolling average trend chart to capture payments received trend in last 90 days

Visual to portray payments trend for Top insurance categories

Illustrative dashboard – AR Ageing



KPI cards to capture key AR Aging metrics

Pie chart to portray the Balance receivables for Top 10 Payors based on Ageing bucket