Outpatient Operation Analytics

Chain of Healthcare facilities for Mental and Behavioral health

Built a robust reporting suite on Power BI by setting up a consolidated SQL data warehouse from multiple Electronic Health Record (EHR) systems and migrated existing manual excel reports to automated self-serve dashboards

Outpatient operation analytics for a healthcare provider

Outpatient Operation Analytics

Situation

- Client did not have visibility into organization's Clinics operations performance due to lack of data gathering structure, timely reporting, accurate analysis, and historical data systems
- Partnered with the client to build structured SQL Data Warehouse, data models, automated dashboards on Power BI that are refreshed on daily & weekly basis

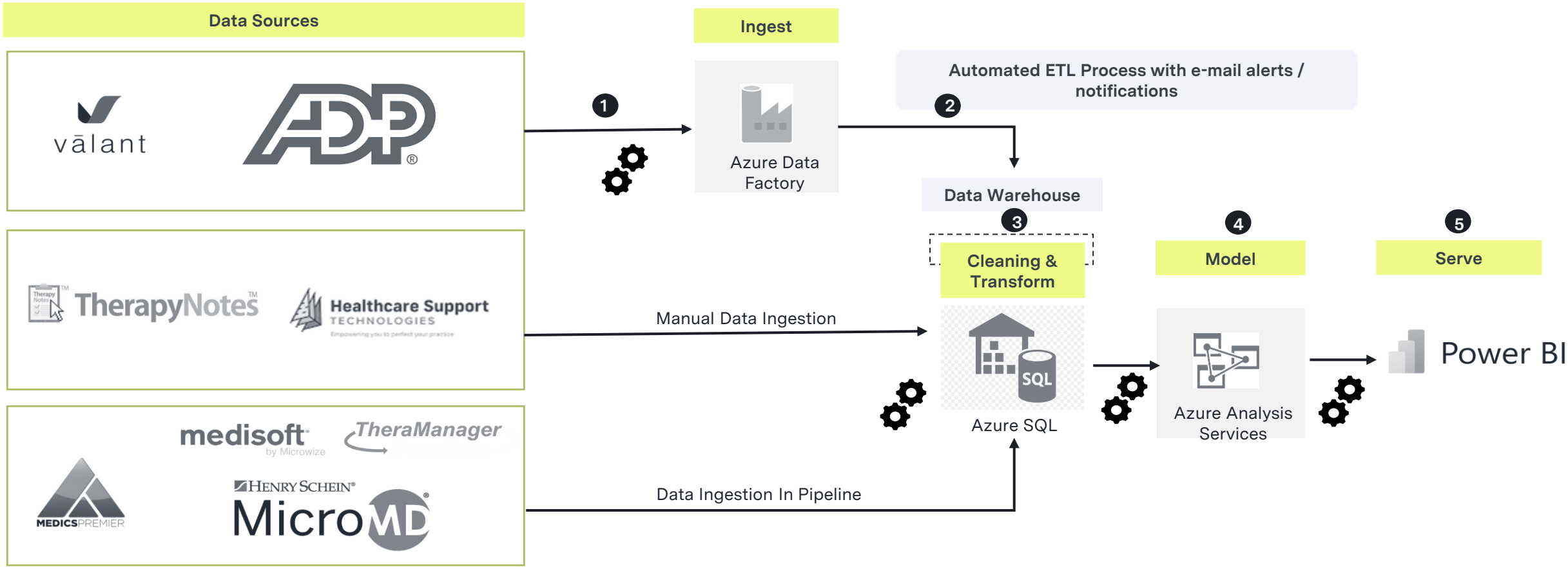
Accordion Value Add

- Designed and implemented data infrastructure to consolidate operational data from different EHR, Payroll systems (Valant, Therapy Notes, ADP, HST, Thera Manager, Medisoft, MicroSD and ADS) and setup a consolidated data warehouse that acts a single source of truth for all reporting
- Built data models on Azure Analysis Services with all key metrics and designed robust self-serve dashboards on Power BI with scheduled refresh of data weekly to provide insights into Clinics performance
- Implemented Row Level Security (RLS) to restrict the access to the Clinic Directors/Regional Managers and securely share the BI dashboards
- Built various dashboards on Power BI such as Payor Mix Report, Active Provider Dashboard, Fee Schedule Analysis etc. to provide insights into billing and collection process

Impact

- The Power BI dashboards replaced the legacy Excel reports and provided more real-time actionable insights to drive key business decisions
- Automation of reports saved about 40 person-hours a week by avoiding the manual creation of excel reports
- Clients were able to get real-time visibility into upcoming Appointments and No-Show Appointments and took action to reduce the Cancellation/No Shows

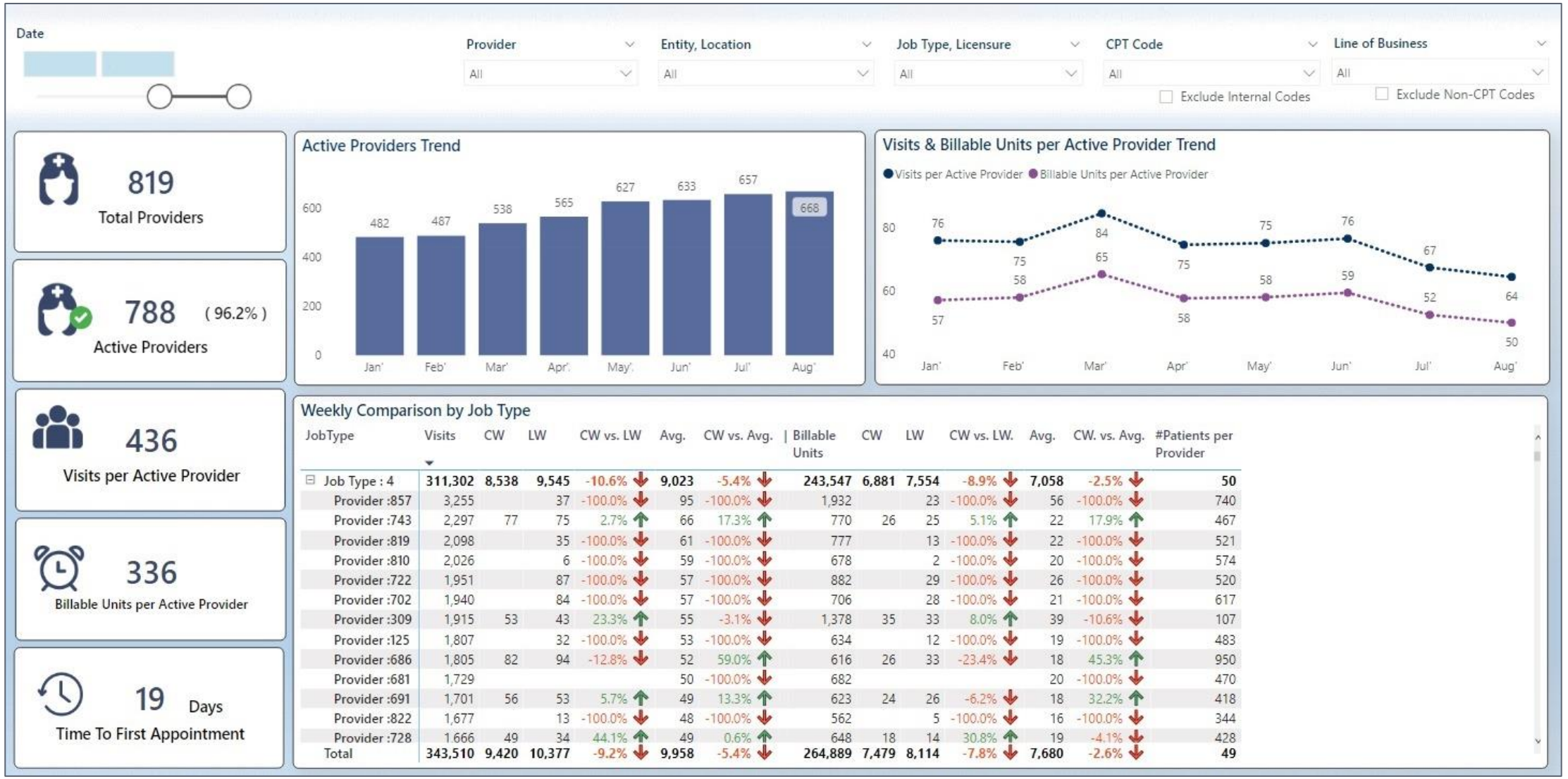
Reporting flow after BI infrastructure implementation



1. Built an **Enterprise Datawarehouse** connecting different data sources through data pipelines and transformed raw data as per business requirements
2. 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
3. Incorporated **automated data validation** and **reconciliation rules** at every step across the entire ETL process to ensure accuracy and consistency in data
4. Created **a Tabular data model on Azure Analysis services** and **developed ready-to-serve data marts for analytical and reporting purposes**.
5. Developed **Power BI dashboards** on top of the Analysis services to monitor and track business performance

Appointments summary for operations

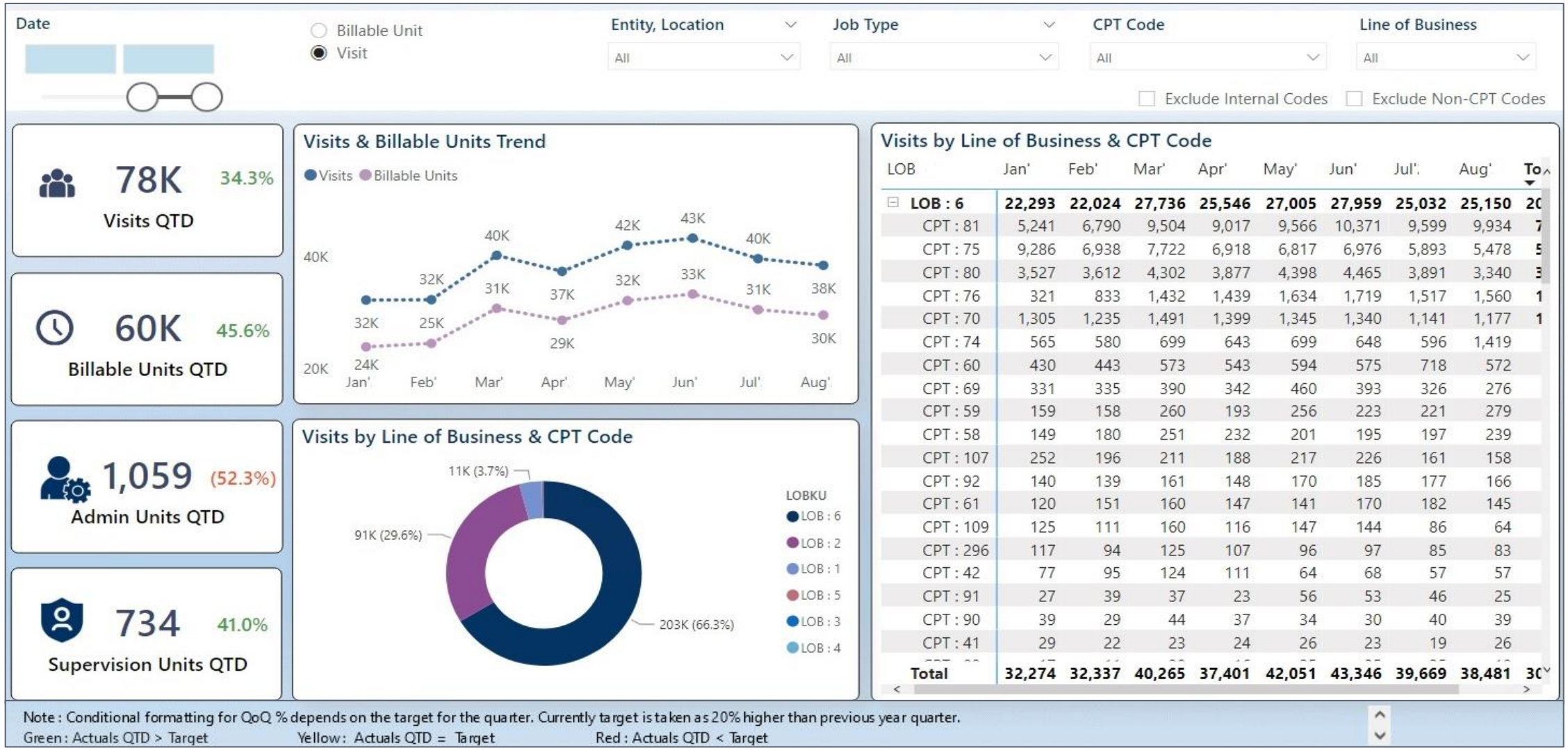
Provider summary



Weekly Comparison by Job Type

JobType	Visits	CW	LW	CW vs. LW	Avg.	CW vs. Avg.	Billable Units	CW	LW	CW vs. LW.	Avg.	CW. vs. Avg.	#Patients per Provider
Job Type : 4	**311,302**	**8,538**	**9,545**	-10.6%	**9,023**	-5.4%	**243,547**	**6,881**	**7,554**	-8.9%	**7,058**	-2.5%	**50**
Provider :857	3,255		37	-100.0%	95	-100.0%	1,932		23	-100.0%	56	-100.0%	740
Provider :743	2,297	77	75	2.7%	66	17.3%	770	26	25	5.1%	22	17.9%	467
Provider :819	2,098		35	-100.0%	61	-100.0%	777		13	-100.0%	22	-100.0%	521
Provider :810	2,026		6	-100.0%	59	-100.0%	678		2	-100.0%	20	-100.0%	574
Provider :722	1,951		87	-100.0%	57	-100.0%	882		29	-100.0%	26	-100.0%	520
Provider :702	1,940		84	-100.0%	57	-100.0%	706		28	-100.0%	21	-100.0%	617
Provider :309	1,915	53	43	23.3%	55	-3.1%	1,378	35	33	8.0%	39	-10.6%	107
Provider :125	1,807		32	-100.0%	53	-100.0%	634		12	-100.0%	19	-100.0%	483
Provider :686	1,805	82	94	-12.8%	52	59.0%	616	26	33	-23.4%	18	45.3%	950
Provider :681	1,729				50	-100.0%	682				20	-100.0%	470
Provider :691	1,701	56	53	5.7%	49	13.3%	623	24	26	-6.2%	18	32.2%	418
Provider :822	1,677		13	-100.0%	48	-100.0%	562		5	-100.0%	16	-100.0%	344
Provider :728	1,666	49	34	44.1%	49	0.6%	648	18	14	30.8%	19	-4.1%	428
Total	**343,510**	**9,420**	**10,377**	-9.2%	**9,958**	-5.4%	**264,889**	**7,479**	**8,114**	-7.8%	**7,680**	-2.6%	**49**

Clinical director dashboard



LOB	Jan'	Feb'	Mar'	Apr'	May'	Jun'	Jul'	Aug'	To
LOB : 6	**22,293**	**22,024**	**27,736**	**25,546**	**27,005**	**27,959**	**25,032**	**25,150**	**2C**
CPT : 81	5,241	6,790	9,504	9,017	9,566	10,371	9,599	9,934	7
CPT : 75	9,286	6,938	7,722	6,918	6,817	6,976	5,893	5,478	5
CPT : 80	3,527	3,612	4,302	3,877	4,398	4,465	3,891	3,340	3
CPT : 76	321	833	1,432	1,439	1,634	1,719	1,517	1,560	1
CPT : 70	1,305	1,235	1,491	1,399	1,345	1,340	1,141	1,177	1
CPT : 74	565	580	699	643	699	648	596	1,419	
CPT : 60	430	443	573	543	594	575	718	572	
CPT : 69	331	335	390	342	460	393	326	276	
CPT : 59	159	158	260	193	256	223	221	279	
CPT : 58	149	180	251	232	201	195	197	239	
CPT : 107	252	196	211	188	217	226	161	158	
CPT : 92	140	139	161	148	170	185	177	166	
CPT : 61	120	151	160	147	141	170	182	145	
CPT : 109	125	111	160	116	147	144	86	64	
CPT : 296	117	94	125	107	96	97	85	83	
CPT : 42	77	95	124	111	64	68	57	57	
CPT : 91	27	39	37	23	56	53	46	25	
CPT : 90	39	29	44	37	34	30	40	39	
CPT : 41	29	22	23	24	26	23	19	26	
Total	**32,274**	**32,337**	**40,265**	**37,401**	**42,051**	**43,346**	**39,669**	**38,481**	**3C**