

Process Improvement Initiatives in Patient Access Services

Sarah Kalavoda, Joseph Hwang

Lehigh Valley Health Network Research Scholar Program

Mentor: Joseph Hwang, MHA

Abstract

Process Improvement Initiatives in the Patient Access Services Department is a data analysis project that converts call center data into a visual representation of trends using lean principles. The outcome of this conversion was used for a visibility wall in the department to measure department metrics and growth against those of the entire network. Metrics used to measure department goals included percent service level, abandoned rate, and average answer delay. The ratio of inbound vs. outbound calls as well as the total number of calls and procedures scheduled was used to measure departmental growth. The results of this project were used to determine opportunities for improvement and the need for additional staffing in the department. Process improvement initiatives will benefit the key stakeholders by increasing productivity and patient satisfaction. Further research and data analysis will be needed into fiscal year 2015 to determine the results of further ongoing improvement initiatives in the department such as the Central Scheduling pod system implementation and the onboarding of new employees.

Process Improvement Initiatives in Patient Access Services

Background

Improving efficiency using lean processes in the health care setting is important to give patients greater value (Aherne, 2007). This project, Process Improvement Initiatives in Patient Access Services, focuses on analyzing call volume data for the Patient Access Services Department to identify strengths and areas of improvement. The Patient Access Services Department covers the areas of Precertification, Central Scheduling (including physician scheduling), Patient Access, and the Diagnostic Care Centers. Metrics for this project are percent service level, abandoned rate, and average answer delays. Also addressed in this project is department growth, which is measured by the ratio of inbound vs. outbound calls, as well as the number of accounts created and PHS procedures scheduled.

This project follows lean principles to track the department's progress toward network goals in the form of a visibility wall. The visual process is essential to lean and tools such as these are used as communication aids and to "help drive operations and processes in real time (Parry & Turner, 2007, p.77-86)." Lean has been shown as a useful tool in the healthcare industry. The UK's National Health Service, the NHS, even uses lean principles. By applying lean techniques, health services in the UK saw improvements in clinical record retrieval, number of patients seen, time flow of prescription dispensary, and reduction in inventory (Lipley, 2008). Additionally, "Applying lean thinking to the healthcare sector can provide significant cost and process efficiencies" (Aherene, 2007, p.13-15). Network goals that were addressed in this project include the 5 Pillars (People, Service, Quality, Cost, and Growth) as well as the Triple Aim (better health, better care, and better cost). Additional analysis completed of case study data from April 2014 shows peak hours for call volumes and where additional staffing can be used to

improve efficiency during these times. Future data analysis into fiscal year 2015 will test the hypothesis of increased staffing levels having a positive impact on meeting department goals.

Methodology

This study’s data was collected using call center software called Avaya. The data was pulled from reports and placed into a Microsoft Excel document organized by sub-department (table below). Each department was further categorized by offered calls, answered calls, outbound calls, abandoned rate, percent service level, average answer delay, and accounts per month. Data is represented in each category by every month of FY14. A final category measures the total call volume, accounts created, and procedures scheduled for the year.

402-TEST Call Center Report												
Precertification	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
<i>Offered</i>	1,183	1,178	1,112	1,227	1,125	1,004	1,185	934	1,196	1,304	1,202	1,170
<i>Answered</i>	1,100	1,078	1,052	1,152	1,025	939	1,011	838	1,028	1,156	1,070	1,062
<i>Outbound Calls</i>	4,908	5,049	4,716	5,105	5,029	4,911	5,510	4,498	5,141	5,794	5,215	4,595
<i>Abandoned Rate</i>	7%	8%	5%	6%	9%	6%	15%	10%	14%	11%	11%	9%
<i>% Service Level</i>	83%	84%	87%	85%	81%	83%	64%	64%	61%	43%	66%	70%
<i>Avg Ans Delay</i>	0.12	0.14	0.11	0.11	0.14	0.14	0.25	0.23	0.25	0.29	0.23	0.23
<i>Accounts per Month</i>	9,418	9,290	9,091	10,541	9,505	9,571	10,349	9,396	10,352	11,822	10,534	9,067
Central Scheduling												
<i>Offered</i>	14,487	14,398	14,242	17,567	14,100	13,829	15,231	13,859	16,211	16,897	16,099	15,457
<i>Answered</i>	13,569	13,275	12,985	13,975	12,185	11,467	13,643	12,037	13,411	14,057	12,970	12,342
<i>Outbound Calls</i>	7,919	7,141	6,782	6,885	7,364	7,386	8,206	6,980	6,801	6,560	5,318	5,091
<i>Abandoned Rate</i>	6%	8%	9%	20%	14%	17%	10%	13%	17%	17%	19%	20%
<i>% Service Level</i>	56%	50%	43%	20%	27%	29%	25%	19%	14%	12%	10%	7%
<i>Avg Ans Delay</i>	0.36	0.53	1.05	3.16	2.01	2.27	1.34	2.03	3.08	3.11	3.59	4.30
Patient Access												
<i>Offered</i>	1,416	1,419	1,304	1,584	1,380	1,279	1,643	1,336	1,518	1,507	1,473	1,408
<i>Answered</i>	1,292	1,267	1,175	1,428	1,235	1,163	1,467	1,192	1,371	1,349	1,322	1,271
<i>Outbound Calls</i>	960	995	685	764	731	576	918	648	534	519	428	531
<i>Abandoned Rate</i>	9%	11%	10%	10%	11%	9%	11%	11%	10%	10%	10%	10%
<i>% Service Level</i>	81%	78%	78%	75%	75%	72%	37%	36%	40%	61%	41%	45%
<i>Avg Ans Delay (s)</i>	0.16	0.16	0.17	0.23	0.19	0.25	0.31	0.33	0.32	0.25	0.39	0.31
<i>Accounts per Month</i>	4,330	4,415	4,723	5,197	5,372	4,215	5,110	6,587	7,075	5,935	5,689	5,651
Physician Scheduling												
Family Health Center												
<i>Offered</i>			1,781	3,191	3,606	3,114	3,655	2,809	3,560	3,624	3,534	3,430
<i>Answered</i>			1,208	2,298	2,264	2,543	3,017	2,366	3,034	2,978	2,954	2,804
<i>Outbound Calls</i>			860	1,742	1,293	844	669	633	682	553	638	379
<i>Abandoned Rate</i>			32%	28%	37%	18%	17%	16%	15%	16%	16%	18%
<i>% Service Level</i>			29%	24%	20%	47%	47%	43%	41%	34%	28%	29%
<i>Avg Ans Delay</i>			3:15	2:47	4:02	1:41	1:22	1:27	1:24	1:41	1:32	1:41
Centro De Salud												
<i>Offered</i>	952	1,295	1,379	1,440	1,384	1,366	1,576	1,268	1,694	1,500	1,538	1,534
<i>Answered</i>	891	1,127	994	1,164	1,001	1,043	1,199	945	1,263	1,144	1,276	1,212
<i>Outbound Calls</i>	1,010	919	895	1,019	938	764	770	810	1,114	1,106	1,057	951
<i>Abandoned Rate</i>	6%	13%	28%	19%	28%	24%	24%	25%	25%	24%	17%	21%
<i>% Service Level</i>	78%	65%	48%	53%	38%	46%	28%	25%	20%	18%	27%	30%
<i>Avg Ans Delay</i>	0.26	0.46	1.45	1.19	2.10	1.30	1.47	1.56	2.03	1.52	1.27	1.24
Total Physician Scheduling												
<i>Offered</i>	952	1,295	3,160	4,631	4,990	4,480	5,231	4,077	5,254	5,124	5,072	4,964
<i>Answered</i>	891	1,127	2,202	3,462	3,265	3,586	4,216	3,311	4,297	4,122	4,230	4,016
<i>Outbound Calls</i>	1,010	919	1,755	2,761	2,231	1,608	1,439	1,443	1,796	1,659	1,695	1,330
<i>Abandoned Rate</i>	6%	13%	30%	25%	35%	20%	19%	19%	18%	20%	17%	19%
Total												
<i>Inbound</i>	18,110	18,372	19,877	25,097	21,676	20,664	23,388	20,307	24,301	24,956	23,962	22,999
<i>Outbound</i>	14,797	14,104	13,938	15,515	15,355	14,481	16,073	13,569	14,272	14,532	12,656	11,547
Total Call Volume	32,907	32,476	33,815	40,612	37,031	35,145	39,461	33,876	38,573	39,488	36,618	34,546
Accounts Created	13,748	13,705	13,814	15,738	14,877	13,786	15,459	15,983	17,427	17,757	16,223	14,718
CS PHS Procedures Scheduled	33,544	32,969	31,705	37,753	32,829	31,385	32,502	26,511	33,143	34,475	33,045	32,567

To visually represent the results and trends, the data was converted into MS Excel charts corresponding to each aforementioned category. Line graphs were used to clearly depict visual

trends over time. The data used for each graph was broken down into a table underneath displaying the actual numerical data for each month against monthly targets. Target goals were established and measured against the data. Goals for percent service level and abandoned rate were fixed at 80% and 6%, respectively. Other targets for accounts per month and average answer delay were calculated based on averages. Exceptions for this were the average answer delays for the Precertification and Patient Access departments, where targets were set at 30 seconds. Months that met department goals were displayed in green, and months that did not meet goals were colored in red. This color-coding process allows onlookers to quickly and easily see if targets were met without having to examine the numerical data.

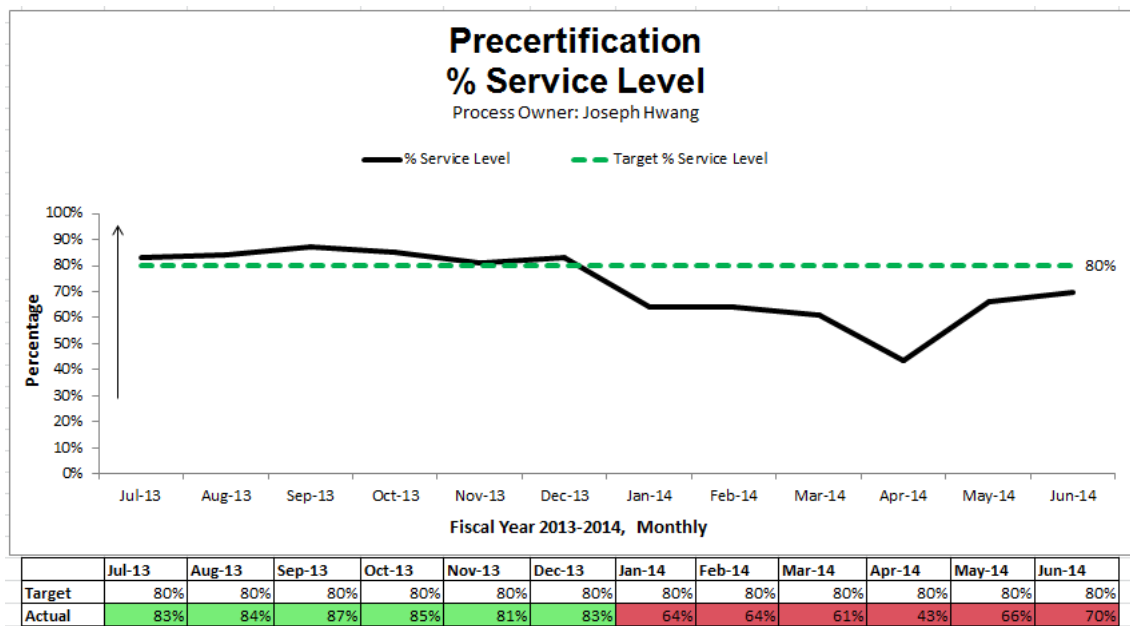
Finished data analyses were printed and displayed as a visibility wall in the department, which measures the department's metrics against network metrics for FY14 of People, Service, Quality, Cost, and Growth. Service was measured based on patient wait times, while Quality was measured by the results of percent service level and abandoned rate. Additionally, Growth was measured by examining the number of accounts per month and the number of procedures scheduled.

Additional case study data analysis looked at the staffing ratios during peak call hours for the Central Scheduling Department for April 2014. The data pulled showed the number of agents scheduled for each day and the times they worked. Averages were taken to assess the number of agents per day and time. This data was then broken down to calculate the average number of call agents during 30-minute intervals for the entire month. This data was then converted into a graph and measured against average monthly answer delay to determine peak hours and where additional staffing is needed to improve efficiency. Data such as this establishes the cost efficiency of hiring additional staffing, which is tied to the network goal of controlling costs.

Results

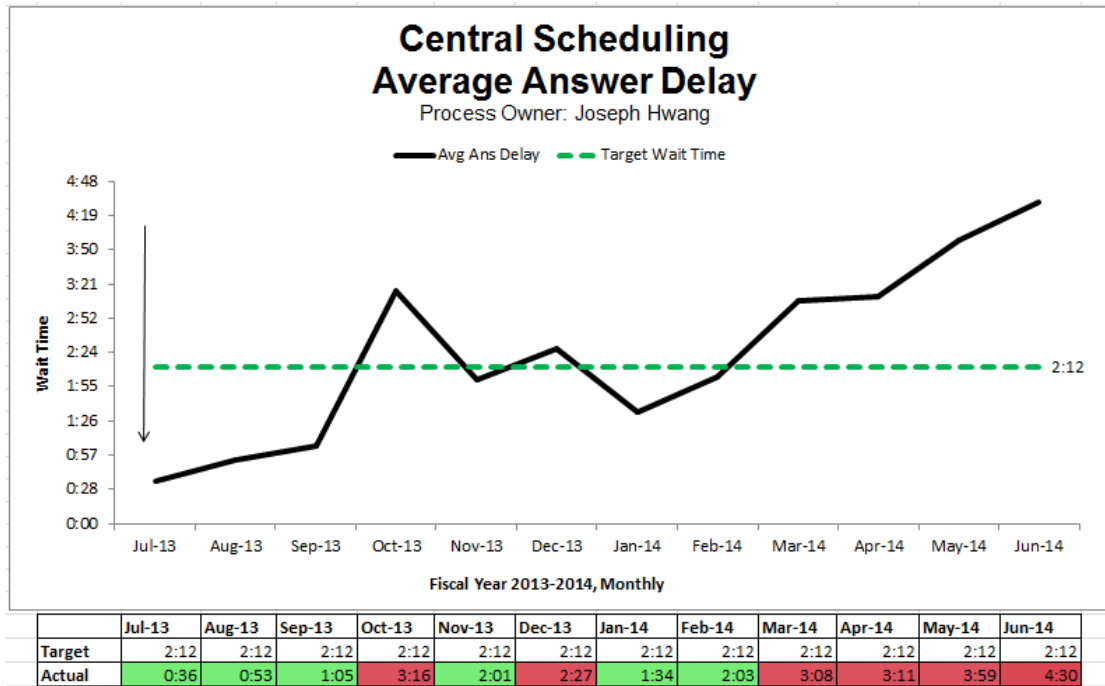
The visual representation of the data was able to clearly show trends and identify areas in which the department had opportunities for improvement. Sample results include data from the precertification, central scheduling, and patient access departments. Additional charts will display information on yearly department totals.

In the precertification department for FY14 (graph below), a clear contrast can be seen from the first half of the fiscal year to the latter half. Percent service level dropped from 83% in December to just 64% in January. There was an additional sharp decline in percent service level in April with 43%. The data started to recover in May, showing continuous improvement in the department since that time.



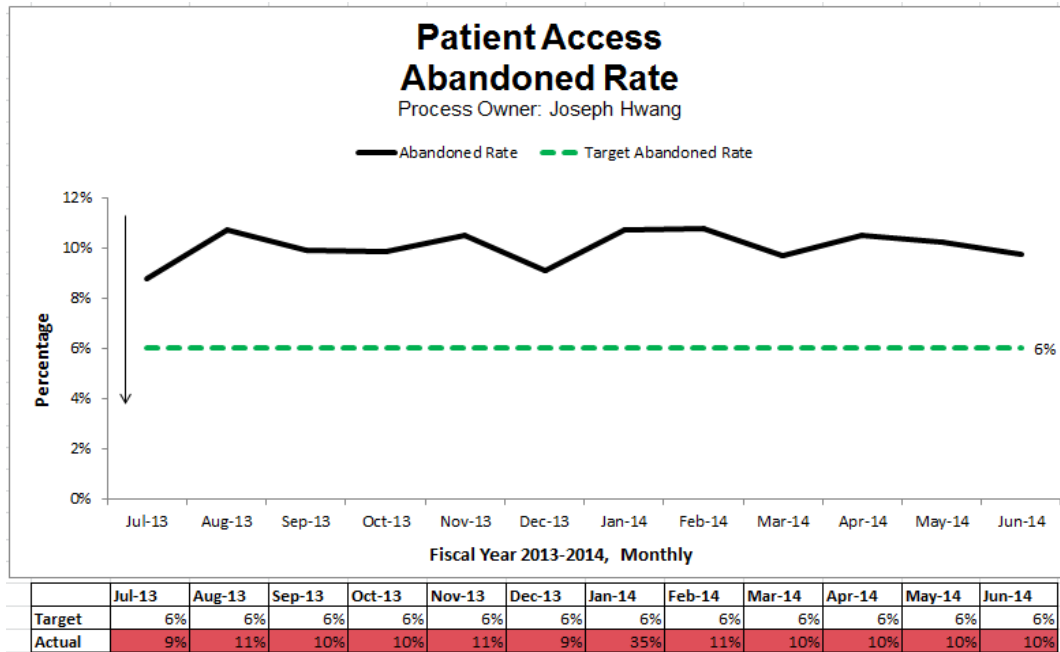
Additional opportunities for improvement can be seen in Central Scheduling by examining the average answer delay (graph below). The data drastically fluctuates throughout the year. Departmental targets were met until October, when answer delay spiked up to 3:16. Targets were then mostly reached until February, with the exception of December where the

department missed its target by 15 seconds. Since March, wait times have been increasing. The month of June had the highest average answer delay of 4:30. A factor that could contribute to this is that June is the most popular month for colleagues to take PTO. This problem of increased wait times is likely temporary and able to be alleviated by the hiring of additional full time employees.

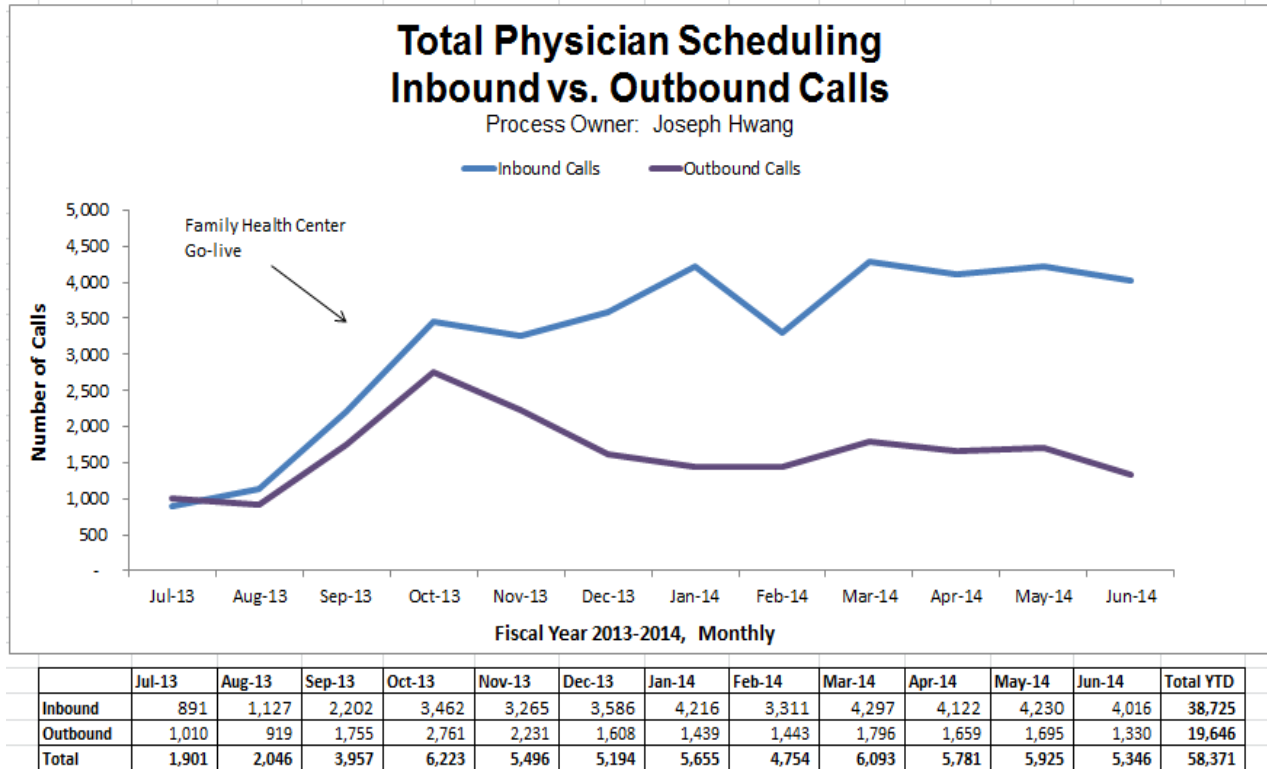


Unlike the harsh fluctuations in Central Scheduling’s average answer delay, Patient Access’s abandoned rate shows little fluctuation (graph below). However, this department is still not meeting its goal of having the abandoned rate at 6%. New ideas and initiatives could be

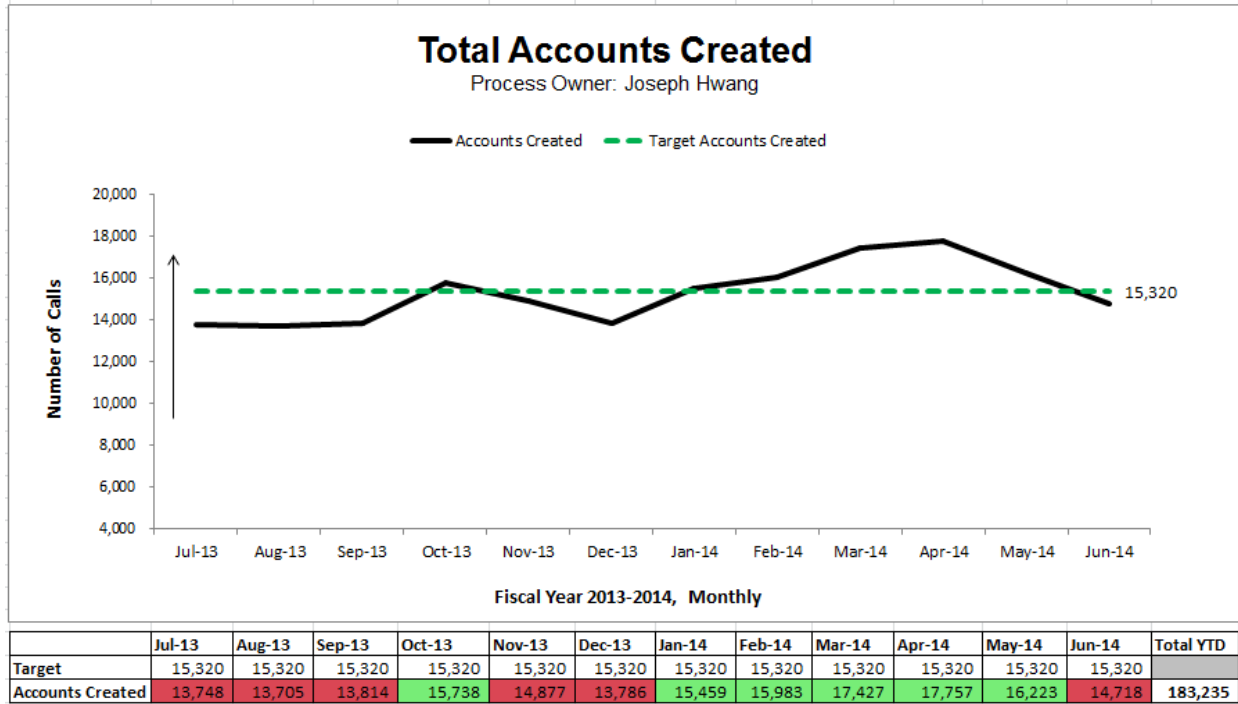
needed to experiment with ways to decrease the abandoned rate in this area.



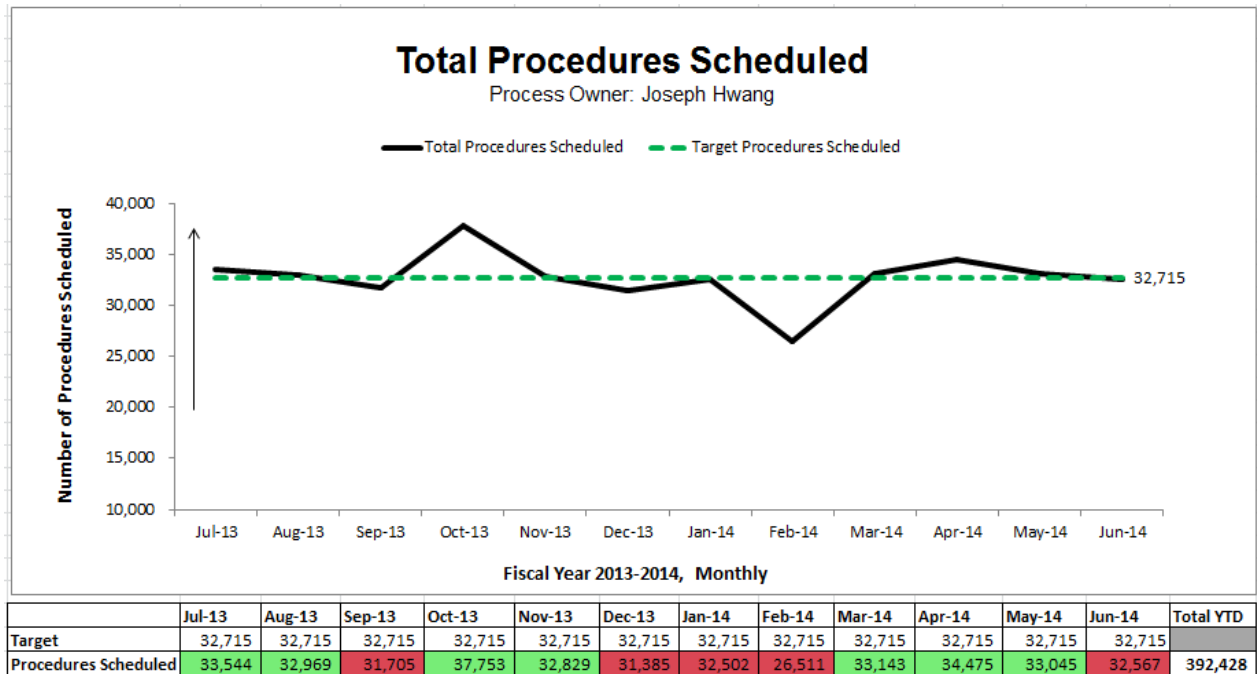
On the physician scheduling side of Central Scheduling, a clear trend can be seen when observing the inbound versus outbound calls (graph below). Although there are no targets for this data, a clear increase can be seen in September with the addition of Family Health Center to the Central Scheduling department. From August to September, the first month of go-live, total call volumes increased by 1,911 calls. From September to October, this increased spiked by 2,266 calls before leveling out during the rest of the fiscal year with the exception of a decline in February. Using this data is important to measure the increase in workload of the department and assess the possible need for additional staffing.



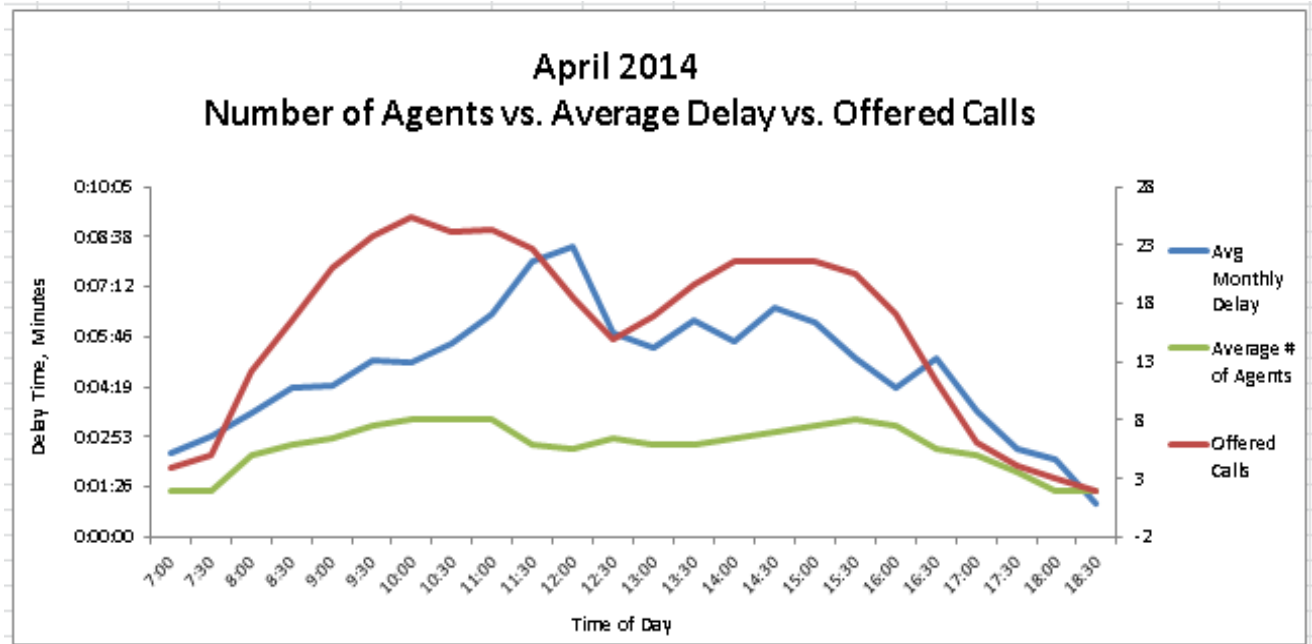
Similar to the expansion of the physician scheduling workload, looking at the totals for the entire Patient Access Services department clearly shows the department’s growth in just a year’s time. The total accounts created for FY14 is 183,235 (graph below). This number includes the Patient Access and Precertification departments. This data shows that the most growth occurred during the last six months of FY14, before the addition of full time employees to take on this expanded workload.



Additional total growth in the Central Scheduling Department can be seen by observing the total PHS procedures scheduled (graph below). The total number of procedures scheduled for FY14 is 392,428. This data remains relatively stable with each month scheduling around 31,000 to 38,000 procedures. The exception to this is a sharp decline in February with only 26,511 procedures scheduled. Factors that could have contributed to this decline were the harsh winter weather and the fewer number of days in this month.



In the case study of the Central Scheduling staffing ratios data for April 2014, a relationship can be seen between average number of agents, number of offered calls, and average monthly delay. During peak call times of 10AM-3PM, average delay increases. Average delay also spikes up around 12PM even though there is a drop in offered calls because fewer agents are on the phones due to scheduling or are breaking for lunch. To solve this problem, more agents are needed during peak call times. This can be accomplished by hiring more employees and staggering lunch times.



Conclusion

The results implicate a need for improvement in specific department areas. In the beginning of June, the Central Scheduling Department implemented a new “pod” initiative, which breaks up the Central Scheduling colleagues into teams of four with the goal of increasing productivity. However, there is not enough data to determine the success or failure of this change initiative. Continued data analysis for future months will reflect the impact of this. With the addition of new full time employees starting in July 2015, the Patient Access Services Department will have more of the resources needed to respond to the high call volumes and departmental growth, which should increase the department’s productivity and service. Additionally, the onboarding of new hires as of July FY15 will alter the data for future months. The department is expecting to see improvement in all patient access areas due to this staffing increase. Additional data for FY15 is needed to measure the results of this hypothesis.

Continuous use of the LEAN philosophy is necessary for improvement. An article from Nursing Management states:

For the lean philosophy to meet its potential in healthcare services, leaders and managers must make a commitment to changes in organizational culture, thinking, and structure.

They must therefore regard lean processes, not a short term fix, but as a part of a long term program of change (Radnor 2009).

Overall, the data conversion into graphs for the department's visibility wall was a success in that it allows for easy tracking of departmental metrics and progress toward network goals. It also allows for the easy identification of improvement opportunities that can be used to foster problem-solving and team building within the department.

References

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