

Data Analysis Report

By Nnenna Eze

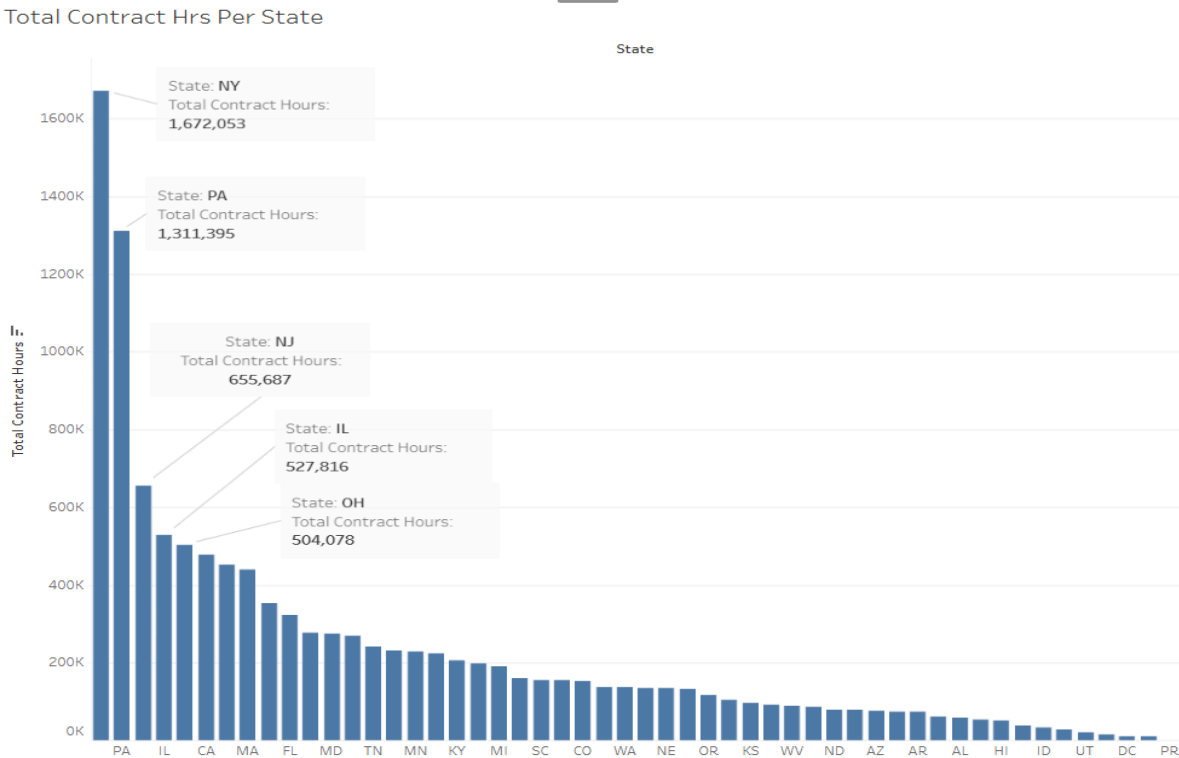
I. Introduction

The focus of this report is to use data published by the Centers for Medicaid and Medicare Services in order to suggest recommendations for the Health Sales Leadership team to expand staff support in long term care facilities. The data used to support these recommendations are from the most recent available quarter of the Payroll Based Journal (PBJ) Daily Nurse Staffing - Q2 2024 - as well as the most recent rating cycle in the CMS Provider Information dataset. The analysis considers several metrics, such as high contract hours, nurse staffing hours, and overall ratings of different long term care facilities. Citations can be found at the end of this report.

II. Analysis

A. Recommendation 1: Target High Population States

Long term care facilities in high populated areas have a high demand for staffing to provide proper care and attention to residents. Higher staffing requirements means these areas also have high contract hours, as seen in the data. Focusing on outreach in these high populated areas can provide {the company} with more staffing opportunities.



The bar graph above compares states based on their total number of contract hours in long term care facilities, which provides a good sense of the market size. The total number of contract hours was added to the data as a calculated field, summing the total number of contract hours per contracted role in each facility (i.e. RN contract hours, LN contract hours, CNA contract hours, etc). We can see there is clearly opportunity in New York, Pennsylvania, New Jersey, Illinois, and Ohio.

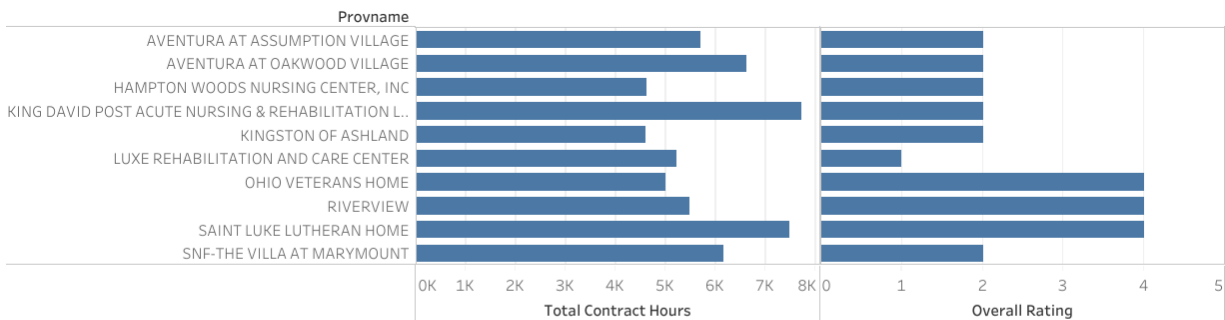
B. Recommendation 2: Target Top Contracted and Underperforming Facilities in Midwestern region

The data used provides information on each state, and for analytical purposes the states were grouped into their respective regions (Eastern, Western, Midwestern, Southern, etc.). With top states such New York, New Jersey, and Pennsylvania, the Eastern Coast was highest in total contract hours. The Midwestern region, which came second in high contract hours, has several other states with contract hours over 200,000. This includes Ohio, Wisconsin, and Minnesota. Focusing on sales and marketing in these areas may alleviate some pressure from competitors that might be found in higher populated states, while still providing ample opportunity for increased staffing.

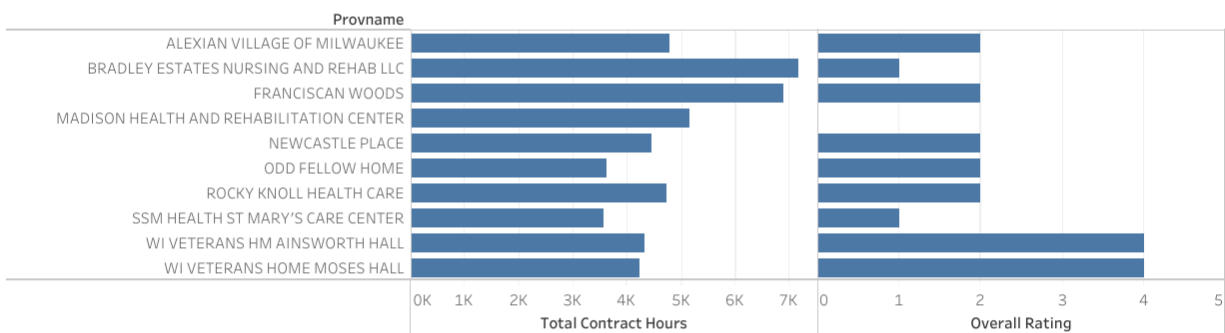
Total Contract Hrs per State per Region		
Regions	State	F
Eastern	NY	1,672,053
	PA	1,311,395
	NJ	655,687
	MA	439,996
	VA	277,548
	MD	273,801
	CT	153,862
	NH	131,147
	VT	104,265
	ME	92,570
	WV	89,784
	DE	85,716
	RI	38,341
	DC	9,885
	Total	5,336,052
Midwestern	IL	527,816
	OH	504,078
	WI	231,630
	MN	228,706
	MO	224,203
	KY	206,953
	IN	198,076
	MI	191,709
	CO	153,609
	IA	133,881
	NE	133,846
	KS	96,346
	ND	79,709
	MT	74,928
	SD	60,920
	WY	15,196
	Total	964,414 2,097,193

The data was filtered to provide the top 10 long term care facilities in each of these 3 states with the highest number of contract hours, shown below. These facilities can be focus areas for the {company} sales team.

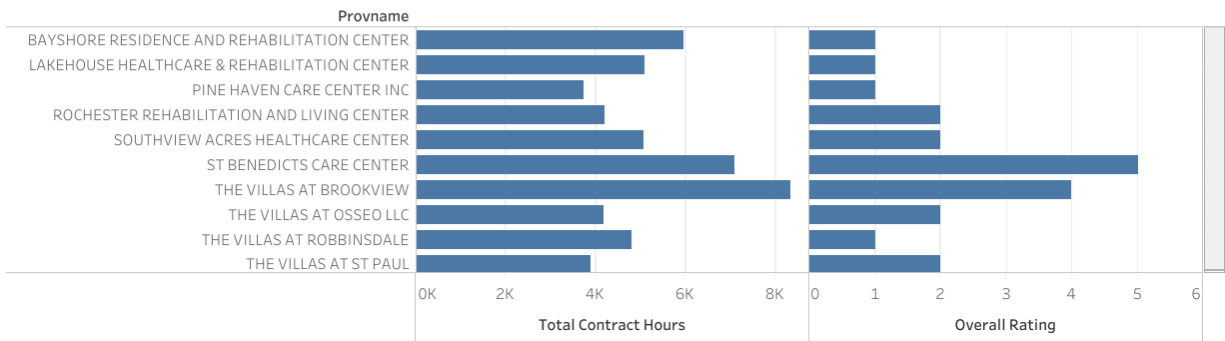
Top 10 Contracted Facilities in Ohio



Top 10 Contracted Facilities in Wisconsin



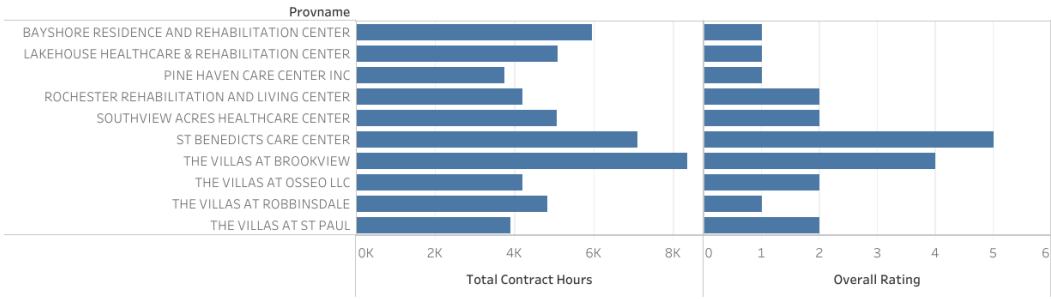
Top 10 Contracted Facilities in Minnesota



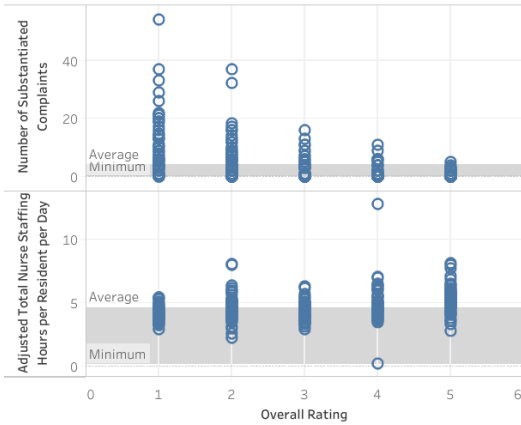
Additional analysis included factors such as ‘Overall Rating’ and ‘Adjusted Total Nurse Staffing Hours per Day’, obtained from the CMS Provider Information dataset. The data revealed that many of the long term care facilities in our focus group received low overall ratings (2-3 on a scale of 1-5), and they had lower Nurse Staffing Hours per Day than their higher rated counterparts.

Further digging showed several other contributing factors to this low score, including ‘Substantiated complaints’, which are complaints in the care facilities that were investigated and validated based on evidence. The data below shows a comparison of these discussed factors between our focus facilities and all of the facilities in their respective states, with the focus facilities highlighted.

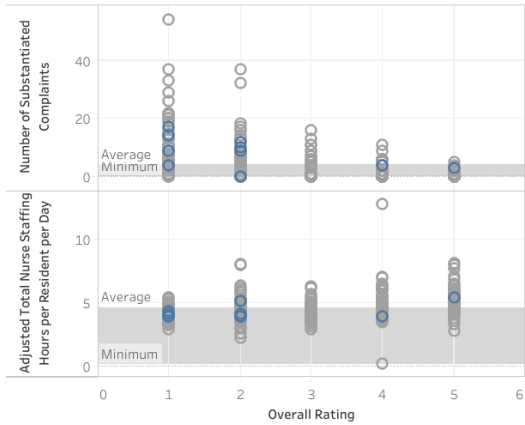
Top 10 Contracted Facilities in Minnesota



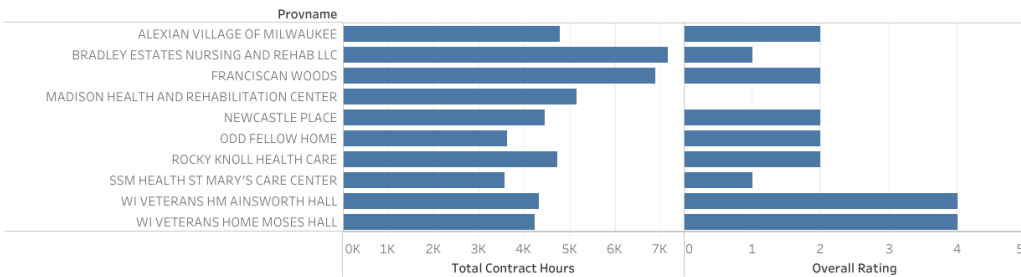
Overall Rating Compared to Other Factors (MN)



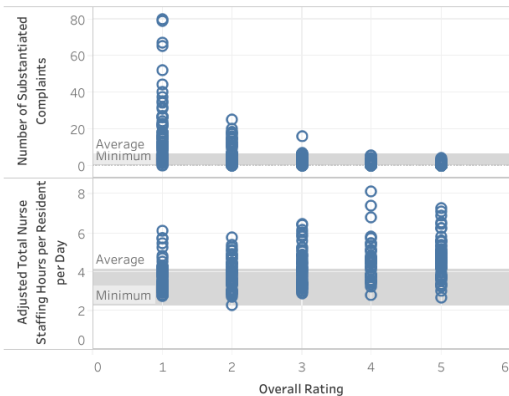
MN Top 10 Facilities Highlighted



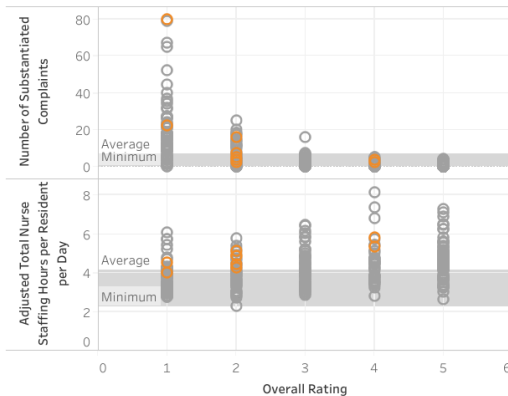
Top 10 Contracted Facilities in Wisconsin



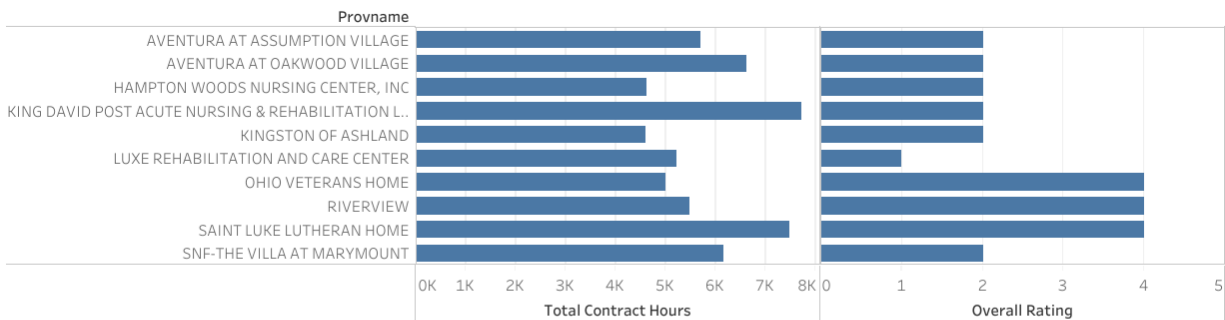
Overall Rating Compared to Other Factors (WI)



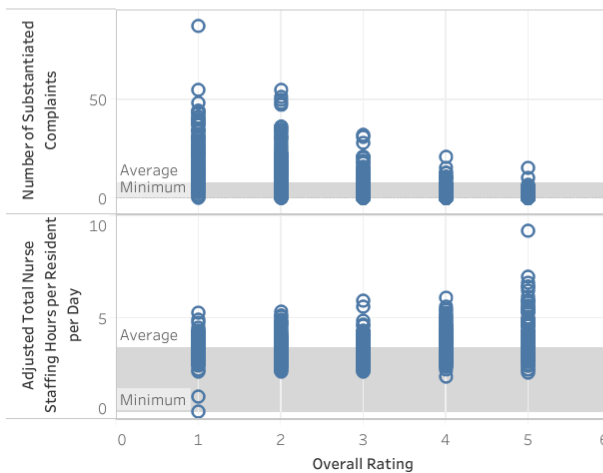
WI Top 10 Facilities Highlighted



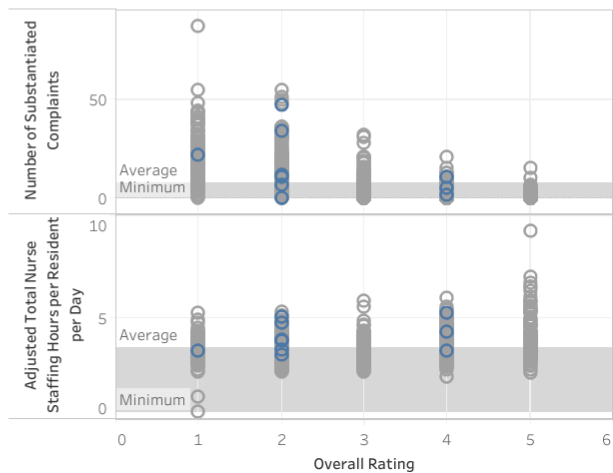
Top 10 Contracted Facilities in Ohio



Overall Rating Compared to Other Factors (OH)



OH Top 10 Facilities Highlighted

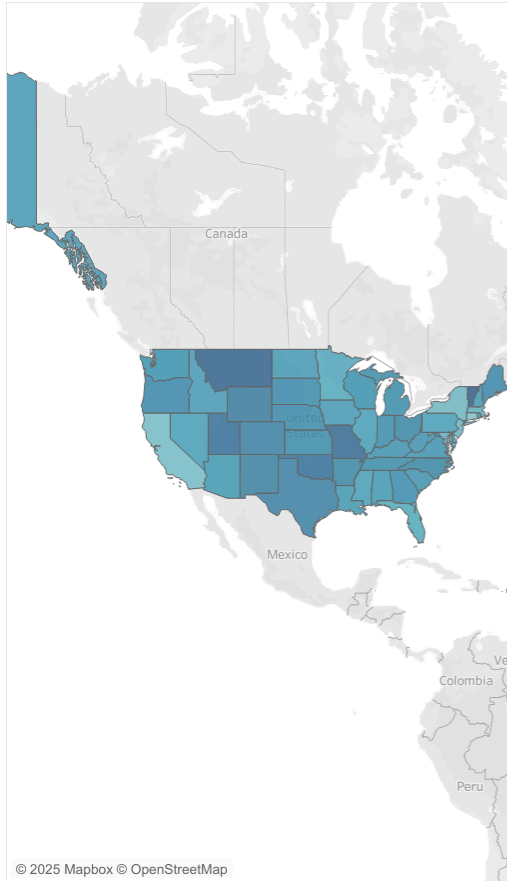


The graphs shown above include a reference band for the average of these factors within the discussed states (MN, WI, OH), proving that several of the focus facilities fall right around or below the average. The data can be extrapolated to show that these facilities may benefit from more staffing, and more specifically, trusted staffing from {company}. With our own company data we can provide insight on how our staffing services have provided competent and attentive staff that facility residents and administrators can rely on.

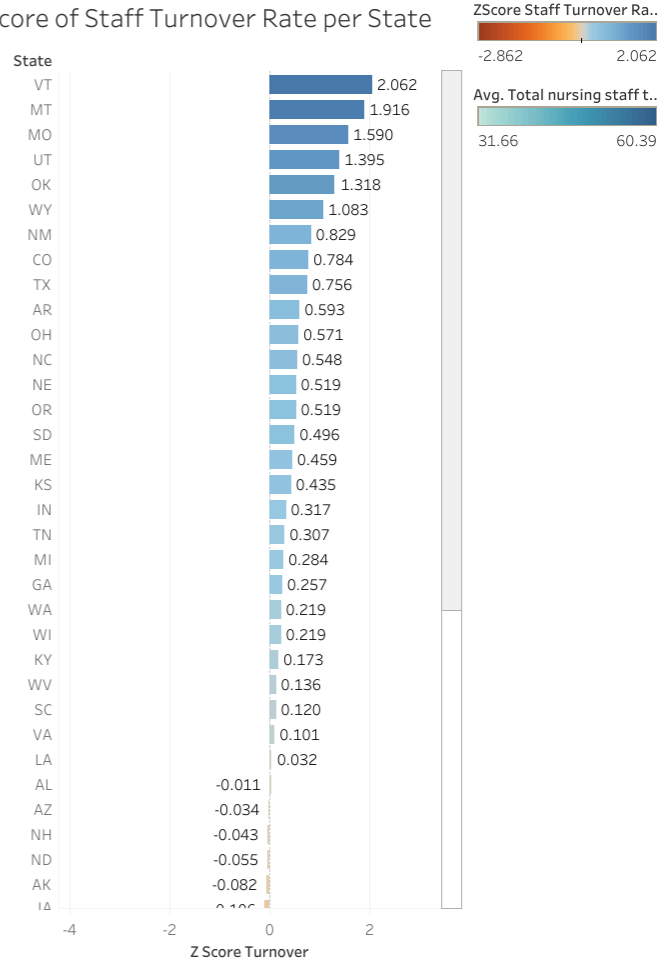
C. Recommendation 3: Target Facilities with High Turnover Rates

Long term care facilities with high turnover rates have the potential for more staffing opportunities. The nursing staff turnover rate is provided by the CMS Provider Information dataset, and placed on a map to show the average nursing staff turnover rate in each state. It is found that the top three states with the highest consistent turnover rates are Vermont, Montana, and Missouri. See below:

Avg. Nursing Staff Turnover Rate per State



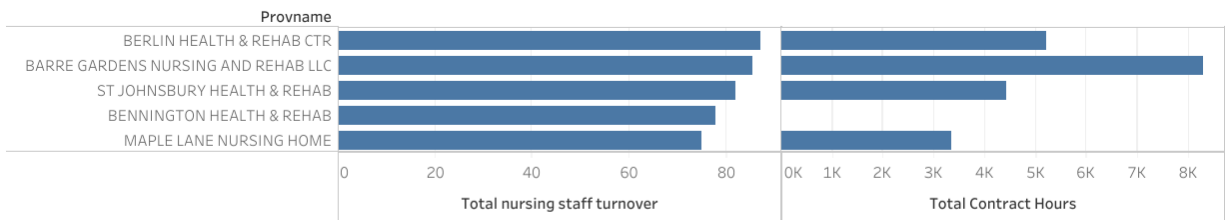
Z Score of Staff Turnover Rate per State



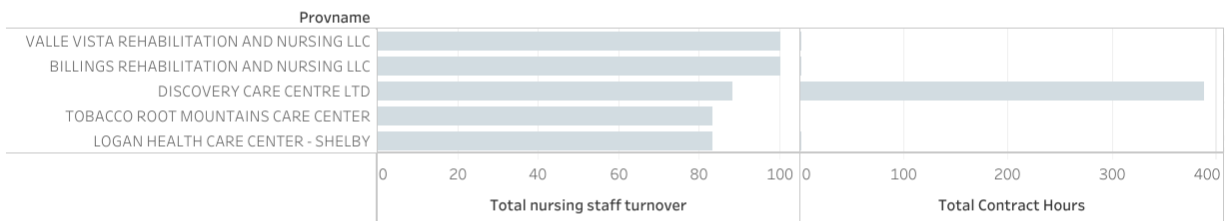
The z score is an added calculated field, showing how many standard deviations away the nursing staff turnover rate is (per state) from the national average. A positive z score, which is seen for VT, MT, and MO, means the value is above the average. In this case, it proves our top three states have a turnover rate well above the average across all states.

The data is then filtered to view the top 10 facilities in each of the 3 mentioned states with the highest nursing staff turnover rate. See below:

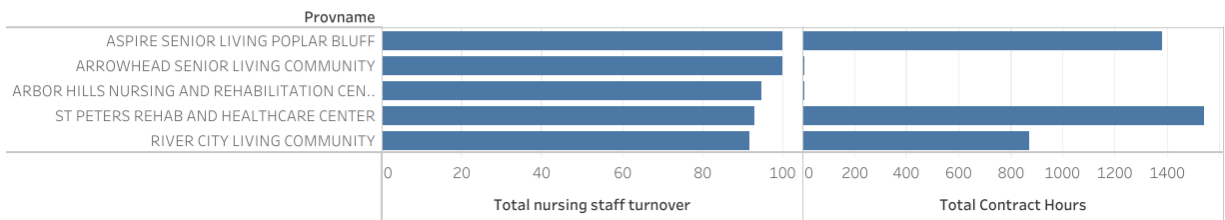
Vermont Top 5 Facilities with Highest Turnover Rates



Montana Top 5 Facilities with Highest Turnover Rates



Missouri Top 5 Facilities with Highest Turnover Rates



Taking a look at the contract hours in the table above, there are some facilities with higher contract hours, meaning contract work is available there and {company} can utilize this. For the facilities with lower contract hours, outreach can be done by the sales and marketing team to show that with low contract hours and high turnover rates, these facilities can benefit from more staffing, and it is in their interest to partner with {company} to find available and reliable staff.

III. Conclusion

In summary, the data analyzed from PBJ Daily Nurse Staffing and CMS Provider Information show promise for the following recommendations to {company} Health Sales Leadership team

1. Focus on High Populated States with High Contract Hours
2. Focus on facilities in Ohio, Minnesota, and Michigan with the top 10 highest contract hours and low overall ratings

These recommendations can also be scaled to be used in other areas nationwide, backed by data so {company} has the confidence that it will work. With these insights, {company} can ensure improved sales and increased staffing opportunities.

IV. Citations

CMS website: PBJ Daily Nursing Staff Data -

<https://data.cms.gov/quality-of-care/payroll-based-journal-daily-nurse-staffing/data>

CMS website: Provider Information Dataset -

<https://data.cms.gov/provider-data/dataset/4pq5-n9py#data-table>