PART-1
CMS Nurse Staffing Data Analysis

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1. INTRODUCTION TO CLIPBOARD HEALTH

About Clipboard Health: Clipboard Health is a staffing platform that provides workforce solutions to healthcare facilities, specializing in flexible staffing options across long-term care facilities nationwide.

Problem Statement: In the ever-evolving healthcare environment, maintaining optimal staffing levels is critical. This analysis uses staffing data to understand trends, measure contractor reliance, and recommend actionable insights to improve operational efficiency and cost management.

2. CASE STUDY OVERVIEW

Objective:

To leverage the Centers for Medicaid and Medicare Services (CMS) Payroll Based Journal (PBJ) Daily Nurse Staffing dataset to provide actionable recommendations for Clipboard Health's sales leadership. The focus is on optimizing contractor deployment and identifying staffing trends across facilities, states, and over time.

3. DATASET INFORMATION

•**Dataset Name**: CMS Payroll-Based Journal (PBJ) Daily Nurse Staffing - 2024 Q1.

•**Data Sources**: PBJ staffing data, including hours worked by Registered Nurses, Licensed Practical Nurses, Certified Nursing Assistants, and MedAides, separated by employees and contractors.

- **Key Columns**:

- **PROVNAME**: Facility Name

- **STATE**: U.S. State

- **WorkDate**: Date of work entry

- **MDScensus**: Patient census count

- **Hours Worked by Role**: Total, employee, and contractor hours for RNs, LPNs, CNAs, and MedAides

This data enables an understanding of contractor use, staffing intensity, and facility-specific trends to provide insights on optimal staffing strategies.

4. DASHBOARD KEY FINDINGS AND INSIGHTS

- View live Dashboard at :View in Power BI

Summary KPIs

Important KPIs :

- **Total Contractor Hours**: Shows the dependence on contractors at each facility.

- **Contractor%**: Indicates the contractor reliance

- **Contractor% by Role** (RN, LPN, CNA, MedAide): Highlights specific roles with high contractor reliance.

- **Hours per Patient per Day (HPPD)**: Indicates staffing intensity by showing hours worked per patient.

- **Average Rating:** Average of the overall Rating of the Facility.

MONTH
All

FACILITY
All

STATE
All

CLEAR

SUMMARY KPIs

FACILITY INSIGHTS

STATE INSIGHTS

MONTHLY INSIGHTS

373.2M
Total Hours Worked

30M
Total Hours Contractor

8.0%
Contractor %

4.5M
HPPD

83.42
Average Census

2.85
Avg Rating

106.82
Avg Certified Beds

82.96
Avg Residents per Day

8.98
LPN Contractor %

7.58
CNA Contractor %

6.62
RN Contractor %

2.64
MedAide Contractor %

4A. Provider(Facility) Insights

Key Visuals:

1. **Facility Ranking by Contractor Percentage and HPPD :** This table ranks facilities by **Contractor Percentage** and **HPPD** (Hours per Patient per Day), showing the proportion of hours worked by contractors and the staffing intensity per patient.

2. **Top Facilities by Contractor Reliance :** The Bar Chart Displays the top facilities based on contractor reliance, focusing on the percentage of hours worked by contractors.

3. **Distribution of Contractor Hours by Role in Top Facilities :** The Stacked Bar Chart shows the distribution of contractor hours across roles (RN, LPN, CNA, MedAide) within the top facilities.

CLIPBOARD HEALTH

MONTH: All | FACILITY: All | STATE: All | CLEAR

- SUMMARY KPIs
- FACILITY INSIGHTS
- STATE INSIGHTS
- MONTHLY INSIGHTS

Distribution of Contractor Hours

RN 14.28%
MedAide 0.97%
LPN 28.33%
CNA 56.42%

Staffing Contractors
- CNA
- LPN
- MedAide
- RN

Total Hours Worked	HPPD	Contractor %
373.2M	4.5M	8.0%
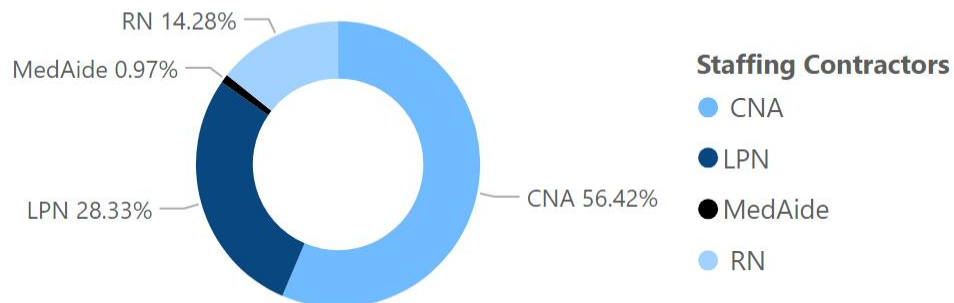
Distribution of Roles in top 10 Facilities with High Contractor Percentage
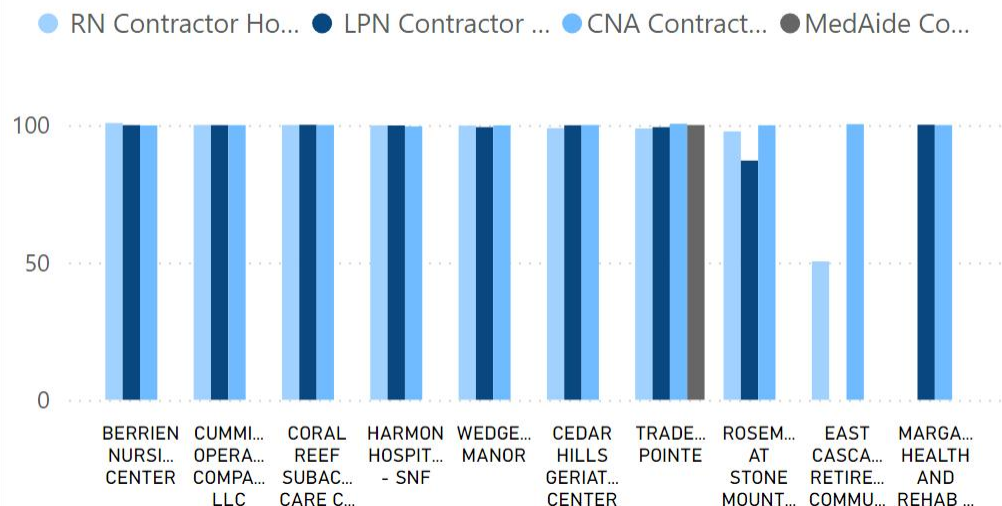
Legend: RN Contractor Ho... ● LPN Contractor ... ● CNA Contract... ● MedAide Co...

Facilities: BERRIEN NURSI... CENTER, CUMMI... OPERA... COMPA... LLC, CORAL REEF SUBAC... CARE C..., HARMON HOSPIT... - SNF, WEDGE... MANOR, CEDAR HILLS GERIAT... CENTER, TRADE... POINTE, ROSEM... AT STONE MOUNT..., EAST CASCA... RETIRE... COMMU..., MARGA... HEALTH AND REHAB ...

Facility Ranking by HPPD and Contractor Percentage

Facility	%Contractor Hours	HPPD	Rating
MILLER'S MERRY MANOR	12.7%	3724.9	★
LITTLE SISTERS OF THE POOR	19.4%	2230.1	★
JEANNE JUGAN RESIDENCE	3.8%	1510.8	★
PARKVIEW CARE CENTER	5.6%	1440.1	★
ST ANN HEALTH AND REHABILITATION CENTER	0.0%	1215.7	★
GOOD SHEPHERD LUTHERAN HOME	14.4%	1089.2	★
HILLCREST HOME	4.5%	1066.8	★
SOUTHWEST LOUISIANA WAR VETERANS HOME	0.0%	1042.3	★
CHILDRENS HC ORG NO CA SARATOGA PEDIATRIC SUBACUTE	0.1%	1041.4	★
BETHESDA HOME	3.4%	1019.9	★
MOUNTAINS COMMUNITY HOSP DPSNF	1.0%	1011.4	★

Key Findings:

1. **High Contractor Usage**: Facilities like **Berrien Nursing Center** ,**Cumming Operating Company LLC** etc. have contractor percentage of 99.9%, respectively, indicating significant contractor reliance, particularly in the RN and CNA roles.

2. **Intensive Workload in High HPPD Facilities**: Facilities like **Miller's Merry Manor** and **Little Sisters of the Poor** have exceptionally high HPPD values (3724.9 and 2230.1, respectively) and high average rating, but low contractor hours pencentage (12.7% and 19.4%) indicating higher staffing needs relative to patient load.

3. Heavy Reliance on CNA Contractors contribute about 56.42% of all the contracting hours.

4B. State Insights

Key Visuals:

1. **Top 10 States by Contractor Percentage:** The Bar Chart ranks the top 10 states by contractor percentage, showing the total contractor hours relative to total hours worked in each state to Identify states with high contractor reliance.

2. **Contractor Percentage by Role in Top 10 States:** The Stacked Bar Chart breaks down contractor hours by role (RN, LPN, CNA, MedAide) within the top 10 states by contractor reliance. Offers detailed insights into role-specific contractor demand across states.

3. **Patient Load (HPPD) by State:** The Map shows the **HPPD** across states, using color-coding and bubble size to indicate states with higher workload intensity.

4. **Contractor Hours by State with Facility Count :**The Bar Chart shows contractor hours in each of the top states along with the number of facilities in each state to pinpoint states with high contractor demand and significant facility counts.
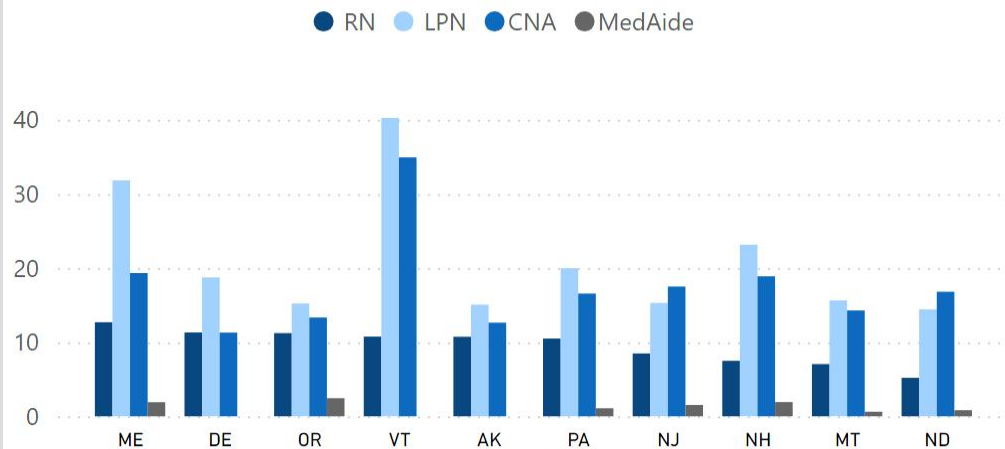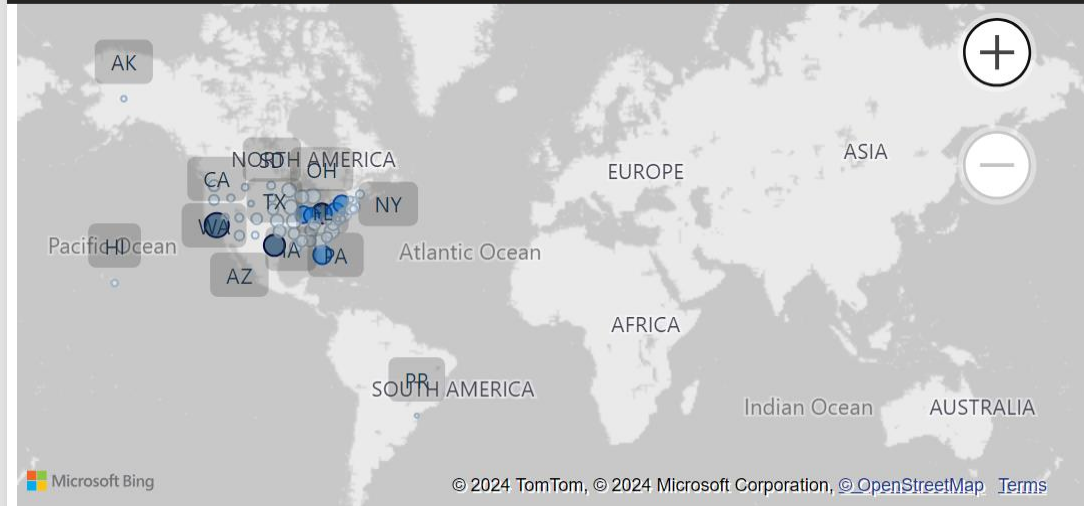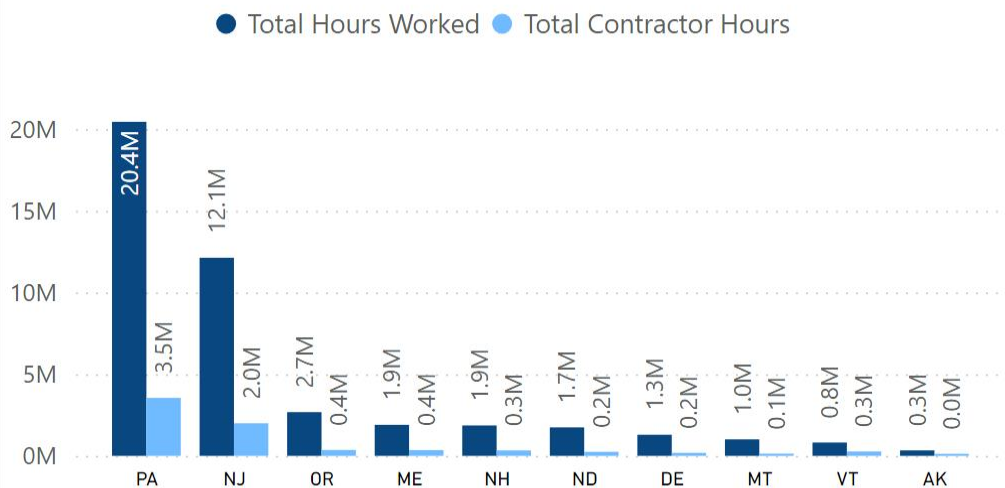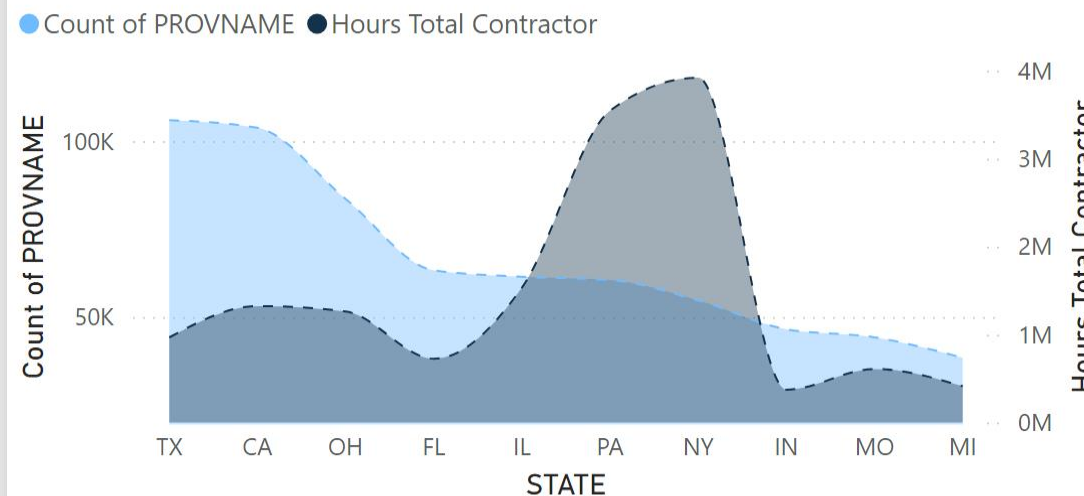
Key Findings

1. **Top States by Contractor Usage**: States such as **Pennsylvania (PA)** and **New Jersey (NJ)** are among the highest in total contractor hours, with **PA** showing approximately **20.4M total hours** and a significant portion of it being contractor-driven

2. **States with High Patient Load (HPPD)**: States like **California(CA)** and **Texas(TX)** demonstrate high patient load with substantial figures and large number of facilities, indicating that they have a greater need for intensive staffing

4C. Monthly Trends

KPI Metrics:

1. **Total Hours Worked by Month**: Shows month-over-month staffing levels.

2. **Contractor vs. Total Hours by Month**: Tracks the monthly split between contractor and total hours to gauge reliance over time.

3. **Monthly HPPD**: Reveals any fluctuations in staffing intensity over the quarter.

Key Visuals:

1. **Line Chart for Census by Month**: Displays monthly staffing intensity trends.

2. **Line Chart for Distribution of Contractor Hours in various roles by Month**: Visualizes monthly reliance on various contractors .

MONTH
All

FACILITY
All

STATE
All

CLEAR
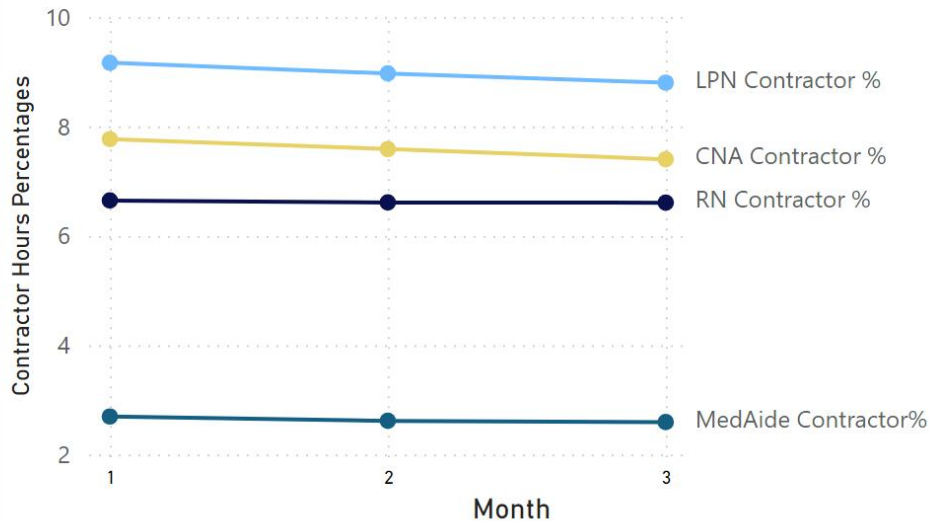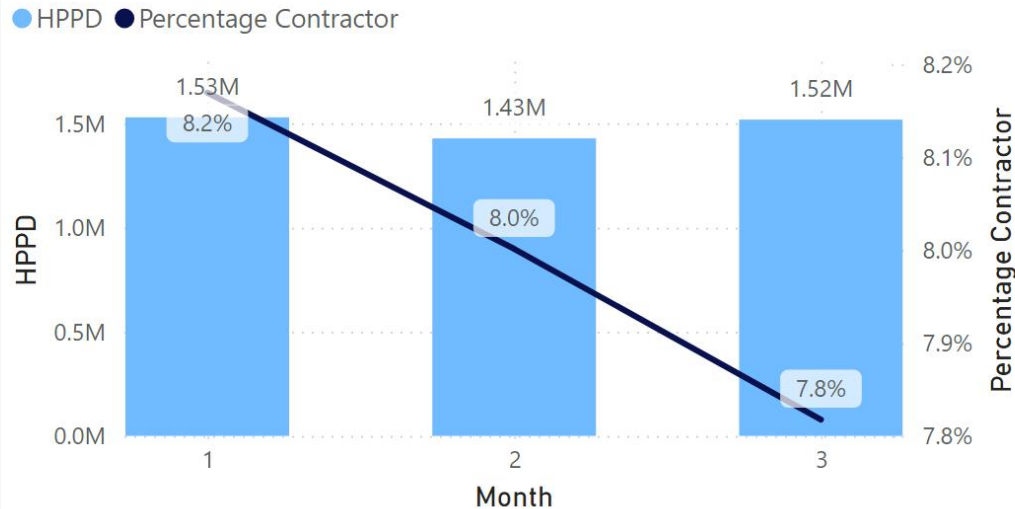
SUMMARY KPIs

FACILITY INSIGHTS

STATE INSIGHTS

MONTHLY INSIGHTS

## Monthly Distribution of Roles in Contracting Hours

LPN Contractor %
CNA Contractor %
RN Contractor %
MedAide Contractor%

HPPD and Percentage Contractor by Month

● HPPD ● Percentage Contractor

1.53M — 8.2%
1.43M — 8.0%
1.52M — 7.8%

Total Hours Worked and Total Contractor Hours by Month

● Total Hours Worked ● Total Contractor Hours

127M 10M
119M 10M
127M 10M

Average Census by Month

Average Census

83.70
83.60
82.99
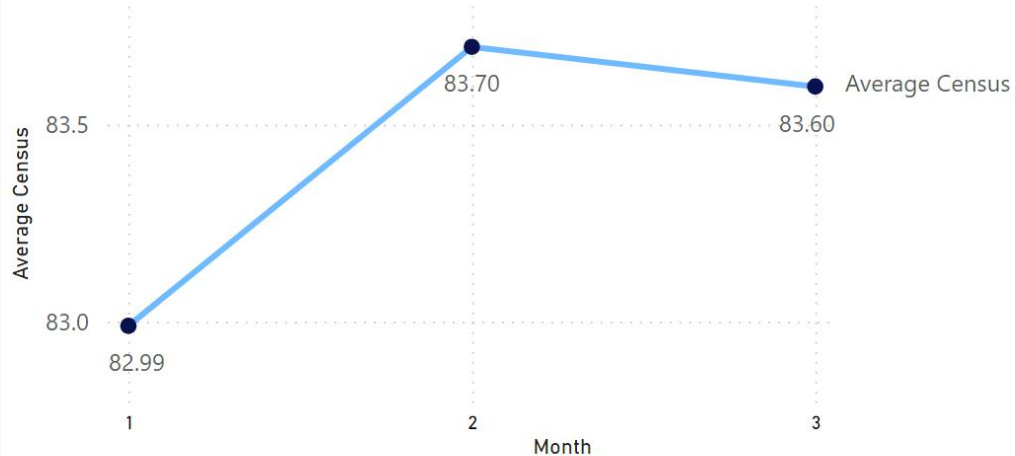
Key Findings:

1. **Increasing Contractor Percentage by Month**: The **Contractor Percentage** decreased from **8.2%** in January to **7.8%** in March, showing a trend towards lower contractor reliance over time.

2. **Fluctuations in Average Census and Staffing Intensity**: The average census shows a slight upward trend across the quarter, from **82.99** in January to **83.70** in March. Meanwhile, **HPPD** showed a dip in February, indicating fluctuating workload intensity.

5. RECOMMENDATIONS AND SUGGESTED ACTIONS

Recommendation 1: Expand Contractor Partnerships with High rated Facilities

- **Insight**: Facilities like **Miller's Merry Manor** and **Little Sisters of the Poor** have high patient load and rating but show low reliance on contractors.

- **Action**: Build targeted partnerships with highly rated facilities to position Clipboard Health as a trusted staffing provider.

| Facility	%Contractor Hours	HPPD ▼	Rating
MILLER'S MERRY MANOR	12.7%	3724.9	⭐
LITTLE SISTERS OF THE POOR	19.4%	2230.1	⭐
JEANNE JUGAN RESIDENCE	3.8%	1510.8	⭐
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CHILDRENS HC ORG NO CA SARATOGA PEDIATRIC SUBACUTE	0.1%	1041.4	⭐
BETHESDA HOME	3.4%	1019.9	⭐
MOUNTAINS COMMUNITY HOSP DPSNF	1.0%	1011.4	⭐

Facility Ranking by HPPD and Contractor Percentage

Recommendation 2: Focus Contractor Recruitment in Pennsylvania and New Jersey

- Insight: Pennsylvania has 20.4M total hours worked, with high contractor percentages across RN and CNA roles.

- Action: Launch dedicated recruitment campaigns in Pennsylvania and New Jersey to meet high contractor demand and strengthen Clipboard Health's market presence.
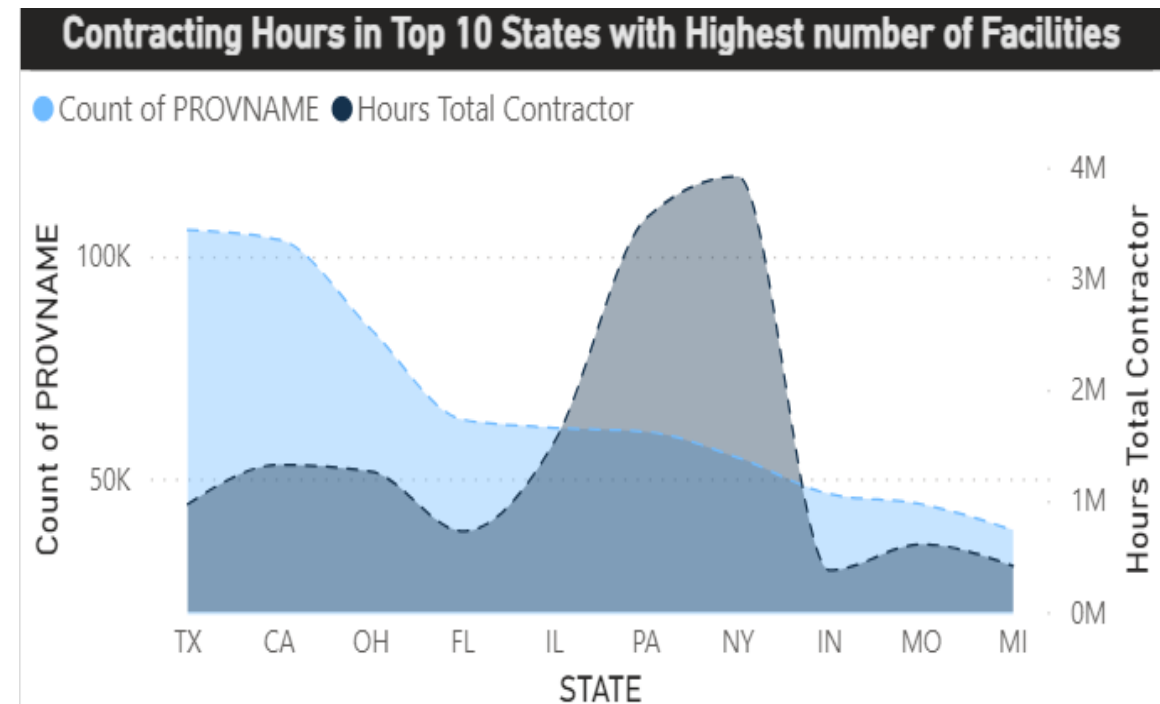

Top 10 States by Contractor Percentage

● Total Hours Worked ● Total Contractor Hours
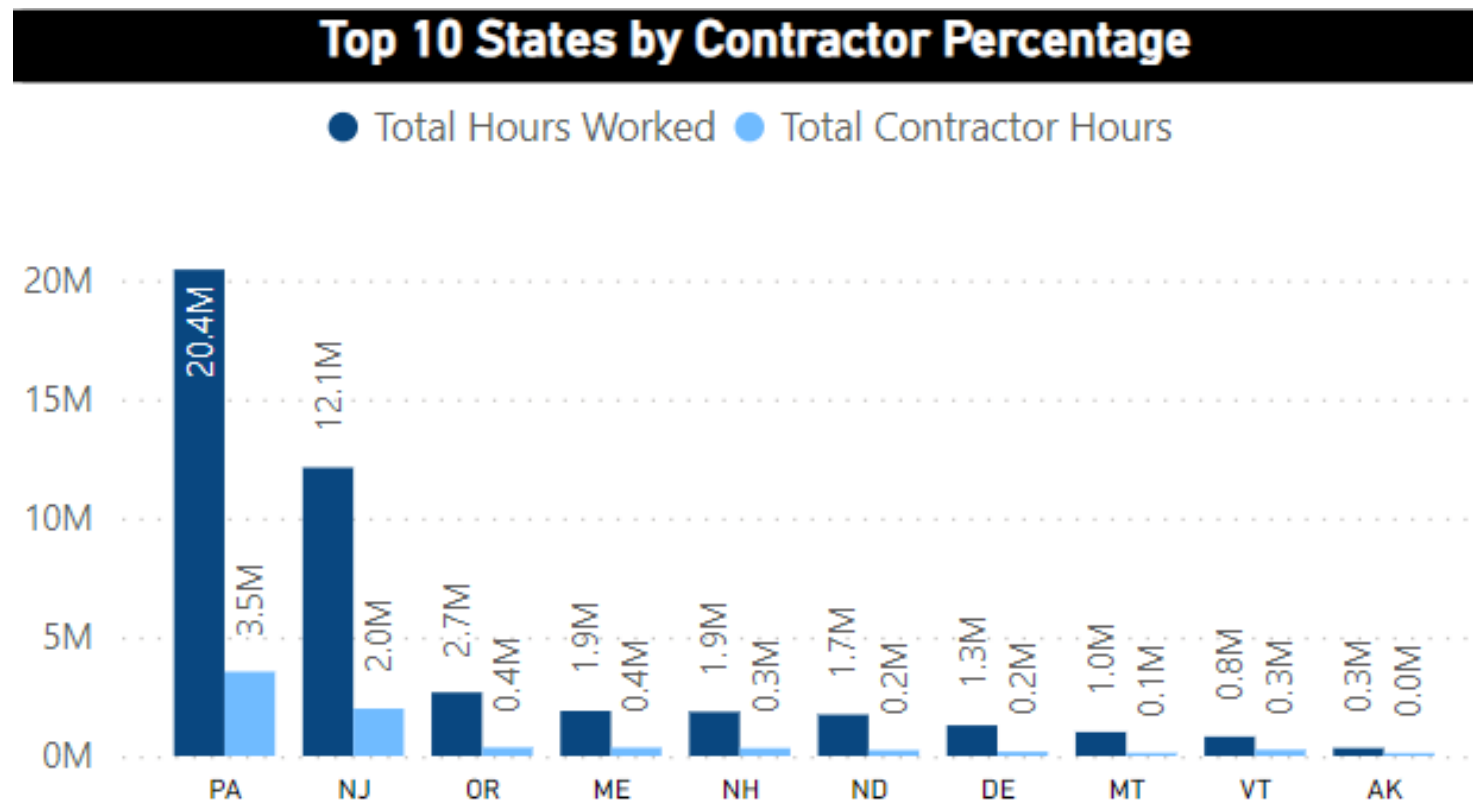
Recommendation 3: Prioritize Support for High HPPD States Like California and Texas

- **Insight**: **California**, **Ohio** and **Texas** have high HPPD values and number of facilities, indicating a greater workload per patient.

- **Action**: Increase contractor availability in high-HPPD states with large facilities, especially for CNA and LPN roles, to relieve staffing strain and enhance patient care.


Patient Load (HPPD) by STATE

Contracting Hours in Top 10 States with Highest number of Facilities
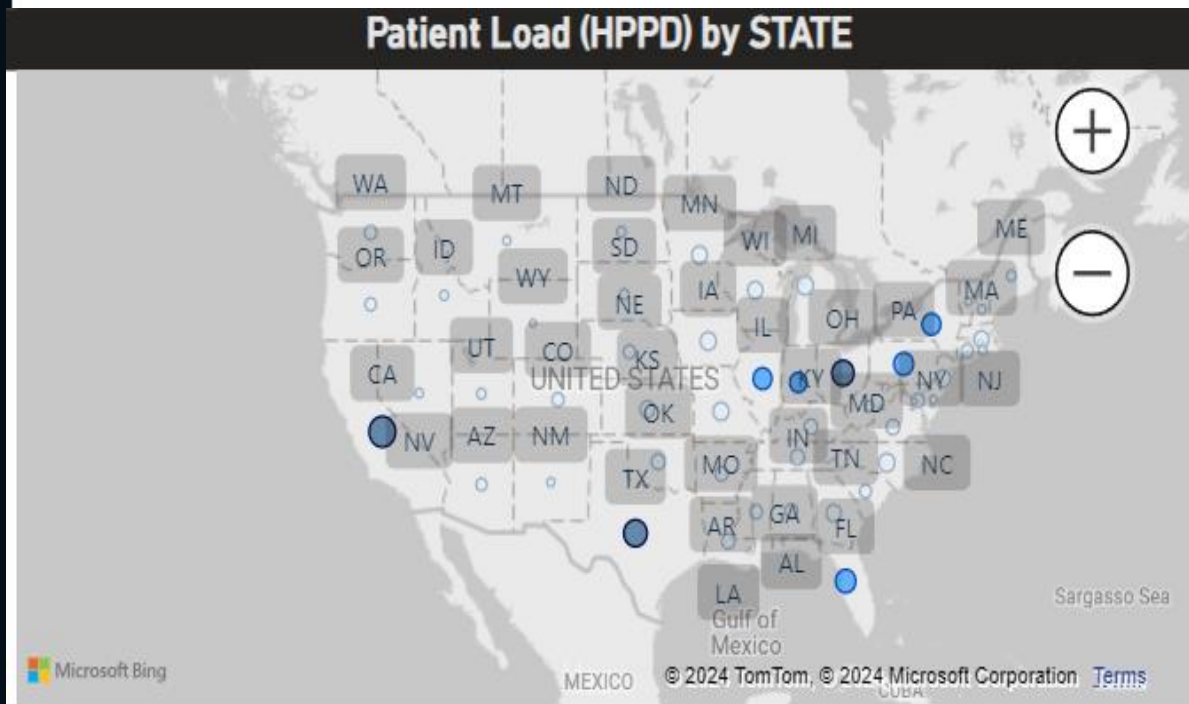
Recommendation 4: Prepare Monthly Contractor Pipelines to Meet Changes in Demand

1. **Insight**: Contractor reliance has declined each month, with the **Contractor Percentage** decreasing from **8.2% to 7.8%** over Q1.

2. **Action**: Forecast and prepare monthly contractor pipelines, ensuring staffing availability aligns with facility needs as contractor demand changes over time.

HPPD and Percentage Contractor by Month

11/6/2024
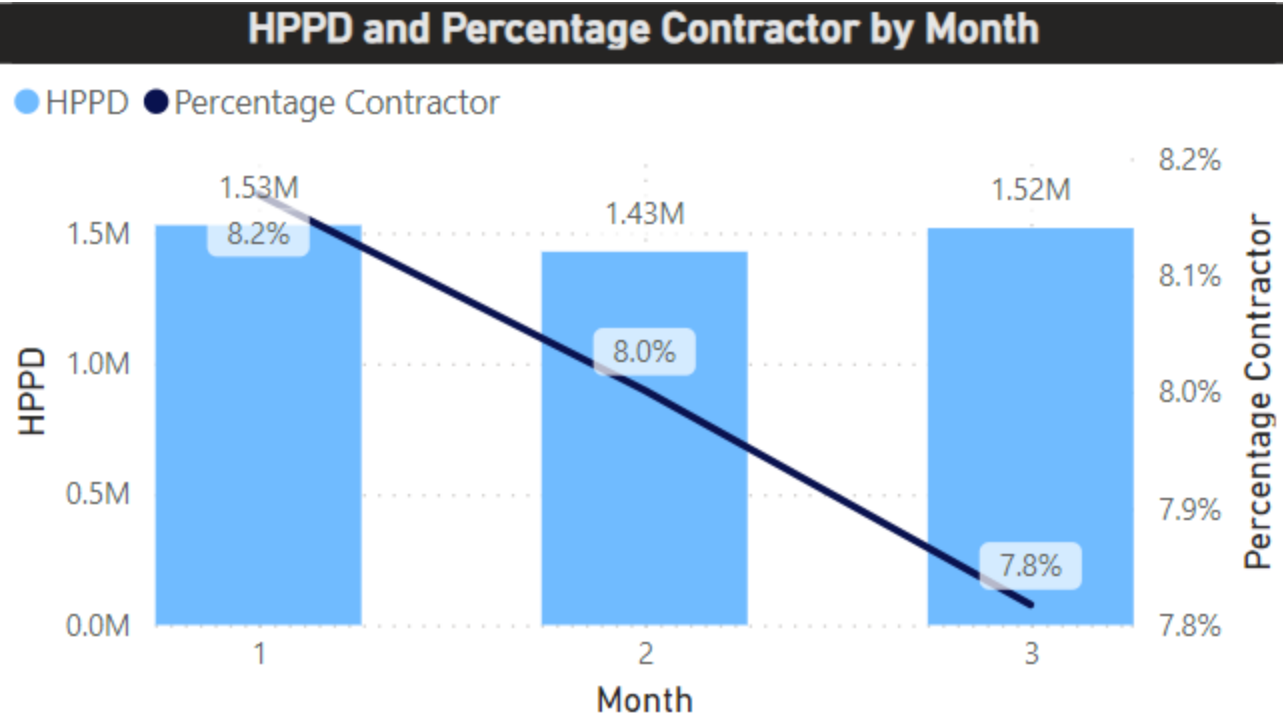
Recommendation 5: Address CNA and LPN Contractor Reliance in Key Facilities

1. **Insight**: CNA and LPN roles account for **56.42%** and **28.33%** of contractor hours, respectively, in high-reliance facilities.

2. **Supporting Visual**: "Distribution of Contractor Hours by Role" pie chart.

3. **Action**: Expand contractor availability for CNA and LPN positions, particularly in facilities with high contractor ratios, to stabilize staffing levels and reduce reliance on temporary staff for critical patient care roles.

Distribution of Contractor Hours

RN 14.28%
MedAide 0.97%
LPN 28.33%
CNA 56.42%

Staffing Contractors
- CNA
- LPN
- MedAide
- RN
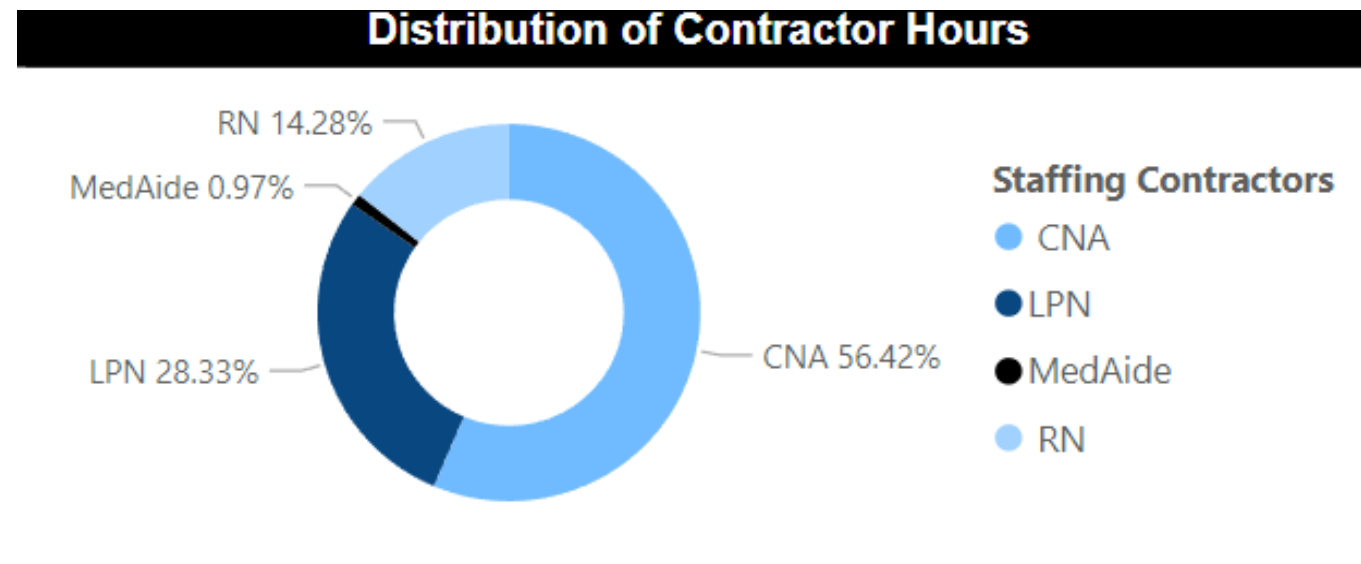
6. CONCLUSION

This dashboard and report provide a data-driven foundation for Clipboard Health to make informed staffing and sales strategies. By analyzing state, facility, and monthly trends, Clipboard Health can align its contractor workforce with real-time staffing demands, building a strong, reliable presence in critical care facilities across the U.S. These insights and recommendations enable Clipboard Health to support both its workforce and partner facilities effectively, addressing the evolving challenges of healthcare staffing.