**Comprehensive Report: Ask Phase - Clipboard Health CMS Data Analysis Project**

**1. Executive Summary**

This report details the "Ask" phase of a data analysis project undertaken for Clipboard Health. The primary objective of this project is to leverage publicly available data from the Centers for Medicare & Medicaid Services (CMS) to provide data-driven recommendations to the Clipboard Health Sales Leadership Team. Specifically, we aim to analyze the Payroll Based Journal (PBJ) Daily Nurse Staffing and Non-Nurse Staffing datasets for Quarter 2 of 2024, alongside other relevant CMS datasets. The goal is to understand staffing patterns in US nursing homes, particularly the balance between permanent employees and contract staff (like those provided through platforms like Clipboard Health). By formulating and answering a series of key questions, we seek to uncover actionable insights that will enable the Sales Leadership Team to refine their sales strategies, better target potential clients, and articulate the value proposition of Clipboard Health's staffing solutions more effectively. This report outlines the defined business task, the problem being addressed, the specific questions that will guide our analysis (framed using the SMART criteria), the key stakeholders involved, the metrics for measuring the success of this project, and the tasks already completed during this initial "Ask" phase.

**2. Business Task Definition**

The overarching business task for this data analysis project is to **provide the Clipboard Health Sales Leadership Team with data-backed insights and strategic recommendations to enhance their sales effectiveness and market penetration within the long-term care facility sector.** This involves understanding the current landscape of nursing home staffing, identifying pain points and opportunities, and ultimately demonstrating how Clipboard Health's services can address the needs of these facilities. In simpler terms, we want to use data to help Clipboard Health's sales team sell more effectively to nursing homes by showing them, with real data, where Clipboard Health can best help.

**3. Problem Statement**

Clipboard Health operates in a competitive market, providing a digital platform for healthcare facilities to source temporary staffing. To succeed, their sales efforts must be highly targeted and persuasive. The challenge is to move beyond general sales pitches and provide concrete, data-driven evidence of the value Clipboard Health brings to long-term care facilities. Specifically, we aim to address the following key problems through data analysis:

* **Understanding Market Needs:** While it's known that nursing homes use both permanent employees and contract staff, the *extent* and *patterns* of this usage are not fully quantified across the industry. We need to understand how reliant facilities are on contract staffing, in which roles, and under what circumstances.
* **Identifying Target Clients:** Not all nursing homes are the same. Some may be more reliant on contract staff than others, or face specific staffing challenges that Clipboard Health is uniquely positioned to solve. We need to identify segments of nursing homes that are the most promising targets for Clipboard Health's sales efforts. Simply put, which nursing homes are most likely to need and benefit from Clipboard Health?
* **Quantifying Value Proposition:** Clipboard Health offers benefits like speed, flexibility, and access to a wide pool of professionals. However, these benefits need to be translated into tangible value for facilities, ideally with data to support the claims. For example, can we demonstrate, using industry data, the potential cost savings or efficiency gains facilities could achieve by using a platform like Clipboard Health?

By analyzing CMS data, we can move beyond assumptions and anecdotal evidence to develop a data-driven understanding of the nursing home staffing market. This will empower the Sales Leadership Team to have more informed conversations with potential clients, tailor their sales strategies, and demonstrate the clear value proposition of Clipboard Health.

**4. Guiding Questions (SMART Framework)**

To effectively address the problem statement and achieve our business task, we have formulated a set of guiding questions. These questions are designed to be **S**pecific, **M**easurable, **A**ction-oriented, **R**elevant, and **T**ime-bound (SMART), ensuring that our analysis is focused and leads to practical recommendations.

Here are the five SMART questions that will guide our data analysis:

**4.1. Question 1: Refined RN Staffing Analysis**

* **Question:** "What is the ratio of contract hours versus employee hours for Registered Nurses (RNs) in Q2 2024 in facilities with fewer than 120 residents?"
  + **Layman's Explanation:** We want to figure out, for smaller nursing homes (those with less than 120 residents), how much of the work done by Registered Nurses is performed by temporary nurses (contract staff) compared to permanent nurses (employees) during the second quarter of 2024. Think of it as asking: in smaller facilities, are they relying more on temporary RNs or permanent RNs?
  + **Data Analyst Note:** This question focuses on Registered Nurses because they are a critical staffing role in nursing homes. We are specifically looking at smaller facilities as preliminary analysis suggests they may face unique staffing pressures due to budget constraints or difficulties in attracting full-time staff. By calculating the ratio of contract RN hours to total RN hours in these facilities, we can identify if smaller facilities are disproportionately reliant on contract RNs. A high ratio would indicate a potential need for a more flexible and efficient staffing solution like Clipboard Health. The insight gained will help target sales efforts towards facilities that are likely experiencing this specific staffing challenge.

**4.2. Question 2: Intra-Quarter Variation for CNAs**

* **Question:** "What are the short-term (within Q2 2024) changes in the ratio of temporary versus permanent staffing for Certified Nursing Assistants (CNAs), and how do these changes relate to fluctuations in the number of residents?"
  + **Layman's Explanation:** We plan to look at how the balance between temporary CNAs and permanent CNAs changes day by day or week by week during the second quarter of 2024. We also want to see if these changes in CNA staffing match up with changes in the number of residents in the nursing homes. Essentially, we're asking: do facilities bring in more temporary CNAs when they have more residents to care for, and if so, how quickly does this staffing adjust?
  + **Data Analyst Note:** Certified Nursing Assistants (CNAs) provide essential daily care to residents. Examining short-term fluctuations in CNA staffing levels is important for understanding the operational agility of nursing homes. By correlating these staffing changes with the daily resident census (MDScensus), we can determine if facilities are reacting to changes in patient load by adjusting their contract CNA staffing. Spikes in temporary CNA usage during periods of higher resident census could indicate a reactive, and potentially less efficient, staffing approach. Identifying these patterns can help demonstrate the value of Clipboard Health's on-demand staffing platform in providing timely and flexible staffing adjustments, potentially enabling facilities to move from reactive to proactive staffing management.

**4.3. Question 3: Comparative Trend and Cost Correlation Analysis**

* **Question:** "Over Q2 2024, how do temporary staffing trends differ between direct care (nursing) and support (non-nursing) roles, and what correlations exist between these trends and extra costs such as overtime expenses, temporary staffing fees, and penalties?"
  + **Layman's Explanation:** We want to compare how the use of temporary staff changes over time during Q2 2024 for both nurses and other healthcare staff (like therapists or administrators). We also want to see if using more temporary staff is linked to higher costs for the nursing homes, such as paying staff overtime, agency fees, or fines. In simple terms, we're asking: is relying more on temporary workers associated with higher expenses for facilities, and does this trend differ between nurses and other roles?
  + **Data Analyst Note:** This question broadens our analysis to include both nursing and non-nursing roles, providing a more holistic view of staffing strategies across different parts of a nursing home. Furthermore, it introduces the critical element of cost. We hypothesize that facilities that heavily rely on temporary staffing may incur higher operational costs due to overtime, agency fees for traditional staffing services, and potentially even penalties related to understaffing or quality of care issues. By exploring correlations between temporary staffing levels and these cost factors (which we may be able to infer from other CMS datasets like penalty data), we can build a compelling case for the economic benefits of a more efficient staffing model, potentially offered by Clipboard Health, that could reduce reliance on expensive traditional temporary staffing methods.

**4.4. Question 4: Cost Implication Forecasting**

* **Question:** "What are the cost differences in Q2 2024 between facilities with over 50% temporary staffing versus those with less than 50% for both nursing and non-nursing roles, and how would a 10% reduction in temporary staffing affect overall staffing costs?"
  + **Layman's Explanation:** We want to compare the overall costs of running nursing homes that use a lot of temporary staff (more than half of their total staff hours) to those that use less temporary staff (less than half). We also want to estimate how much money a facility could save if it reduced its use of temporary staff by, say, 10%. Essentially, we're asking: do facilities that are heavily reliant on temporary staff spend more money overall, and how much could they potentially save by using less temporary staff?
  + **Data Analyst Note:** This question directly addresses the financial implications of different staffing models. The 50% threshold is used as an illustrative point to differentiate between facilities with high and low temporary staffing reliance. By comparing these two groups of facilities (using available data on quality metrics and potentially penalty data as proxies for cost and efficiency), we aim to quantify the potential cost disadvantages of high temporary staffing. Furthermore, by projecting the impact of a 10% reduction in temporary staffing, we can provide a tangible and easily understandable illustration of the potential cost savings that facilities could achieve by optimizing their staffing strategies, potentially through solutions like Clipboard Health. This analysis will strengthen the business case for adopting more efficient staffing solutions.

**4.5. Question 5: Intra-Quarter Staffing Pattern Analysis**

* **Question:** "What are the short-term (within Q2 2024) variations in temporary staffing levels for both nursing and support roles, and do these patterns show predictable times when staffing gaps occur?"
  + **Layman's Explanation:** We are going to examine the day-to-day or week-to-week changes in the number of temporary workers used in nursing homes, for both nurses and other staff. We want to see if there are any consistent patterns – for example, are there certain days of the week or times of the month when facilities consistently use more temporary staff? If we find these patterns, it might mean that staffing shortages are happening at predictable times.
  + **Data Analyst Note:** Understanding temporal patterns in temporary staffing is crucial for proactive staffing management. By analyzing short-term variations within Q2 2024, we can identify if there are recurring peaks or troughs in temporary staff utilization. Predictable patterns, such as consistently higher temporary staffing needs at the beginning or end of the week, or during specific periods within the quarter, would indicate recurring staffing gaps. Identifying these predictable gaps allows facilities to proactively plan their staffing and potentially utilize on-demand platforms like Clipboard Health to address these recurring needs more efficiently, rather than resorting to last-minute, potentially more expensive, solutions. This insight emphasizes the value of proactive and flexible staffing solutions.

**5. Stakeholders and Audience**

* **Primary Stakeholder & Audience:** **Clipboard Health Sales Leadership Team.** This team is the direct recipient of this analysis and will use the findings to inform their sales strategies, target specific customer segments, and refine their sales messaging. The report and its recommendations will be tailored to their needs and understanding.
* **Secondary Stakeholders:**
  + **Clipboard Health Executive Management:** May be interested in a higher-level summary of the findings and the strategic implications for the company's overall growth and market positioning.
  + **Clipboard Health Marketing Team:** May use the insights to develop targeted marketing campaigns and refine the overall marketing messaging to align with the identified needs of nursing homes.

**6. Metrics for Success**

The success of this "Ask Phase" and the overall data analysis project will be measured by its ability to deliver the following:

* **Actionable Recommendations:** The primary metric is the generation of clear, specific, and actionable recommendations for the Clipboard Health Sales Leadership Team. These recommendations should be directly implementable in their sales strategies and outreach efforts.
* **Data-Driven Insights:** The recommendations must be grounded in solid data analysis and evidence derived from the CMS datasets. Anecdotal evidence or assumptions are insufficient; the insights must be demonstrably supported by the data.
* **Improved Sales Effectiveness (Long-Term, Indirect Metric):** While difficult to directly measure in the short term, the ultimate success will be reflected in improved sales effectiveness for Clipboard Health over time. This could manifest as increased lead generation, higher conversion rates, and greater market share within the target segments identified by the analysis.
* **Clear Communication and Understanding:** The report and its findings should be communicated clearly and concisely, ensuring that the Sales Leadership Team understands the analysis, its implications, and the recommended actions. Layman's terms and effective visualizations will be key to achieving this.

**7. Key Tasks Completed in the "Ask" Phase**

The following key tasks have been successfully completed during this "Ask" phase:

1. **Defined the Business Task:** Clearly articulated the overall objective of providing data-driven recommendations to the Clipboard Health Sales Leadership Team to enhance their sales effectiveness.
2. **Identified the Problem Statement:** Detailed the challenges and opportunities in the nursing home staffing market that this analysis aims to address, focusing on understanding market needs, identifying target clients, and quantifying the value proposition of Clipboard Health.
3. **Formulated SMART Questions:** Developed five specific, measurable, action-oriented, relevant, and time-bound questions that will guide the data analysis process and ensure a focused and actionable outcome.
4. **Identified Stakeholders and Audience:** Clearly defined the primary and secondary stakeholders for this project, with the Sales Leadership Team as the primary audience.
5. **Defined Metrics for Success:** Established clear metrics to evaluate the success of the analysis, focusing on actionability, data-driven insights, and ultimately, improved sales effectiveness.
6. **Dataset Familiarization:** Initial review and understanding of the CMS Payroll Based Journal (PBJ) Daily Nurse Staffing and Non-Nurse Staffing datasets for Q2 2024 and identification of potentially relevant complementary CMS datasets.
7. **Preliminary Research and Note-Taking:** Conducted preliminary research on the healthcare staffing industry, Clipboard Health's value proposition, and the available CMS datasets, documented in preliminary notes and reports.

**8. Conclusion**

The "Ask" phase of this Clipboard Health CMS Data Analysis project has been successfully completed. We have clearly defined the business task, articulated the problems we aim to solve, and formulated a robust set of SMART questions that will guide our analysis. We have also identified our stakeholders, established success metrics, and completed essential preparatory tasks.

We are now well-positioned to move into the next phase of the data analysis process – the "Prepare" phase – where we will focus on gathering, cleaning, and preparing the CMS datasets for in-depth analysis to answer the questions outlined in this report and ultimately deliver valuable and actionable recommendations to the Clipboard Health Sales Leadership Team.