

Elizabeth Bestford  
Second Capstone Submission  
1/18/25

## The United States Nursing Home Epidemic

### **Executive Summary:**

This capstone presentation will focus on analyzing nursing homes across the United States. The capstone analysis will explore various factors influencing the quality of care in these facilities, including ownership type (for-profit, non-profit, or government/state), facility capacity, staff ratings, health inspection results, and the staffing-to-patient ratio. Additionally, the presentation will examine the correlation between these factors and the prevalence of illnesses or abuse incidents within the facilities.

### **Motivation:**

The motivation behind this capstone stems from a personal experience. My late aunt spent her final years in a nursing home, where she experienced repeated health complications and neglect. One particularly troubling incident, where I witnessed staff dismissing an elderly woman's fall with mockery, solidified my desire to investigate the systemic issues in nursing home care. I believe there is a significant disconnect between the cost of nursing home care and the level of service provided to patients, often compromising their health and safety. This presentation will seek to highlight these disparities by diving into key data points such as facility ratings, staff performance, health code violations, and patient well-being.

The hypothesis driving this analysis is that nursing homes with higher costs often fail to provide adequate care to their residents. In many cases, this failure is compounded by underreporting of violations, abuse, and neglect. My research will explore how ownership types and staffing levels correlate with health inspection results, abuse incidents, and overall patient outcomes. By identifying these correlations, I aim to provide insights that could lead to better policy-making, improved oversight, and enhanced quality of care for vulnerable nursing home residents.

### **Minimum Viable Product:**

The final deliverable will be a Power BI presentation, designed to visually represent the key findings of the analysis. Other visualizations will be used to convey the data clearly and effectively:

- **Heat maps** showing the concentration of nursing homes by ownership type and region (zip codes/counties).
- **Bar charts** displaying the average staff ratings and the distribution of staffing-to-patient ratios across different facilities.

- **Line graphs** comparing the frequency of illness outbreaks (e.g., UTIs, falls) in facilities with varying levels of inspection ratings.

These visualizations will provide a comprehensive overview of how various factors contribute to the quality of care in nursing homes, allowing for easy comparison across regions, ownership types, and facility sizes.

The intended audience for this analysis includes healthcare policymakers, nursing home administrators, healthcare professionals, and family members of nursing home residents. The findings will also be of interest to advocacy groups focused on improving elderly care and ensuring the safety and well-being of individuals in long-term care facilities. By using data-driven insights, this presentation aims to foster discussions around improving the nursing home industry and its impact on vulnerable populations.

#### **Schedule:**

1. Get the data (1/19)
2. Clean and explore data (2/1)
3. Create presentation of analysis(2/22)
4. Internal demo days (beginning of March)
5. Demo day(beginning of March)

#### **Data Sources:**

<https://www.bls.gov/oes/2023/may/oes311131.htm>

<https://data.bls.gov/oes/#/occGeo/One%20occupation%20for%20multiple%20geographical%20areas> – these links here provide me with data to explore CNA’S wages in the U.S.

<https://data.cms.gov/provider-data/dataset/4pq5-n9py#data-table> – National Nursing Home data source

#### **Known Issues and Challenges:**

1. **Bias of Data** - The risk of bias in data interpretation is a concern, particularly when analyzing potentially sensitive topics like abuse and neglect. There could be biases in the way the data is collected or interpreted, and the perception of certain facilities might influence findings. To mitigate this, I’ll approach the data with objectivity, relying on multiple sources to cross-check findings and ensure that my conclusions are supported by concrete evidence. I’ll also be transparent about any limitations in the data and avoid drawing definitive conclusions from incomplete or inconclusive data.