**Medicare Inpatient Cost Analysis: Key Findings (2015–2023)**

Mehrnaz Abedian  
MS in Health Informatics  
**1.** **Top Diagnosis-Related Groups (DRGs) by Total Medicare Payment**

An analysis of inpatient Medicare claims data (2015–2023) revealed that a small number of DRGs contributed disproportionately to overall spending. The following DRGs represent high-complexity cases that often require extended care and intensive treatment:

|  |  |  |
| --- | --- | --- |
| DRG Code | Description | Approx. Total Payment |
| 951 | Extensive O.R. Procedure, Unrelated to Principal Diagnosis | $269M |
| 181 | Respiratory Neoplasms | $150M+ |
| 180 | Respiratory Infections & Inflammations | $140M+ |
| 314 | Other Circulatory Diagnoses | $120M+ |

**Interpretation:** These DRGs are associated with severe clinical conditions, such as cancer, complex surgical cases, or cardiovascular complications. Their high cost reflects the need for intensive interventions and long inpatient stays.

**2. DRGs with the Highest Average Payment per Claim**

When limited to DRGs with at least 50 claims (to ensure statistical reliability), the following had the highest average payments (>$130K per claim):

* DRG 180 – Respiratory Infections and Inflammations
* DRG 181 – Respiratory Neoplasms
* DRG 951 – Extensive O.R. Procedure, Unrelated

**Possible Drivers of High Cost:**

* Complex treatment protocols (e.g., surgery, chemotherapy, ventilation)
* Longer hospitalization periods
* Higher resource utilization per patient

**3. Payment Range Analysis**

Several DRGs exhibited broad variability in payment amounts, suggesting diverse clinical presentations and treatment strategies.

|  |  |  |
| --- | --- | --- |
| DRG | Min Payment | Max Payment |
| 951 | ~$65,000 | ~$275,000 |
| 181 | ~$55,000 | ~$235,000 |
| 314 | ~$48,000 | ~$220,000 |

**Insight:** Variability may result from differences in patient acuity, comorbidities, hospital resources, or regional care practices.

**4. Average Length of Stay (LOS) by DRG**

Longer LOS often contributes to increased costs. The following DRGs showed notably prolonged inpatient durations:

|  |  |  |
| --- | --- | --- |
| DRG | Avg LOS | Likely |
| 951 | 104 days | Surgical recovery, post-op care, complications |
| 181 | ~30+ days | Multimodal cancer treatments (e.g., chemo/surgery) |
| 180 | ~25+ days | ICU support for infection-related organ failure |
| 314 | ~20+ days | Extended cardiac monitoring or recovery |

**5. Yearly Payment Trends (2015–2023)**

Medicare inpatient costs have steadily increased since 2015, with noticeable acceleration after 2020:

* **2022**: Highest total payments (~$239M), with an average payment per claim of $23.7K
* **2023 Q1**: Already surpassed $46M

**Likely Factors:**

* Delayed procedures from COVID-19
* Increased patient severity
* Shifts in DRG case mix

**Implication:** Cost forecasting is essential for healthcare systems to maintain financial sustainability post-pandemic.

**6. Seasonal and Monthly Patterns**Total inpatient payments and claim volumes peaked in June 2022, with elevated activity also seen in January and December across multiple years. While winter months often show increased claims—possibly due to seasonal illnesses—this pattern isn’t consistent. For instance, June 2022 outpaced all other months, likely due to post-COVID procedure backlogs or other operational factors. Some November months, like 2020, also saw significant spikes. These findings suggest seasonal influences may exist, but are shaped by year-specific events rather than predictable trends.

**7. Summary of High-Impact DRGs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DRG | Description | Avg Payment | Avg LOS | Claim Volume |
| 951 | Complex Surgery (Unrelated Diagnosis) | $130K+ | 104 days | Medium |
| 181 | Respiratory Neoplasms | $135K+ | 30+ days | Medium |
| 180 | Severe Respiratory Infections | $132K+ | 25+ days | High |
| 314 | Other Circulatory Conditions | $125K+ | 20+ days | High |

**Conclusion**

This Medicare DRG analysis highlights critical trends in healthcare cost drivers:

* **Cost Drivers**: Inpatient care costs are largely influenced by high-acuity respiratory, oncologic, and surgical cases.
* **Clinical Variation**: LOS and cost variability across DRGs suggest different care strategies and patient complexities.
* **Strategic Implications**: Systems should focus on optimizing discharge processes, forecasting seasonal resource needs, and identifying high-cost DRGs for care standardization.

**Suggested Use Cases (Student Perspective)**

* **Hospital Administrators**: Use DRG insights to improve discharge efficiency and monitor high-cost cases.
* **Policy Analysts**: Identify DRGs for reimbursement reform or bundled payment models.
* **Data Science Teams**: Develop predictive models for inpatient utilization and cost forecasting.