

Hospital Readmissions Analysis

Using SQL & Tableau

Veronica Hernandez
verodata.net



Understanding Hospital Readmissions & HRRP

What is hospital readmission?

- When a patient is readmitted to the hospital within 30 days of discharge

Why does it matter?

- Impacts patient care quality and Medicare payments

Hospital Readmissions Reduction Program (HRRP)

- CMS penalizes hospitals with excess readmissions
- Focuses on six conditions:
 - Heart Attack (AMI)
 - Heart Failure (HF)
 - Pneumonia
 - COPD
 - Hip/Knee Replacement (THA/TKA)
 - Coronary Artery Bypass Graft (CABG)

Goal of the Analytics

- Identify hospitals with the highest excess readmission ratios
- Compare state-level readmission performance by condition
- Highlight hospitals exceeding vs. meeting CMS benchmarks
- Analyze how hospital size impacts readmission rates
- Provide data-driven recommendations to reduce readmissions

Data Collection & Preparation

Data Source:

- CMS Medicare Readmissions Data

Key Fields:

- Facility Name, State, Measure (Condition), Readmission Ratios, Expected vs. Predicted Readmission Rates, Number of Discharges

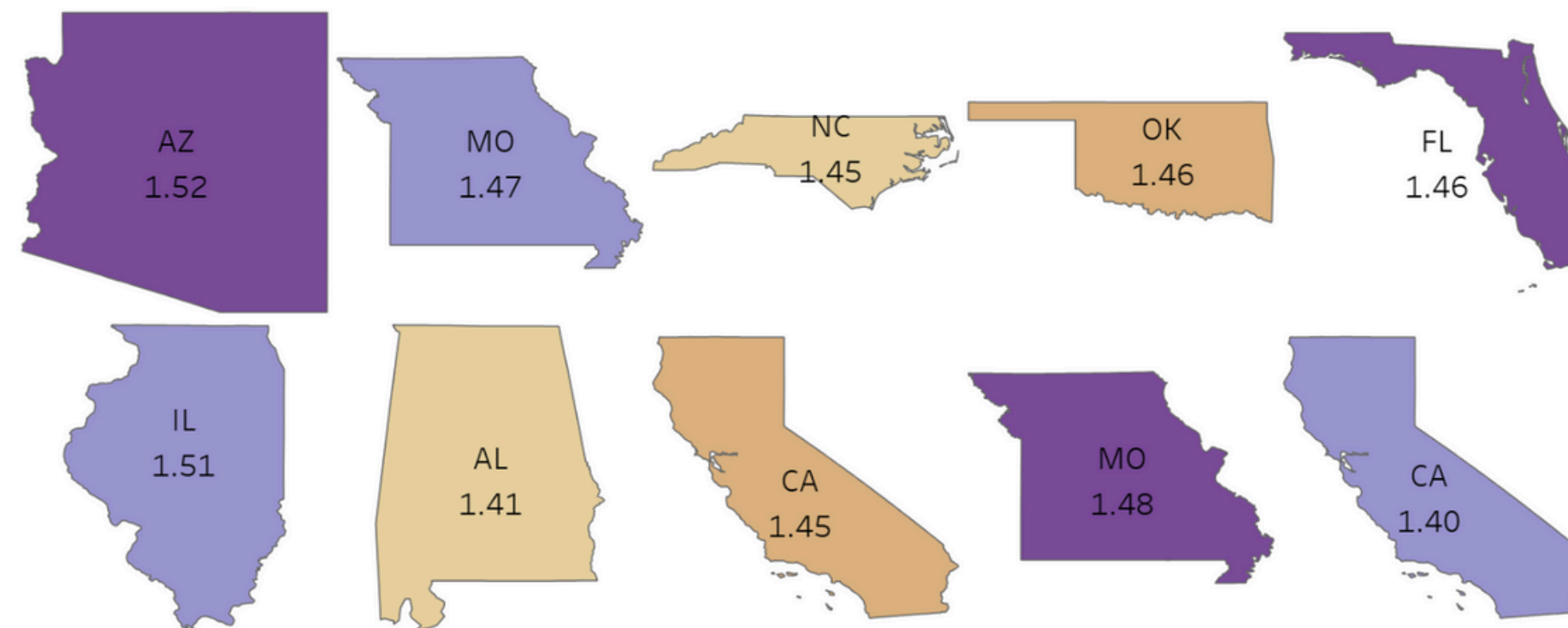
Data Cleaning Steps:

- Handled missing values in num_discharges (42% missing)
- Categorized hospitals into size groups
- Removed duplicates and irrelevant fields
- Standardized facility names & condition codes

Which Hospitals Have the Worst Readmission Rates?

- Some hospitals have excess readmission ratios significantly above national averages.
- Possible factors: insufficient follow-ups, resource limitations, complex cases.

Highest Readmission Rates by Hospital/State (Top 10)



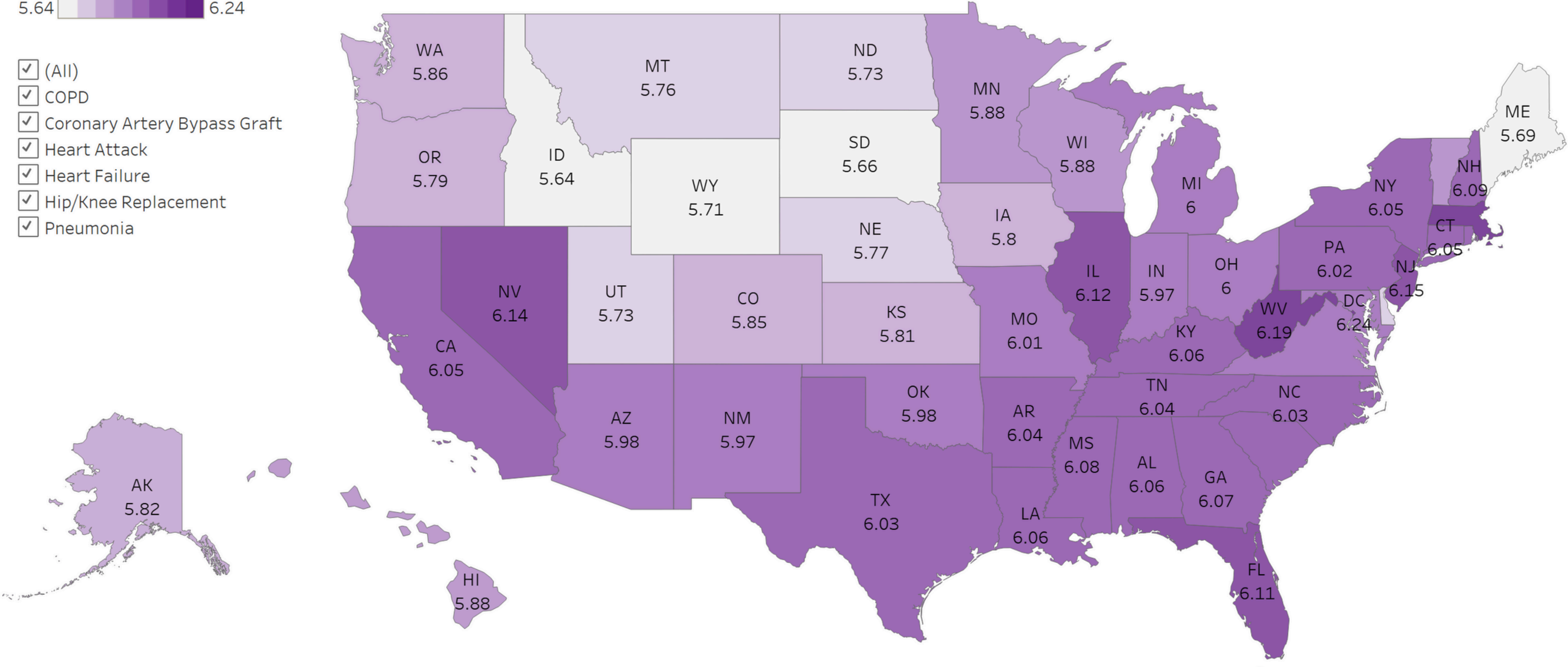
Which States Have the Highest Readmission Rates?

- Some states consistently perform worse across conditions.
- Could be due to regional healthcare access, hospital policies, or patient demographics.

U.S. Hospital Readmission Ratios by State (Filter by Condition)



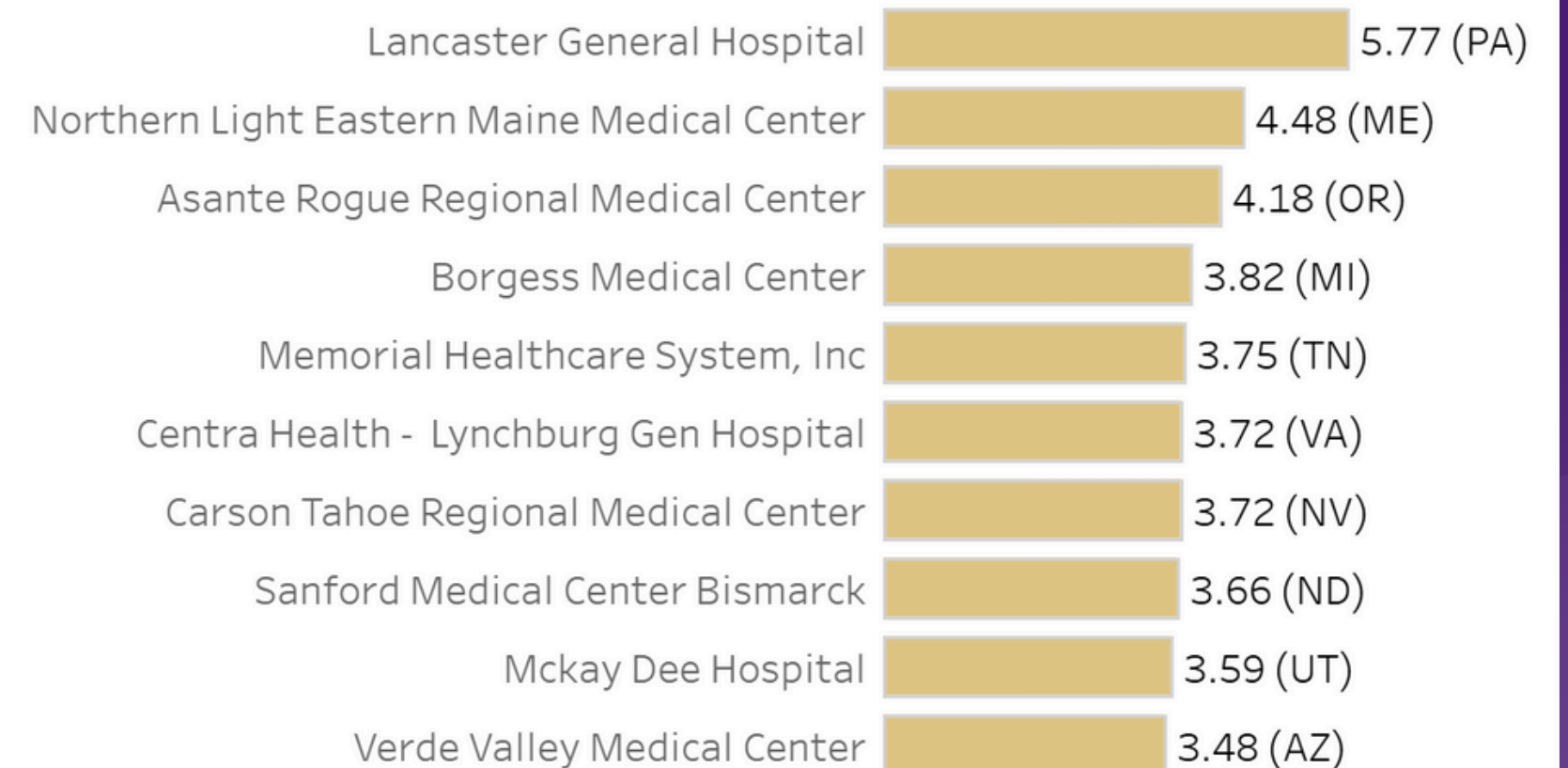
- ☒ (All)
- ☒ COPD
- ☒ Coronary Artery Bypass Graft
- ☒ Heart Attack
- ☒ Heart Failure
- ☒ Hip/Knee Replacement
- ☒ Pneumonia



Which Hospitals Are Beating Expectations?

- These hospitals outperformed predicted readmission rates, meaning they are reducing readmissions effectively
- Common success factors:
 - Better discharge planning & patient follow-ups
 - More post-discharge support services

Top 10 Hospitals with the Largest Improvement Margins



Which Hospitals Struggle the Most for Each Condition?

- Certain hospitals have excessive readmissions for specific conditions (e.g., Heart Failure, COPD)
- Focused interventions are needed for these hospitals

Hospitals with Elevated Readmission Rates (by Condition)

Facility

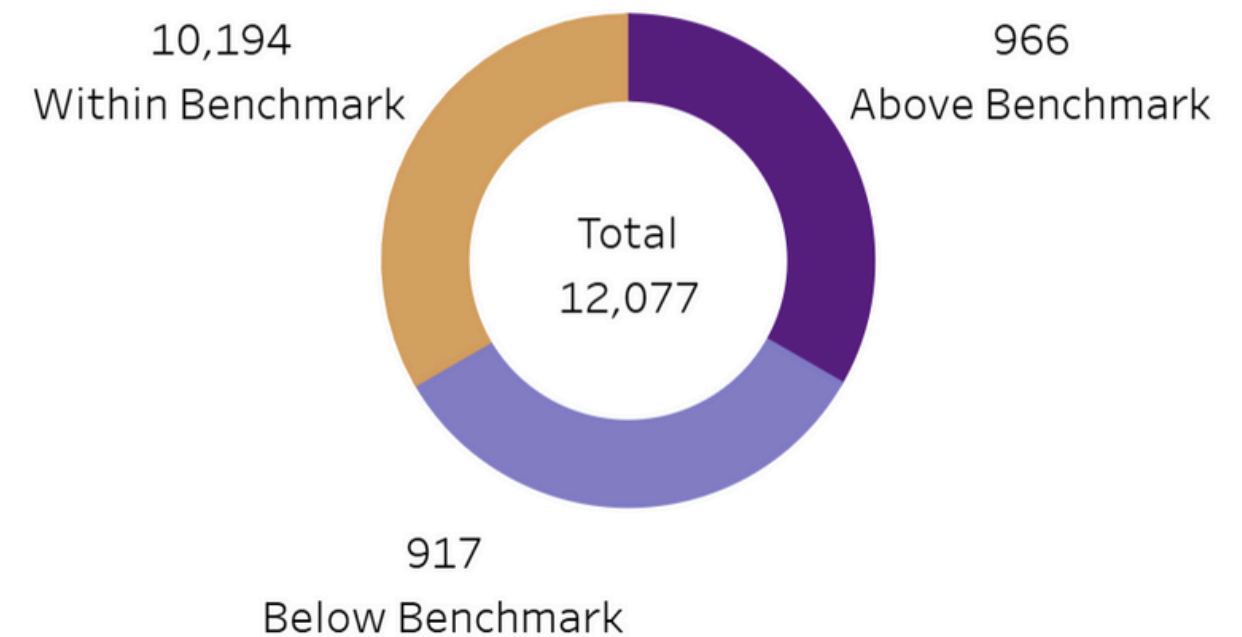
- Arizona Orthopedic And Surgical Specialty Hospital
- Henry Ford Health Hospital
- Oroville Hospital
- Tacoma General Allenmore Hospital



How Many Hospitals Exceed or Meet Benchmarks?

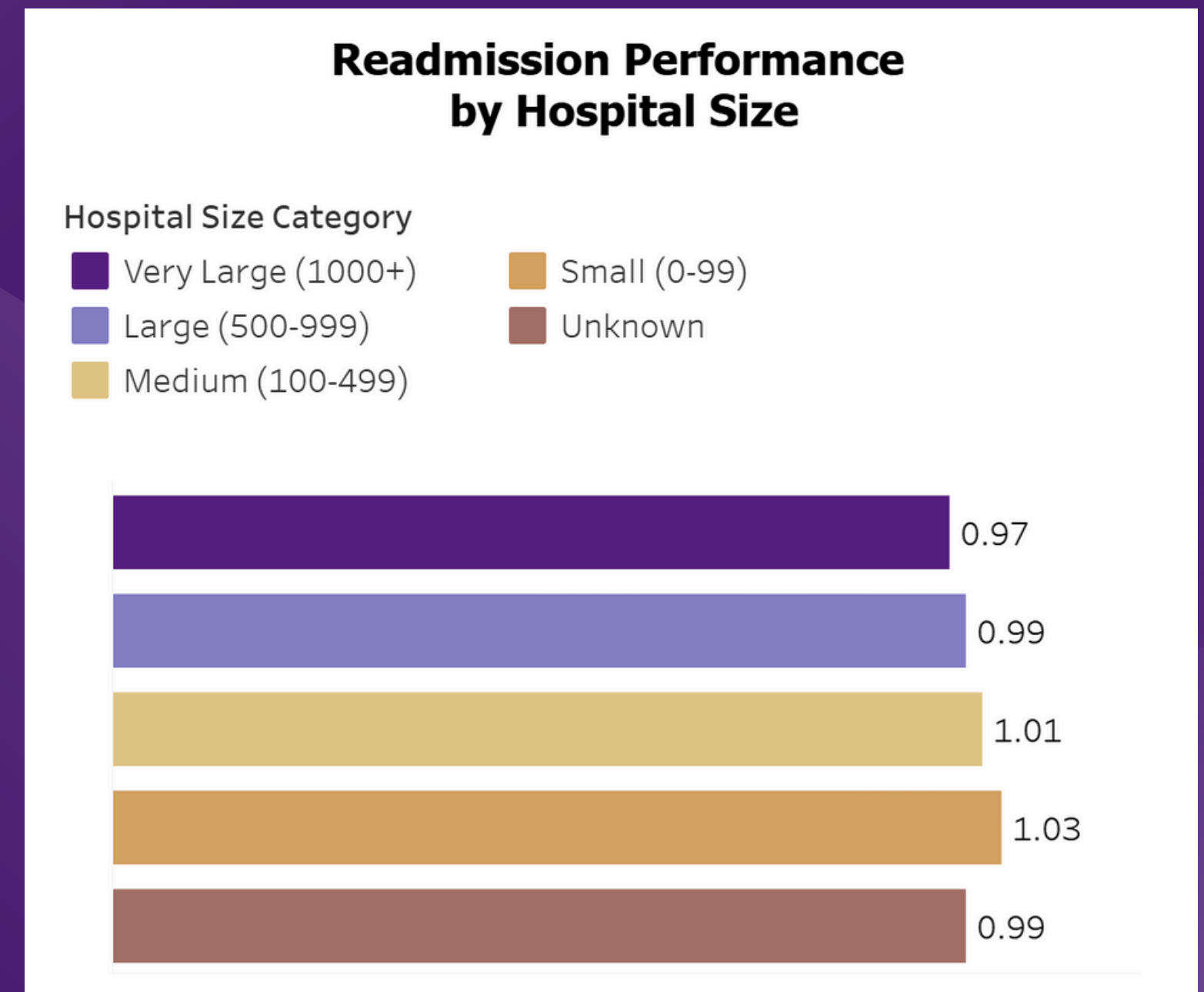
- 966 hospitals exceed the benchmark (worst-performing)
- 917 hospitals perform better than expected (best-performing)
- Shows where improvement efforts should be prioritized

Hospital Readmission Benchmark Summary



Does Hospital Size Affect Readmissions?

- Smaller hospitals (0-99 discharges) have the worst readmission rates (1.03)
- Larger hospitals (1000+ discharges) perform the best (0.97)
- Hospitals with missing size data ("Unknown") behave like large hospitals
- Smaller hospitals may need additional resources to reduce preventable readmissions



What Can Hospitals Do to Reduce Readmissions?

- High-readmission hospitals should enhance post-discharge care to reduce penalties
- State healthcare programs should assess policies in regions with excessive readmissions
- Smaller hospitals may need more support in implementing readmission prevention programs
- Larger hospitals have better readmission outcomes, likely due to better resources and patient care programs
- Healthcare policymakers should monitor HRRP impact to ensure fair hospital comparisons

Interactive Visualization of Findings

Click here to see the [Tableau dashboard](#).

Explore the dashboard for interactive insights. Use the filters to see trends by state, condition, and hospital size.

Get in Touch



www.linkedin.com/in/veronicahernandez87



veronica@verodata.net



<https://github.com/vxhernandez>

