



HAP 670 (Introduction to US Health Systems) Data Analysis Project

**READMISSION RATIO ANALYSIS
(YAVAPAI REGIONAL MEDICAL CENTER)**

**Vineeth Reddy Gunreddy
Professor: Timothy Coffin**

Hospital Readmission Reduction Program

- The Hospital Readmissions Reduction Program (HRRP) was established by the Patient Protection and Affordable Care Act (ACA) in 2010 to minimize unnecessary hospital readmissions, save health-care costs, enhance patient safety and outcomes.
- The Hospital Readmissions Reduction Program (HRRP) is a Medicare value-based buying program that encourages hospitals to enhance communication and care coordination in order to better involve patients and caregivers in discharge plans and, as a result, prevent unnecessary readmissions.
- Improves health care for Americans by connecting payment to hospital treatment quality.
- Penalize the hospital depending on the rate of readmission.
- The excess readmission ratio assesses the relative performance of hospitals.
- Performs better than a typical hospital admitting similar patients (ERR1), and vice versa.



YRMC is a part of Dignity Health's Arizona branch and will continue to operate as a non-profit community hospital.



On March 1, 1943, Prescott Community Hospital - now Yavapai Regional Medical Center (YRMC) - opened its doors to care for patients.



Dignity Health's Yavapai Regional Medical Center contains two acute care facilities in Prescott and Prescott Valley, as well as a vast network of outpatient services, including YRMG's provider clinics.



Yavapai Regional Medical Center (YRMC), a Level 4 Trauma Center, maintains two Emergency Departments (EDs) where individuals of all ages from around western Yavapai County receive 24-hour, 365-day care for medical emergencies.



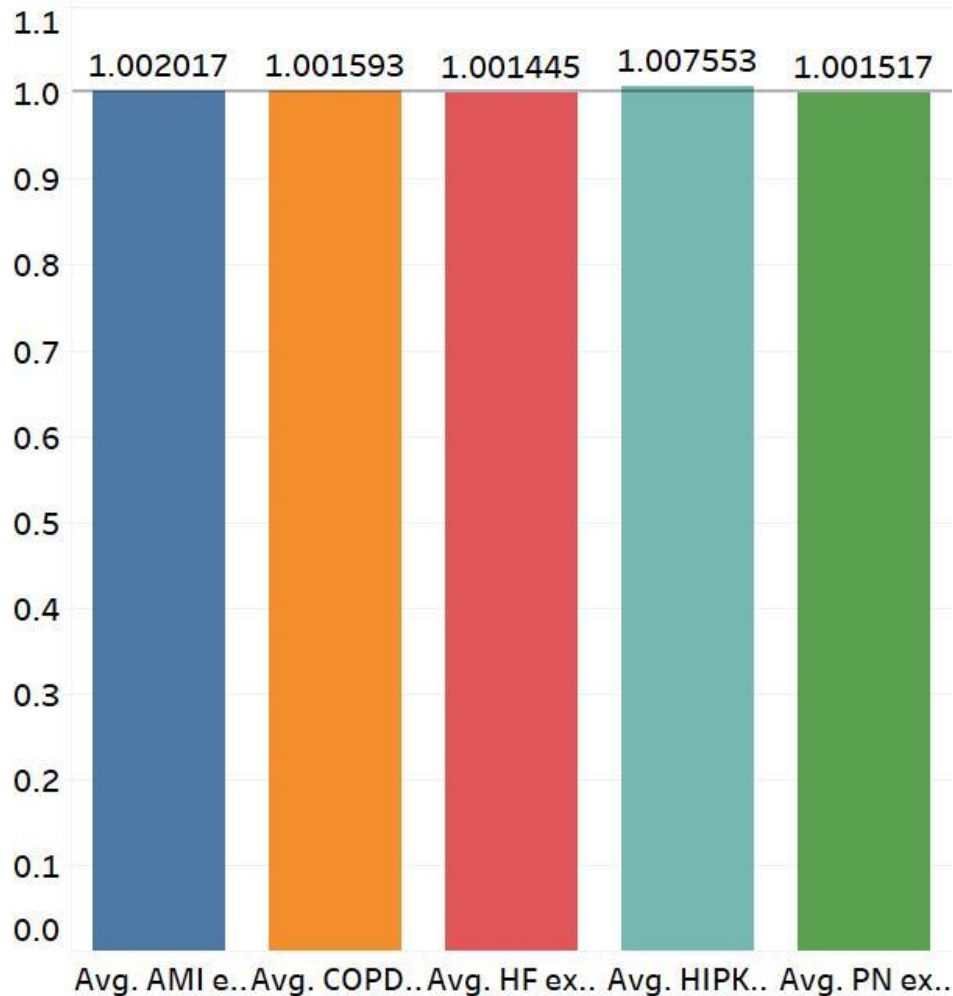
It is a 134 bedded hospital.

Analysis Goals

- To develop plans and actions that aid in the reduction of hospital readmission rates.
- To learn about a certain hospital's performance and compare it to other hospitals in the region and country.
- To gather important information and make conclusions in order to reduce the hospital's Excess Readmission Ratio.

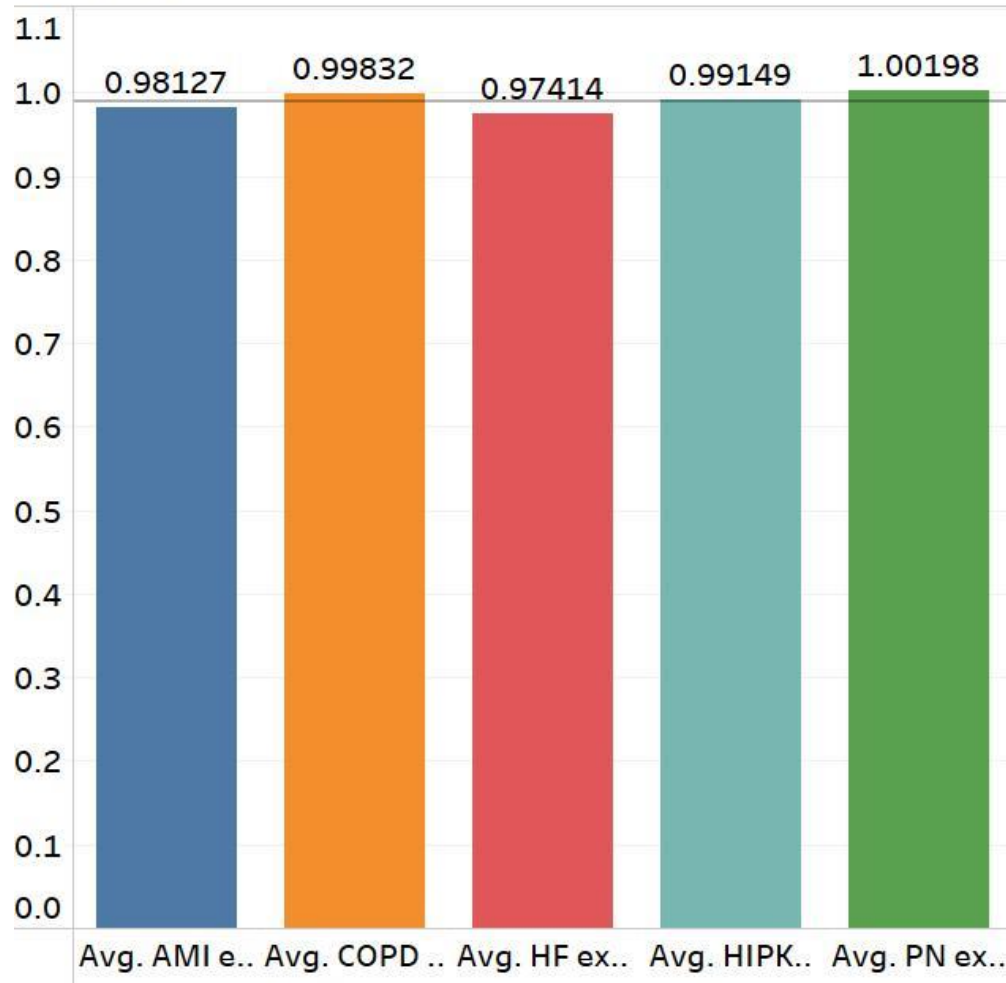


National Average Excess Readmission Ratio



- ERR at the national level for all medical conditions is more than one, indicating a need for improvement.
- Of all these five diseases, HIPKNEE has the highest anticipated Excess Readmission Ratio (ERR) i.e., 1.007553, whereas HF has the lowest (1.001445).

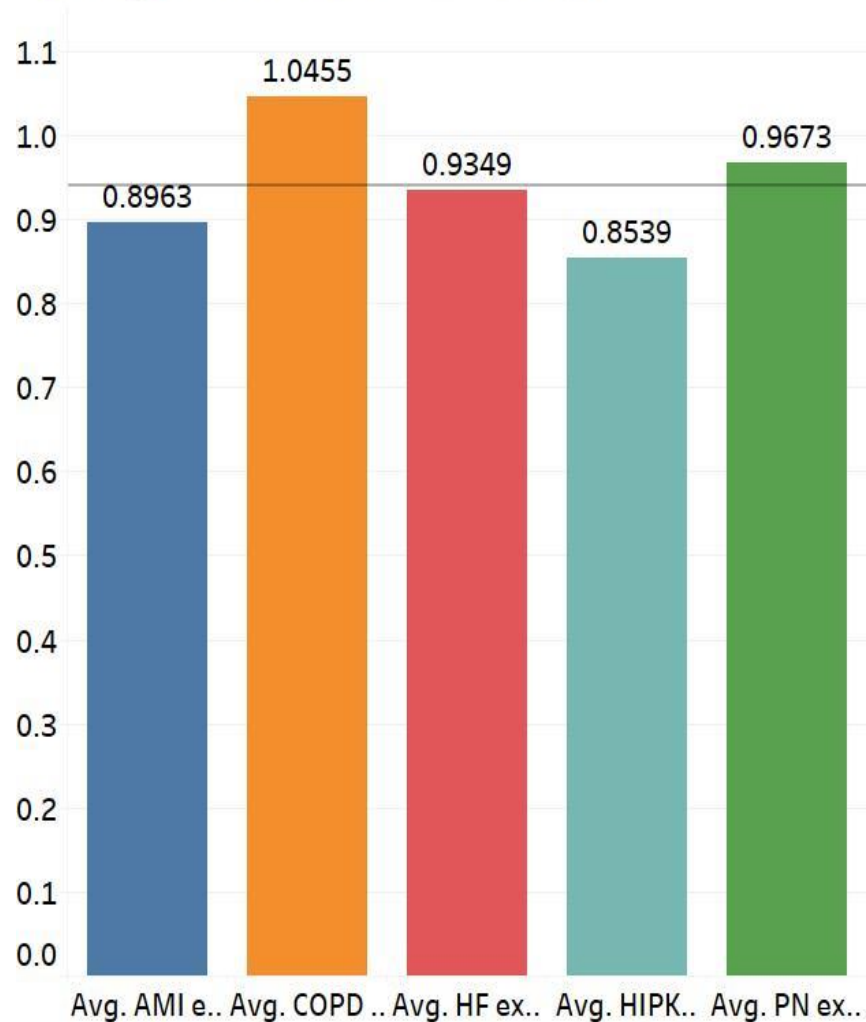
Average Excess Readmission Ratio - ARIZONA



- ERR for the state of Arizona for AMI, COPD, HF, HIPKNEE are doing good with less Readmission Ratio whereas, Pneumonia related hospital Readmissions Ratio is high(1.00198).

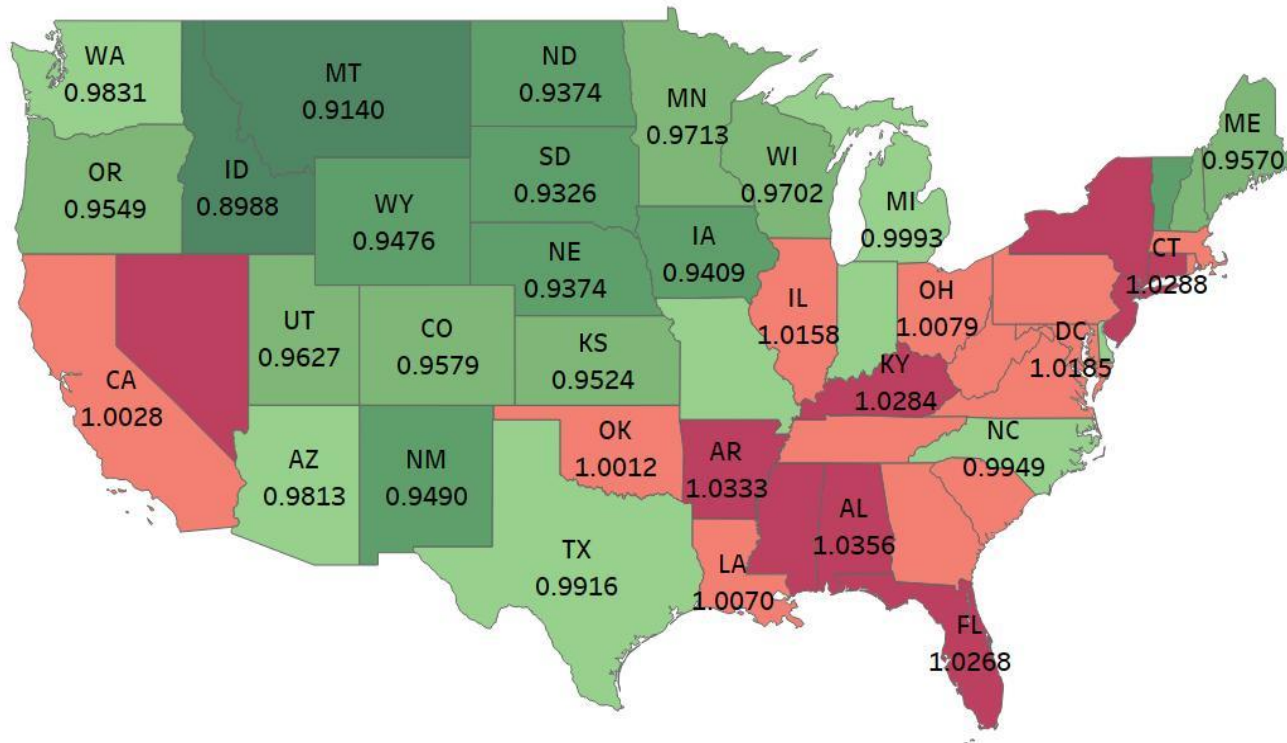
YAVAPAI REGIONAL MEDICAL CENTER

Average Excess Readmission Ratio



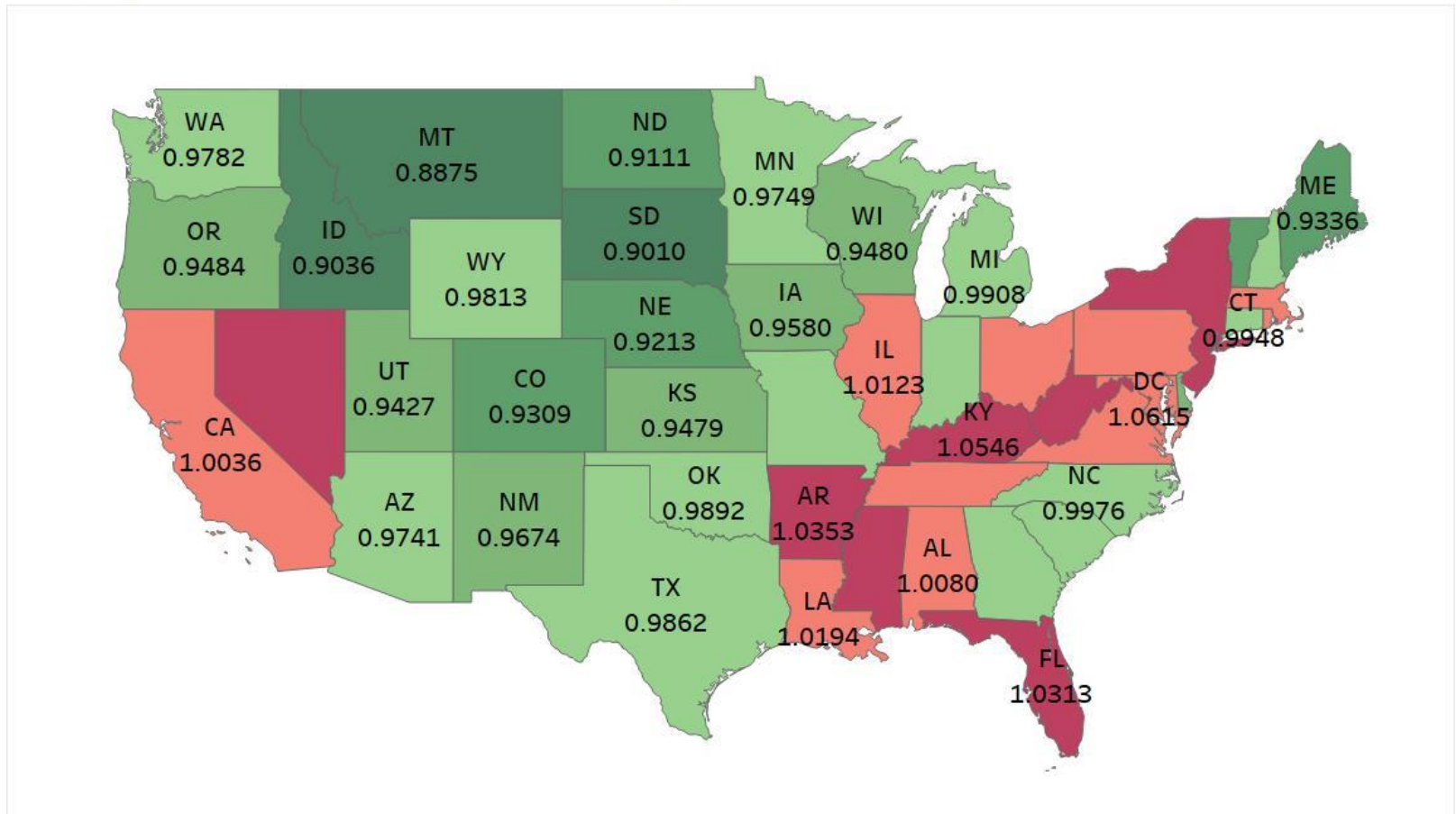
- At Yavapai Regional Medical Center, the ERR for AMI, HF, HIPKNEE, PN are doing good except COPD (1.0455) compared to the state and national average.

Average AMI Excess Readmission Ratio by state



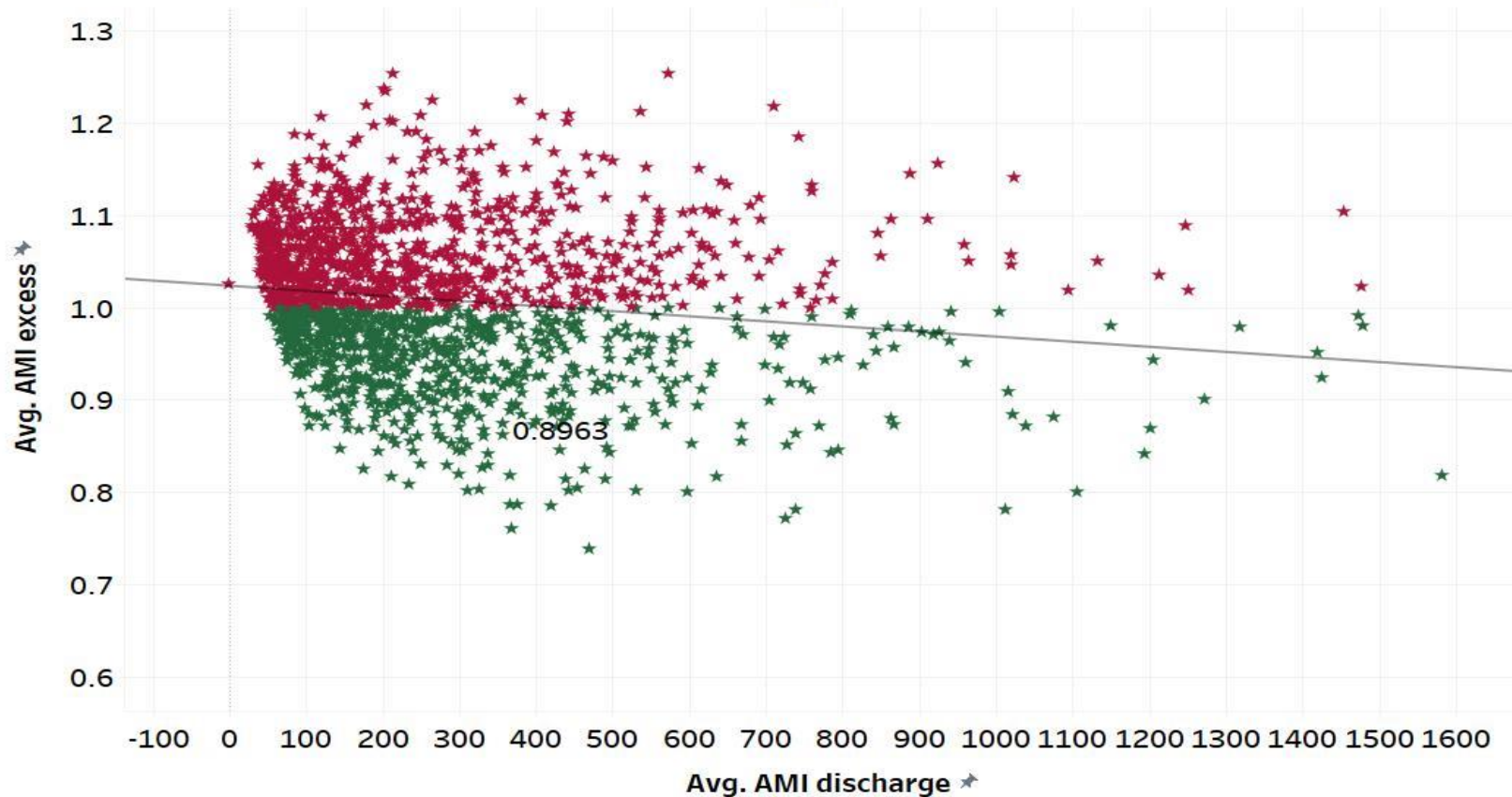
- Arizona and Alabama states has the highest AMI Excess Readmission Ratio with 1.0333 and 1.0356 respectively which are in dark red colour.
- Comparing with all the states in US, Idaho state has less AMI Excess Readmission Ratio (0.8988) marked with green colour.

Average HF Excess Readmission Ratio by state



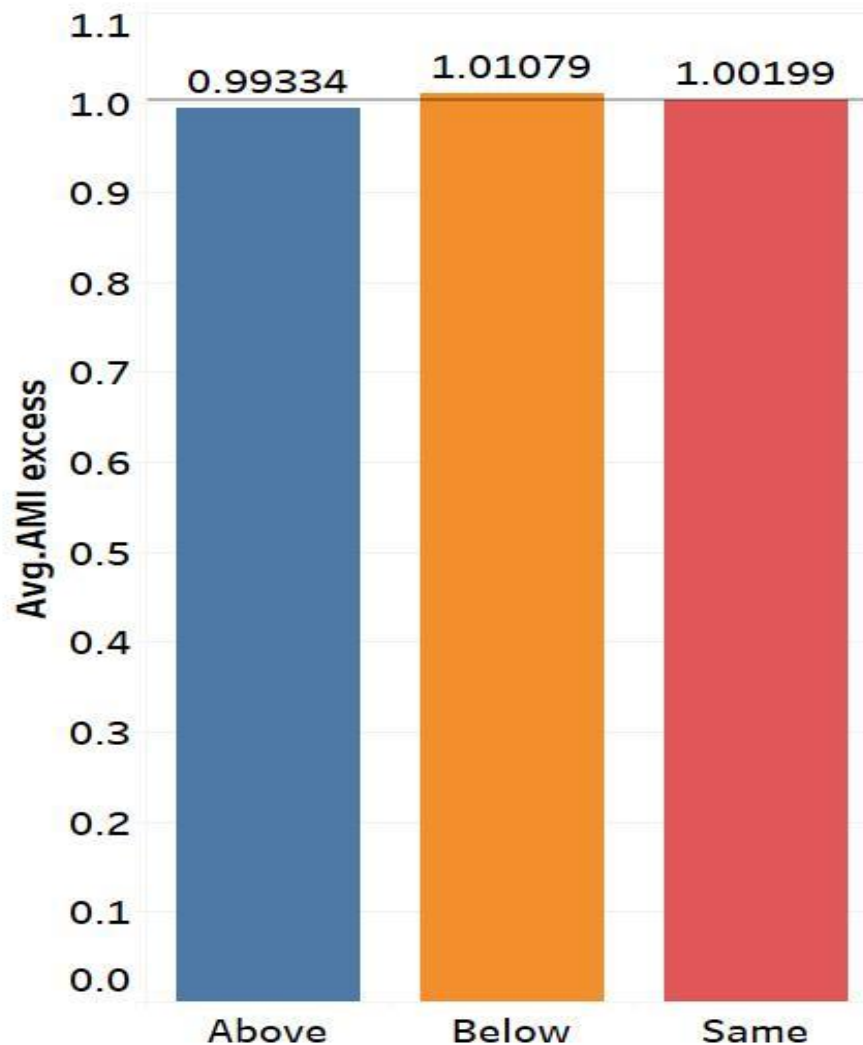
- Of all states in the US, Kentucky and Arizona has the highest HF ERR with 1.0546 and 1.0353 whereas, Montana state has lowest HF ERR with 0.8875.

AMI Excess Readmission Ratio vs Discharges



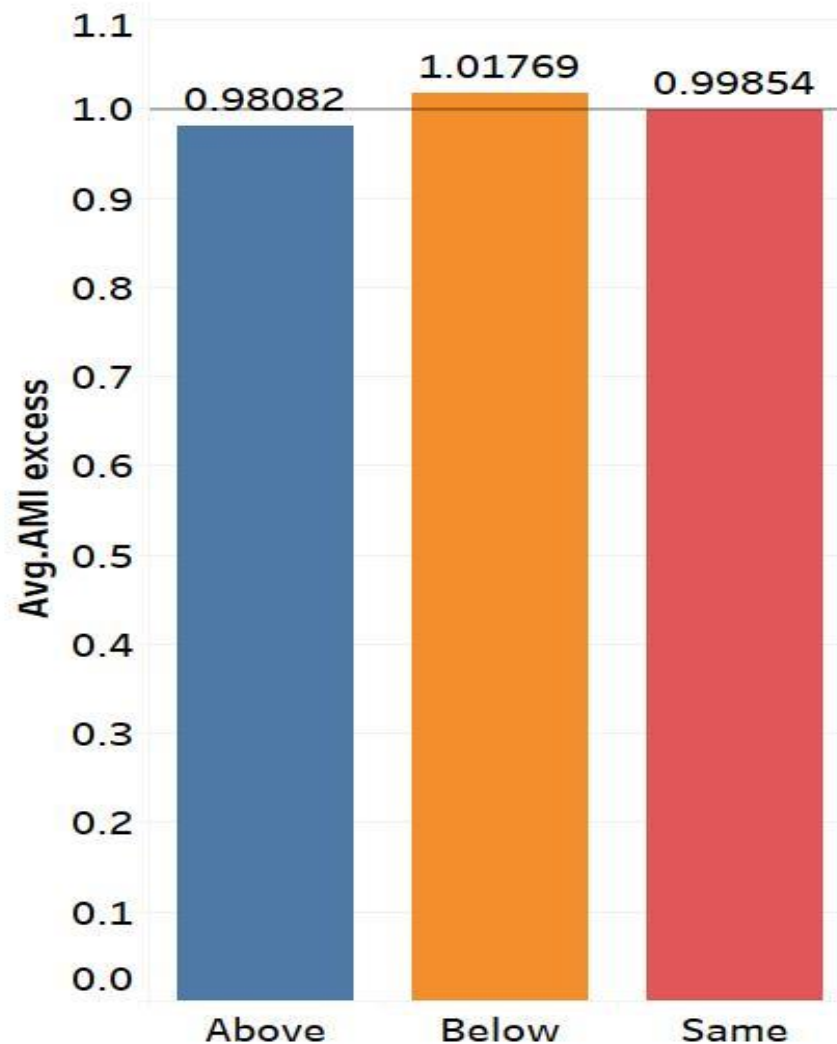
- Scatterplot represents both higher (red colour: >1) and lower (green colour: <1) AMI ERR.
- Hospitals having a greater number of timely discharges of AMI has less ERR.

Relationship between Average AMI Excess Readmission Ratio and Effectiveness of care



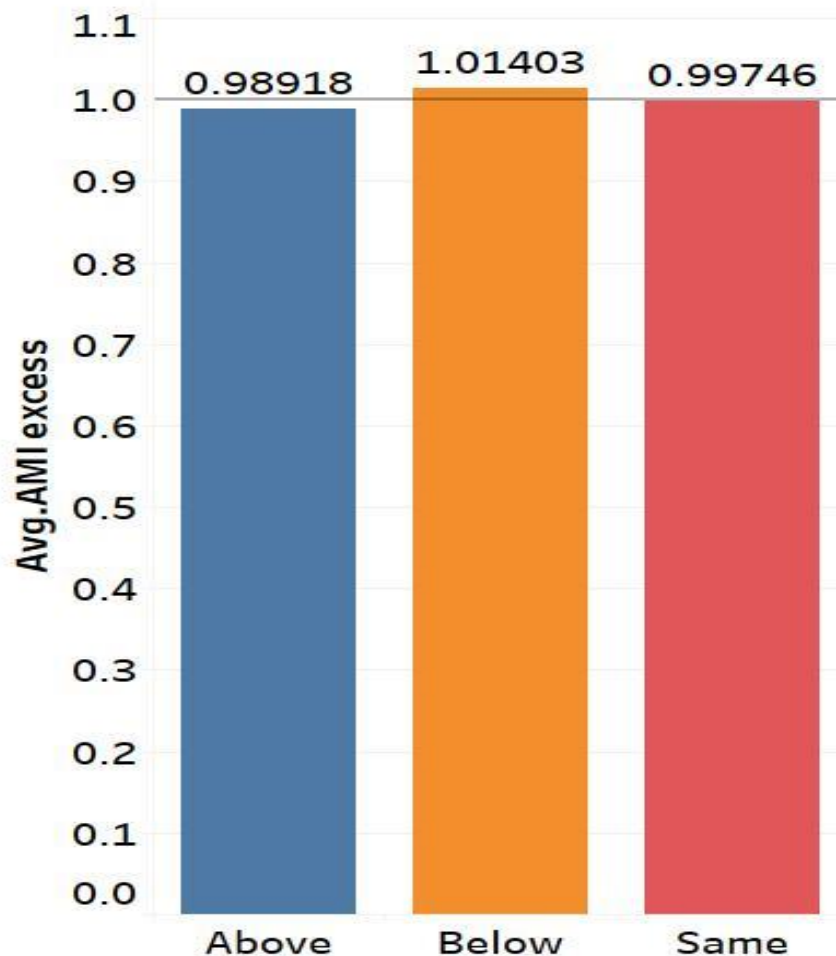
- Hospitals having effectiveness of care below and same the national average have higher AMI ERR.
- Hospitals with lower-than-average care efficacy had a greater AMI ERR.

Relationship between Average AMI Excess Readmission Ratio and Patient experience



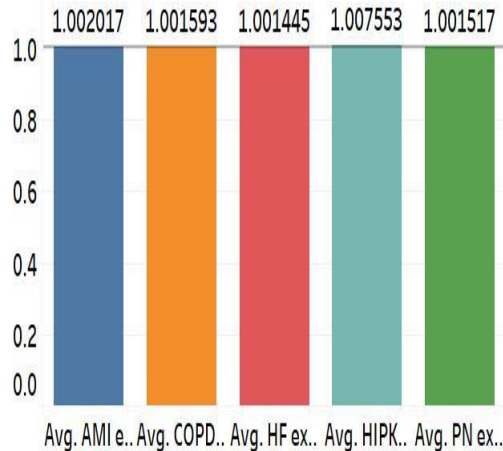
- Hospitals with patient experience below the national average has higher AMI ERR.
- Patients who communicate well with their care team are less likely to require readmission. As a result, hospitals with patient experiences above the national average had lower AMI ERR.

Relationship between Average AMI Excess Readmission Ratio and Timeliness of national comparison

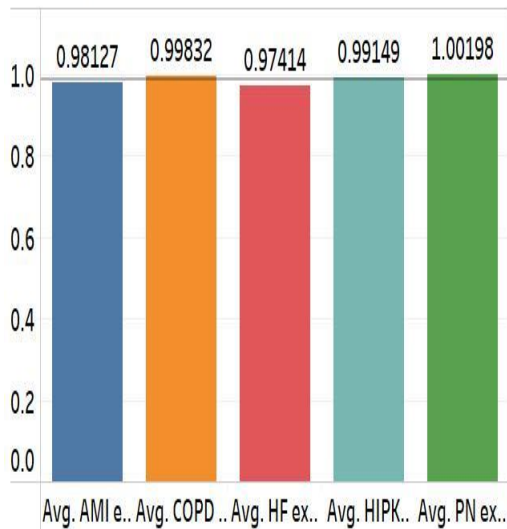


- Hospitals with timeliness comparison below the national average has higher AMI ERR.
- Hospitals with timeliness comparison above and same the national average has lower AMI ERR

National Average Excess Readmission Ratio

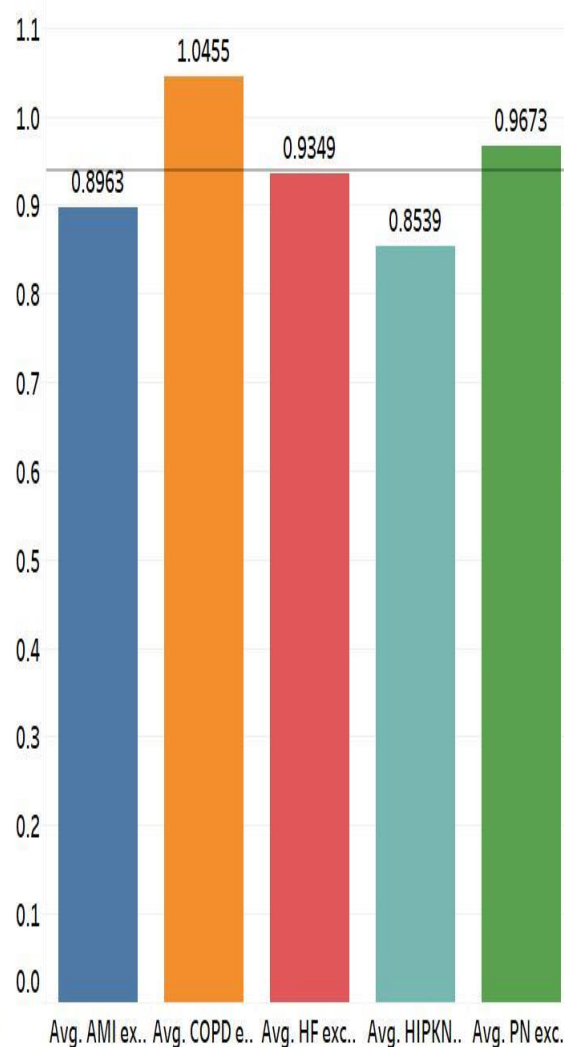


Average Excess Readmission Ratio - ARIZONA



YAVAPAI REGIONAL MEDICAL CENTER

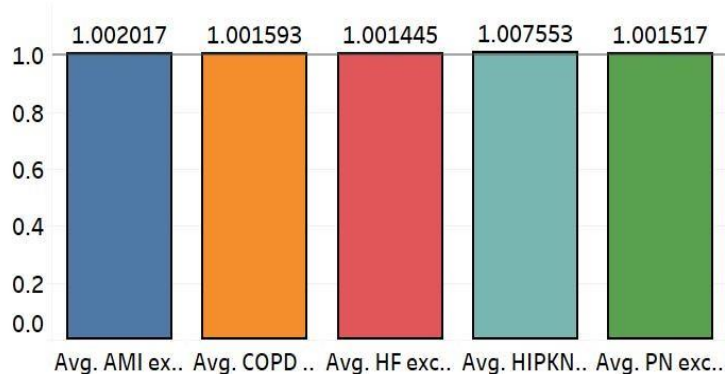
Average Excess Readmission Ratio



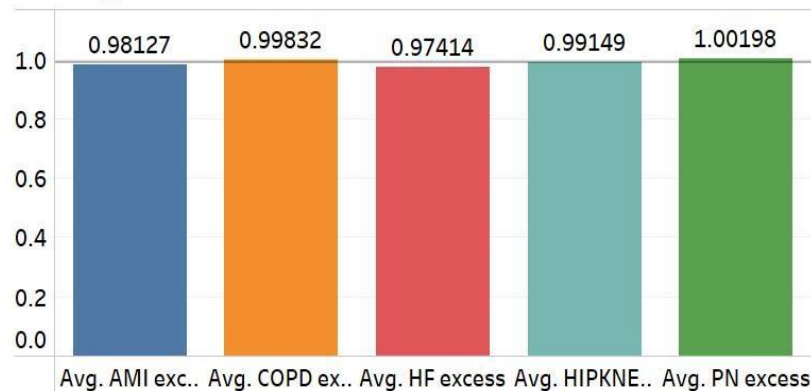
- Yavapai regional medical center is performing well among AMI, HF, PN, and HIPKNEE patients with ERR less than national and state averages however the ERR of COPD is above 1 with a higher number of readmissions which is higher than national and state averages.



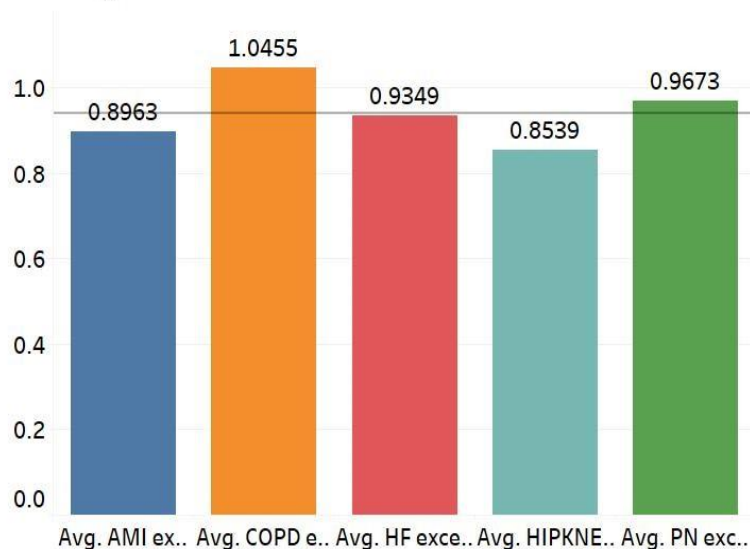
National Average Excess Readmission Ratio



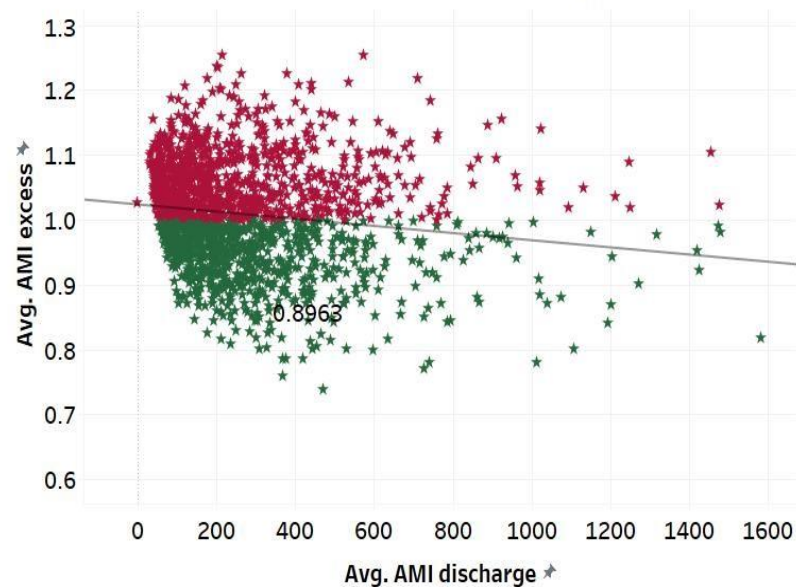
Average Excess Readmission Ratio - ARIZONA



YAVAPAI REGIONAL MEDICAL CENTER Average Excess Readmission Ratio



AMI Excess Readmission Ratio vs Discharges



Findings

- ERR is more than one at the national level for all medical problems, indicating a need for improvement.
- The ERR for the state of Arizona for AMI, COPD, HF, and HIPKNEE is favorable, with a low readmission ratio, however the readmission ratio for Pneumonia-related hospitals is high (1.00198).
- Except for COPD (1.0455), the ERR at Yavapai Regional Medical Center is better than the state and national averages for AMI, HF, HIPKNEE, and PN.
- The states with the highest AMI Excess Readmission Ratios are Arizona and Alabama, with 1.0333 and 1.0356, respectively.
- Kentucky and Arizona have the greatest HF ERRs in the US, with 1.0546 and 1.0353, respectively, while Montana has the lowest HF ERR, with 0.8875.

Recommendations

- Identifying best practices to minimize the rate; providing tools to improve care for COPD patients; and producing resources to help patients manage their disease.
- Putting in place a strong home healthcare program. Post-discharge care can be an effective tool for reducing readmissions.
- Optimize technology use.
- Coach patients on discharge instructions and self-management strategies that include patient education, translation for non-English speakers, and the creation of a checklist to ensure patients comprehend post-care instructions and prescription modifications.
- Identify patients who are at high risk of readmission.
- Make use of medication reconciliation.
- Making sure patients get a seven-day follow-up appointment. Patients who contact their doctor within seven days of being discharged are less likely to be readmitted to the hospital.



THANK YOU