The Impact of 30-Day Hospital Readmissions in the United States

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Abstract

Thirty-day hospital readmission has remained a persistent challenge for patients targeted by the Centers for Medicare and Medicaid Services (CMS) Hospital Readmission Reduction Program (HRRP). While no definitive consensus confirms that the CMS targeted conditions link patients identified as targeted to comorbidities and other social factors, the question remains open as to whether 30-day hospital readmission rates are associated with comorbidities and socioeconomic factors. The study analyzes data from the Agency for Healthcare Research and Quality (AHRQ), the Centers for Medicare and Medicaid Services, the National Rehabilitation Database (NRD), three Skilled Nursing Facilities (SNF), and one Home Health agency in the greater Sacramento area, and robust findings from a literature review. The purpose of the study was to analyze nationwide 30-day hospital readmissions to uncover patterns associated with the HRRP-targeted conditions and to assess how comorbidities and other factors influence these readmission rates. The study employed a quasi-quantitative methodology, conducting a comparative analysis to explore relationships among the identified variables, which were visualized in graphs. An ANOVA was executed in SPSS, following a G*Power analysis, to further clarify the outcomes. Key findings showed diverse results among patients with HRRP-targeted conditions, particularly affecting those with heart failure, older individuals with comorbidities, and various social determinants. The study calls for further research to enhance understanding of the interplay between HRRP-targeted conditions, comorbidities, and social factors. It also suggests that healthcare leaders and policymakers work together to develop strategies for CMS to reassess the criteria used to evaluate these factors pertaining to the readmission trends.

Keywords: Arthroplasty, comorbidities, HRRP, salient, socioeconomic factors, quasi-quantitative approach.

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Section 1: Foundation

The Centers for Medicare and Medicaid Services (CMS) has identified trends in 30-day hospital readmissions, as detailed in various evidence-based sources on their website, CMS.gov (2024). Studies from the Agency for Healthcare Research and Quality (AHRQ), the Nationwide Readmissions Database (NRD), and other reputable sources have shown that preventable hospital readmissions within 30 days of discharge are an increasingly pressing concern across the United States. This dilemma has become a significant concern to healthcare leaders and policymakers. This observation is supported by Rasmussen et al. (2023), who conducted a cross-sectional survey examining factors associated with 30-day hospital readmission rates. These identified factors were validated by CMS.gov (2024) with evidence-based assertions that conditions such as Acute Myocardial Infarction (AMI), Chronic Obstructive Pulmonary Disease (COPD), Heart Failure (HF), Pneumonia, Coronary Artery Bypass Graft (CABG) Surgery, and Elective Total Hip Arthroplasty and Arthroplasty were identified as the most salient reasons for readmissions within 30 days of discharge. To add credence to this observation, the Hospital Readmission Reduction Program (HRRP) (2023) identified these conditions as targeted for 30-day hospital readmissions.

In the broader context, to address the growing problem of 30-day hospital readmission, the Agency for Healthcare Research and Quality (AHRQ) in 2023 identified other contributing factors, including socioeconomic status, gender, demographic characteristics, and insurance status. Research by Stephenson (2019) supports this observation, noting that other socioeconomic factors, such as patients' nonadherence, disengagement, and inadequate care transitions, may also contribute to 30-day hospital

readmission rates. To mitigate this growing dilemma, Qui et al. (2022) reported that the Affordable Care Act (ACA) established the Hospital Readmission Program (HRRP) to provide a feasible alternative to reduce hospital readmission rates. This led to the establishment of HRRP-targeted conditions that include Acute Myocardial Infarction (AMI), Chronic Obstructive Pulmonary Disease (COPD), Pneumonia, Heart Failure (HF), Coronary Artery Bypass Graft (CABG) Surgery, and Elective Primary Total Hip Arthroplasty (THA) or Total Knee Arthroplasty (TKA), as stated by CMS.gov 2024.

Due to the continued nationwide increase in readmissions, the Centers for Medicare & Medicaid Services (CMS) (2024) states that hospitals may face penalties under the Hospital Readmissions Reduction Program (HRRP) if patients with any of the HRRP-targeted conditions are readmitted within 30 days after discharge. These factors underscore the significance of this research project, which aims to engage healthcare leaders and policymakers in developing new policies to address comorbidities and other social determinants that may influence readmission rates, alongside the conditions targeted by the HRRP.

Problem Statement

The problem to be addressed is the rapid increase in 30-day hospital readmission rates for HRRP-targeted conditions. Findings from recent evidence-based studies indicated that this ever-increasing dilemma has significantly impacted patients and their families, hospital finances, and the United States healthcare delivery system. USAFacts.org (2020) reported that more than 18% of the United States' Gross Domestic Product (GDP) is spent on healthcare. As Soyuk (2023) highlights, a significant portion of the United States' Gross Domestic Product (GDP) is allocated to healthcare expenditures,

which directly affect public health and the welfare of patients and their families. This study examined the HRRP-targeted conditions in the United States and other contributing factors, such as comorbidities and socioeconomic attributes, to determine if these factors contribute to readmissions among patients with any of the targeted conditions, an observation highlighted by Murray et al. (2021).

Research by Reister et al. (2022) stated that pneumonia is among the most common causes of 30-day hospital readmission. Additionally, Paunikar et al. (2023) noted that the quality of care during hospitalization and the transition of care after discharge can lead to preventable readmissions; however, this project focused on HRRP-targeted conditions to determine whether comorbidities and other factors contribute to 30-day readmissions.

The Hospital Readmissions Reduction Program (HRRP) has established specific criteria to track excessive and costly readmissions, with a primary focus on the HRRP-targeted medical conditions. While this initiative has been instrumental in identifying and addressing readmissions related to these conditions, it has significant limitations because it excludes other critical factors that may also influence patient outcomes among patients with the targeted conditions. Notably, comorbidities—such as diabetes, hypertension, and mental health disorders—alongside socioeconomic determinants such as income level, education, and access to care, are not included as targeted conditions within the HRRP framework. This omission highlights a considerable gap in the system, as evidence suggests that these additional factors play a crucial role in patient readmission rates, particularly among individuals already facing the challenges posed by HRRP-targeted conditions.

Despite acknowledging contributing factors such as comorbidities and socioeconomic disadvantage, the persistence of high 30-day hospital readmission rates for HRRP-targeted conditions remains a growing concern for healthcare providers and policymakers alike. This raises important questions about the effectiveness of current interventions and the need for a more comprehensive understanding of the issues surrounding these readmissions. Therefore, this project adopts a critical stance by examining the specific problems surrounding 30-day readmission rates and fostering dialogue on potential improvements and strategies that transcend the constraints imposed by the HRRP criteria.

By integrating a broader range of factors influencing readmission into the discussion, this research not only aims to enrich the current understanding of hospital readmissions but also to advocate for more inclusive policies and practices that account for the diverse realities patients face in the healthcare system. Addressing these issues is vital to improving patient outcomes, resource allocation, and the overall efficacy of health care delivery systems. The American College of Emergency Physicians (2024) stated that the Centers for Medicare & Medicaid Services (CMS) may penalize hospitals for HRRP-targeted conditions among patients readmitted within 30 days of discharge. However, few studies have examined factors beyond readmission to Skilled Nursing Facilities (SNFs) or discharge to home with home healthcare services to identify comorbidities and other sociodemographic factors.

Purpose Statement

The purpose of this quantitative quasi-experimental study is to identify, investigate, compare, and analyze 30-day hospital readmission trends among patients with the targeted conditions to determine whether comorbidities and other social factors contribute to readmission rates. The convergence of these targeted conditions underscores the relevance of this study, as they encompass a range of acute and chronic health issues that impose considerable burdens on healthcare resources and on patients' quality of life.

The significance of this study lies in its comprehensive evaluation of the tangible impact of information gaps on comorbidities and other socioeconomic factors on patient outcomes, particularly for the targeted conditions identified by the Hospital Readmission Reduction Program (HRRP). Hospital readmissions are a substantial concern in contemporary healthcare systems, as they often indicate suboptimal care transitions. These readmissions pose multifaceted challenges not only for patients, who may experience deteriorating health outcomes, but also for healthcare providers tasked with delivering effective medical care.

By taking an in-depth look at the intricate interplay among various comorbidities, socioeconomic status, and their collective influence on readmission rates, this study aims to uncover significant opportunities to enhance patient management strategies and improve overall healthcare delivery. The ability to identify and understand these relationships is vital, as it clarifies how different factors can contribute to or mitigate the likelihood of hospital readmission.

In this study, collected data were meticulously analyzed to assess whether prevalent comorbidities—such as diabetes, hypertension, heart disease, and obesity—

along with essential socioeconomic factors, including income levels, educational attainment, and access to healthcare resources, significantly correlate with 30-day hospital readmission rates for patients diagnosed with HRRP-targeted conditions. Furthermore, the analysis did not overlook the importance of demographic diversity; it examined readmission trends across age, race, and gender to ensure the results were inclusive and fully representative of the dataset's diversity.

This study provides a thorough, nuanced analysis of the factors contributing to hospital readmissions, emphasizing that understanding these dynamics is crucial to developing more effective interventions. By disseminating evidence-based strategies, the study aims not only to identify critical factors to reduce admission rates but also to significantly improve patient outcomes and enhance the overall efficiency of healthcare systems.

The findings of this research are intended to serve as a catalyst for future investigations that could have a profound impact on healthcare policy. By addressing disparities in care across patient populations, the study aims to improve the quality of care for patients with common medical conditions. The insights gleaned from this study could inform more equitable healthcare practices that prioritize patient needs while fostering a culture of continuous improvement within healthcare systems.

Nature of the Project

Project method

The methodology for this quasi-experimental study used a quantitative, comprehensive approach. Data were collected from the AHRQ website, the CMS Center database, the National Readmission Database (NRD), a local home health service, and

three skilled nursing facilities (SNFs) in the greater Sacramento area to examine readmission trends among patients with HRRP-targeted conditions, as well as comorbidities and other contributing factors. This comprehensive approach, which draws on data from multiple reliable sources, ensures the study is grounded in a wide range of credible data, thereby enhancing its robustness and credibility.

Pertinent data were drawn from secondary sources to validate the project's structural foundations. The study focused on the independent variables, specifically the HRRP-targeted conditions, and the dependent variables, identified as comorbidities among patients with the targeted conditions. The control variables are the sociodemographic and economic factors that might affect readmission rates. Particular attention was paid to internal and external validity to ensure that the problem and purpose statement aligned with the study's rationale. The theoretical framework drew on transformational leadership theory to identify areas requiring change and to develop a strategy for implementing changes that will help healthcare leaders and policymakers recognize the need for modifications to mitigate 30-day hospital readmission rates.

To examine the readmission trends on the HRRP-targeted conditions, the sampling method gathered data from the AHRQ website, the Center for Medicare and Medicaid Services (CMS) database, the National Readmission Database (NRD), a literature review, one home health service, and three Skilled Nursing Facilities (SNFs) in the greater Sacramento area. The study population comprised patients aged 60 and above with conditions identified by the HRRP who were readmitted to the hospital within 30 days of discharge to determine if their readmission was exacerbated by comorbidities or socioeconomic factors.

Sampling and Data Analysis Size

The sampling method collected data from four sources: n=30 from the AHRQ website, n=30 from the CMS website, n=30 from the NRD, n=30 from home health agencies, and n=30 from SNFs. The data were analyzed using regression, with the independent variable as the predictor and the dependent variable as the outcome. Additionally, a comparative study using a quasi-experimental design was conducted to identify differences among the independent, dependent, and control variables, including socio-demographic factors such as age, gender, and ethnicity, as well as economic factors that may influence the readmission rates. The collected data were analyzed statistically using Analysis of Variance (ANOVA) and SPSS methods to examine differences among variables, and G*Power analyses were employed to determine statistical power. A sample standard deviation was used to compare the mean, and a comparative analysis was conducted to compare the variables.

Problem and Purpose Statement Alignment with the Research Questions and Methodology

The problem and purpose statement was strategically aligned with the study's rationale to assess the appropriateness of internal validity, which should address the research questions: 1. To what extent are patients with HRRP-targeted conditions readmitted within 30 days after discharge due to comorbidities and other socioeconomic factors? 2. To what extent do 30-day hospital readmissions to Skilled Nursing Facilities and patients discharged to home with home health care services affect hospital readmission rates for patients with HHRP-targeted conditions? This emphasizes that the research's appropriateness with respect to internal validity is substantiated, as it sets the stage for establishing validity and demonstrating that the research question can be answered based on the findings. The problem statement, purpose statement, and research questions were aligned to enable the use of quantitative measures to analyze the

numerical data collected. A regression analysis and a comparative study using a quasi-experimental design were employed to compare the number of patients readmitted with specific targeted conditions. At this point, external validity can be substantiated by examining whether the findings can be generalized to other real-world contexts, such as comorbidities and other social factors.

Barroga et al. (2022) stated that the problem, purpose, and research question should be developed based on knowledge derived from current trends. In this context, 30-day hospital readmission is a current issue that can be addressed through evidence-based research. Therefore, the methodology for this project is well-suited to implementation, as the data were derived from existing sources.

The main research approach used in this study was quantitative. This method is well-suited to organizing the research process. According to Williams (2021), the quantitative approach is appropriate for this study because it enables the collection of data to determine averages, identify trends, make forecasts, and present findings applicable to a larger population. Consequently, quantitative research offers a deeper insight into the social landscape.

Needs Assessment

Rates of hospital readmissions within 30 days are increasingly linked to conditions identified by the Hospital Readmissions Reduction Program (HRRP), and this trend is growing rapidly across the United States. The implications of these readmission rates extend far beyond individual hospitals; they are influencing the broader healthcare landscape, impacting hospital finances through penalties imposed for high readmission rates among patients with these specific HRRP-targeted conditions. This financial strain

on hospitals is particularly concerning, as healthcare costs continue to absorb a substantial share of the United States' Gross Domestic Product (GDP). This allocation of financial resources not only affects hospital operations but also has far-reaching consequences for public health funding, which ultimately impacts the well-being of patients and their families.

This research examines nationwide factors contributing to rising concerns about hospital readmissions, with particular emphasis on the greater Sacramento area. By analyzing the dynamics at play in this region, we can better understand how these issues affect the local population and healthcare systems. The collected data examines comorbidities and socioeconomic factors that may influence readmission rates. More importantly, the research seeks to determine the relationships between these factors and conditions beyond those identified by the HRRP. Further complicating this landscape is the influence of age on readmission rates. As we age, especially in cases of chronic conditions like heart failure, the risk of complications increases, making readmission more likely. This aspect not only highlights the multifaceted challenges healthcare providers face in managing patients with comorbidities but also underscores the need for a more nuanced understanding of how readmission policies should be structured.

In addition to the HRRP-targeted conditions and comorbidities, recent studies have shed light on other critical dimensions of hospital readmissions. For example, Cabello-Rangel et al. (2024) found that psychiatric patients are readmitted within 30 days of discharge at significantly higher rates than other patient populations. This phenomenon is primarily attributed to issues related to medication management, underscoring the necessity for improved systems within healthcare settings to ensure proper follow-up and

treatment adherence for these vulnerable groups. Additional observations cited by Nadimpalli et al. (2023) reported that readmissions within 30 days among patients hospitalized for COVID-19 frequently occurred not only due to worsening of HRRP-targeted conditions but also due to complications such as sepsis, kidney disease, and pneumonia. The implications of this finding are particularly pressing in the wake of the global pandemic, as COVID-19 has exacerbated existing health disparities and introduced new challenges for patients living with the targeted conditions and other social determinants.

Considering these findings, it is clear that addressing hospital readmissions involves a multifaceted approach that accounts for various medical, social, and economic factors. Continued research and dialogue within the healthcare community are essential to developing strategies that not only address the financial penalties associated with readmissions but also improve overall patient care and outcomes, ultimately enhancing the quality of life for patients and their families.

Project Questions/ Objectives or Goals

This study examined the impact of 30-day hospital readmission rates on the targeted conditions identified by the HRRP. Rasmussen et al. (2023) highlighted that chronic conditions such as Chronic Obstructive Pulmonary Disease (COPD), Myocardial Infarction (MI), pneumonia, and Heart Failure (HF) play a significant role in the rising rates of hospital readmissions. These conditions have been explicitly identified by the Hospital Readmission Reduction Program (HRRP) as focal points for intervention, as outlined by Murray et al. (2021). However, the discussion surrounding readmission rates is not straightforward. Stephenson (2019) noted that additional factors may contribute to

readmission rates, including patients' gender, demographic characteristics, socioeconomic status, and the complexity of insurance coverage. Despite numerous studies, including findings from the Agency for Healthcare Research and Quality (AHRQ) (2024), which primarily focus on 30-day readmissions among patients diagnosed with HRRP-targeted conditions, a notable gap remains in research that adequately addresses the interplay between these comorbidities and other influencing factors. This oversight is crucial, as understanding whether and how these external variables affect readmission rates could lead to more effective interventions and policy changes.

Recognizing the need to implement strategies that minimize readmissions, the study developed targeted research questions and associated hypotheses to explore whether patients with HRRP-targeted conditions recognize additional factors influencing their readmission experiences beyond their main health issues. By thoroughly investigating these aspects, the research aims to gain a comprehensive understanding of what drives hospital readmissions and to identify opportunities to improve patient outcomes. Consequently, the research questions and hypotheses were crafted to guide the study's progression to serve as a framework for collecting relevant data to support the research questions and corresponding hypotheses. By encompassing a wide range of influencing factors, the study aims to cultivate a holistic view of the patient experience, providing a foundation of informed recommendations that will answer the research questions and provide further insights into understanding the tangibility, coupled with the research problem statement, purpose statement, projection questions, hypotheses, and outcome.

Project Questions

RQ1. To what extent are patients with HRRP-targeted conditions readmitted within 30 days after discharge due to comorbidities and other socioeconomic factors?

$H1_0$. 30-day hospital readmissions will not significantly affect readmission rates due to comorbidities and other contributing factors.

$H1_a$. 30-day hospital readmission rates are associated with other factors, such as comorbidities besides the HRRP-targeted condition.

RQ2. To what extent do patients discharged to Skilled Nursing Facilities and patients discharged to home with home health care services affect hospital readmission rates for patients with HHRP-targeted conditions?

$H2_0$ 30-day hospital readmission rates are directly associated with targeted conditions only and do not impact readmission rates from SNFs and Home Health patients.

$H2_a$. 30-day hospital readmission is highly associated with HRRP-targeted conditions and contributes to readmission rates for patients discharged to SNFs and Homes.

Summary of Research Questions and Hypothesis

RQ1. To what extent do patients identified with the HRRP-targeted conditions get readmitted within 30 days after discharge due to comorbidities and other contributing factors besides the targeted conditions? This research question is relevant because the findings can be tested and validated, thereby supporting the problem statement, the purpose statement, and the hypothesis that 30-day hospital readmission rates are associated with factors beyond the HRRP-targeted condition. However, the null hypothesis posits that 30-day hospital readmission rates are

attributable solely to specific targeted conditions, thereby excluding the influence of comorbidities and other social determinants. This perspective rests on the assumption that there is no concrete evidence to support it, rendering it an inadequate basis for justifying the anticipated outcome.

RQ2. To what extent do 30-day readmissions to SNFs and Home Health Care services impact hospital readmission rates for patients with HRRP-targeted conditions? This research question is relevant and directly associated with the problem statement and the project's purpose. Therefore, the findings can be tested, analyzed, and supported by the results, as intended by the hypothesis statement, which posits that 30-day hospital readmission is strongly associated with HRRP-targeted conditions among patients discharged to SNFs or home with home health services and that this association contributes to readmission rates among patients discharged to SNFs. The Null hypothesis assumes that 30-day hospital readmission rates are directly associated with targeted conditions only and do not impact readmission rates from SNFs. There is no tangible evidence to prove this assumption. Therefore, the null hypothesis will not be reflective.

Introduction to the Theoretical Framework

The design for this project utilized the theoretical framework of transformational leadership. Eaton et al. (2023) stated that transformational leadership theory was first introduced in the 1970s and later developed by scholars, becoming one of the most influential leadership theories in management. According to Compos (2020), the transformational leadership theory is a leadership approach that changes individuals or systems. In this concept, the project draws on the transformational leadership theory to identify areas for change in the healthcare system related to 30-day hospital readmissions

and to develop a strategy for implementing these changes, helping healthcare leaders recognize the need to mitigate 30-day readmission rates. The fundamental design of this project focused on how to build a structure that involves the main elements for the reasons contributing to the 30-day admission and aligns the elements with the theoretical framework that identifies the gap and utilizes the transformational leadership theory to bridge that gap by recommending the most feasible alternatives for reducing hospital readmissions among patients with the HRRP-targeted conditions in relation to comorbidities and other contributing factors.

Among the most recent studies on the adaptation of transformational leadership, Ystaas et al. (2023) identified strategies that have made transformational leadership one of the most recognized leadership styles in healthcare, emphasizing relationship-building to articulate values and vision. Likewise, additional research by Alessa (2021) suggests that transformational leadership theory can be applied to organizational leadership strategies as an effective model, focusing on managing transformational organizational change to elicit change within the system. On the contrary, the transitional leadership strategy could be an alternative to the framework. According to Camilleri (2020), transitional leadership requires training by senior individuals to elicit the expected outcomes in achieving specific organizational goals. Still, the transformational leadership framework is the most suitable for this project because it is effective in healthcare settings that require continuous change, improvement, and adaptation to new conditions. Because the healthcare industry is a constantly evolving landscape, this framework can initiate systemic changes within healthcare organizations. Thus, it is necessary to identify additional factors contributing to 30-day hospital readmission beyond HRRP-targeted

conditions to integrate transformational leadership theory and enhance change in the healthcare system.

Significance of the Project

This study examined the impact of 30-day hospital readmissions across the United States and identified evidence-based contributing factors. According to Health Catalyst (2024), reducing hospital readmission rates can be significantly improved if healthcare organizations implement strategies to strengthen effective performance by implementing new strategies and management strategies to drive sustainable clinical change, implementing the use of technology by utilizing high-value data and analytics to support decision making, include patient engagement in levels of care if patients have the capacity or engage caregivers. While several measures have been implemented to reduce 30-day hospital readmission rates, it is essential to recognize that patients' underlying conditions, comorbidities, and other factors can also contribute to readmissions. Therefore, not all readmissions are preventable.

The outcome of this study will determine whether correlations exist among HRRP-targeted conditions, comorbidities, and other factors contributing to 30-day hospital readmissions. The study's results would benefit healthcare leaders, managers, and healthcare policy enthusiasts by identifying alternatives to reduce 30-day hospital readmissions for HRRP-targeted conditions and by informing the implementation of new policies that account for comorbidities and other factors beyond HRRP-targeted conditions. This project examined several secondary sources relevant to its development by reviewing the HRRP's targeted condition to identify gaps, including comorbidities and sociodemographic factors, as well as the condition itself.

As the United States healthcare delivery system continues to evolve, future research could provide valuable insights to facilitate better transitions and continuation of care for patients with targeted conditions, and to implement new policies that identify and monitor patients with additional contributing factors, such as comorbidities and other social factors, that may lead to readmission. Further study may be needed to address gaps in the HRRP-targeted conditions, with implications for CMS reimbursement strategies based on its established evaluation criteria.

Summary of Evidence-Based Intervention

Recent research has emphasized the considerable effects of 30-day hospital readmissions on patients, their families, hospital finances, and the overall U.S. healthcare system. With healthcare spending accounting for over 18% of U.S. GDP, it is essential to address the rising costs of readmissions, particularly among uninsured elderly individuals, those facing challenges accessing care, those with comorbidities, and those facing socioeconomic factors.

This study aims to identify the factors that lead to 30-day hospital readmissions in the U.S. and to evaluate the effectiveness of strategies to reduce these rates. Evidence suggests that lowering readmission rates can improve clinical outcomes by utilizing technology and involving patients and caregivers more actively. Nevertheless, not all readmissions are preventable due to foundational health issues. The research explored the relationships between specific conditions identified by the Hospital Readmissions Reduction Program (HRRP), comorbidities, and other influencing factors.

The outcomes of this study will assist healthcare leaders and policymakers in developing alternative methods to reduce readmissions while recognizing the impact of

comorbidities. Ultimately, addressing 30-day readmissions is vital to enhancing patient outcomes and lowering healthcare costs, in line with the goals of the Affordable Care Act and the CMS HRRP-targeted conditions, while accounting for comorbidities and various social determinants that contribute to the persistent high readmission rates.

Literature Review

Introduction

Thirty-day hospital readmission has become a primary concern in the United States healthcare system. Researchers have conducted numerous studies to identify and implement quality improvement strategies to reduce 30-day hospital readmission rates. However, the readmission rates continue to pose a significant challenge to hospital finances, government spending, healthcare policymakers, and patients and their families. This quantitative quasi-experimental study aims to investigate, compare, and analyze 30-day hospital readmission rates in the United States among patients with specific conditions identified by recent research, a growing issue highlighted across various studies. The project examines the Hospital Readmission Reduction Program (HRRP) targeted conditions as listed by CMS.gov (2024). These conditions, validated by CMS.gov and the AHRQ Search | Home Page (2024), include pneumonia, Myocardial Infarction (MI), heart disease (HD), Coronary Artery Bypass Graft (CABG), Elective Primary Total Hip Arthroplasty, Total Knee Arthroplasty (TKA), and Chronic Obstructive Pulmonary Disease (COPD) are identified as the leading causes of readmissions within 30 days of discharge.

Terms Used in the Literature Search

In the literature review, these definitions of terms are provided to enhance understanding of the topics. **Arthroplasty** is the surgical reconstruction or replacement of a joint. Research conducted by Chhabra et al. (2022) examined factors associated with unplanned hospital readmissions following discharge after a total knee arthroplasty. **Comorbidities** are medical conditions that coexist with two or more other conditions or diseases. Walsh's research (2021) examined several challenges associated with multiple medical conditions. **HRRP—Hospital Readmission Reduction Program (HRRP).** CMS.gov (2024) defines the Hospital Readmission Reduction Program (HRRP) as a Medicare value-based purchasing program designed to engage patients and caregivers in discharge planning and to reduce avoidable readmissions. **Salient** – was defined as a case's most notable or essential points. Rasmussen et al. (2023) describe some of the most salient reasons for hospital readmission rates in the United States. **Socioeconomic factors** are a multidimensional construct encompassing educational attainment, income, and employment status. Stephenson (2019) identified socioeconomic factors as predictors of 30-day hospital readmissions. **Quasi-quantitative research study –** This research method examines causal relationships between variables using numerical data but does not involve random assignment of participants to groups. Rather, it uses existing groups, making it suitable for practical applications such as evaluating policy changes in designated areas. This design was further explained by Schweizer et al. (2017) and Barrroga and Matanguihan (2022).

This research extends beyond the specific conditions targeted by the Hospital Readmissions Reduction Program (HRRP) and aims to provide a comprehensive understanding of 30-day hospital readmission rates, which have significant implications for patient care and healthcare costs. By examining a wide array of factors contributing to readmissions, the study

seeks to elucidate the dynamics that influence patient outcomes after discharge. A comprehensive investigation was conducted, focusing on multiple evidence-based aspects, including socioeconomic conditions, patient demographics, existing comorbidities, and healthcare access. Socioeconomic factors, such as disability, income level, education, and employment status, can significantly affect a patient's ability to follow up on their care, manage their health effectively, and navigate the healthcare system. Additionally, the presence of comorbidities complicates treatment plans and may lead to an increased likelihood of readmissions if not appropriately managed.

To ensure the reliability and validity of the findings, the data were meticulously obtained from reputable sources, including the Agency for Healthcare Research and Quality (AHRQ) website, the Centers for Medicare & Medicaid Services (CMS) database, and the National Readmission Database (NRD). These resources provide a comprehensive framework for analyzing hospital readmission trends and allow for a detailed examination of patient characteristics and healthcare patterns. By incorporating quantitative data collection methods from multiple sources, the research enhances its justification for addressing the pressing issue of hospital readmissions. This multifaceted approach supports richer analysis, affording greater context for the study's findings and enabling meaningful comparisons with literature from diverse demographic groups. Additionally, this research provides valuable insights into the complex landscape of hospital readmissions, supporting the development of targeted interventions and policy recommendations to improve patient care and reduce unnecessary healthcare costs.

Additional data was extrapolated from secondary sources to validate the project's structural foundations. The study focused on the problems associated with 30-day

hospital readmissions, their significance, and preventive measures, and proposed a plan to reduce these rates. To add value to the project, this literature review critically analyzed the topic from a scientific objective perspective, identifying strengths and weaknesses across multiple sources in the scholarly literature on 30-day hospital readmissions. The gap identified in this study is whether comorbidities and other factors contribute to the increase in the 30-day hospital readmission rates among patients with HRRP-targeted conditions. The outcome of this study is expected to determine whether correlations exist among HRRP-targeted conditions, comorbidities, and other factors contributing to 30-day hospital readmissions. The study's results would benefit healthcare leaders, managers, and healthcare policy enthusiasts by identifying alternatives to reduce 30-day hospital readmissions for HRRP-targeted conditions and by informing the implementation of new policies that account for comorbidities and other factors beyond HRRP-targeted conditions.

Overview of the Literature Review

Preventable hospital readmissions have become a significant concern in the United States' healthcare industry. Findings from recent evidence-based studies indicated that this ever-increasing dilemma has significantly impacted patients and their families, hospital finances, and the United States healthcare delivery system. A broader perspective on the problems associated with 30-day hospital readmissions was highlighted by Figueroa and Wadhera (2022), who noted the ongoing dilemma they pose. This study asserted that this has been an ongoing dilemma for decades, with numerous studies documenting the HRRP's unintended consequences across the United States. Such questionable consequences raised doubts about the effectiveness of the HRRP in reducing

readmission rates. This observation is supported by the findings of Khera et al. (2019), who examined whether the HRRP was relevant to practices that defer or avoid hospitalization beyond 30 days. At one end of the spectrum, frontline clinicians appeared to prevent readmissions of patients with targeted conditions, such as heart failure, to avoid CMS fines. By contrast, the rules governing the targeted conditions were implemented to reduce hospital readmissions and improve quality. Still, the relevance of this notion becomes questionable when patients with severe conditions such as heart failure or acute myocardial infarction are turned away from the hospital due to fear of penalties if the patient is readmitted within 30 days of discharge. This does not uphold the principles behind the improvement in patient-centered outcomes because the result may lead to death, thereby increasing mortality rates.

Research by Gupta et al. (2019) examined 30-day hospital readmission as an essential quality measure, representing a preventable adverse outcome. Given the acknowledgment that several studies have been done to address the 30-day readmission dilemma, little is known about the outcome of readmission rates from a hospital-based Skilled Nursing Facility (HBSNF). This study investigated the relationship between HBSNFs and hospital readmission rates, specifically examining whether hospitals with an adjacent HBSNF experience lower readmission rates than those without one.

One of the anticipated outcomes of this study was to help providers, payors, and policymakers better understand the benefits of having an HBSNF in coordinating transitions of care to acute care services. The results indicated that hospitals with an HBSNF on their campuses had lower 30-day readmission rates than those without one. The study's recommendations suggested that policymakers can use these findings to

implement new policies that incentivize strategies to improve the efficiency of care delivery across various healthcare settings. This study contributes to the project objectives by providing insight into the benefits of having an adjacent Skilled Nursing Facility (SNF) on a hospital campus. It would be beneficial if more SNFs were located closer to an acute care hospital. An additional study by Pauniker et al. (2023) indicated that hospital readmission has become a significant indicator of quality of care in acute hospitals, leading to preventable readmissions and increased financial strain on hospital resources. The study was designed to track hospital readmissions as part of hospital quality measures. It expanded on the implementation of previous quality measures by recommending initiatives to improve transitions of care and to use telephone communication to assess and encourage PCP follow-up. The results indicated no significant differences in readmission rate or whether an appointment was made before discharge. The authors agreed with the main findings of this study, which showed that discharge appointments can improve patients' compliance with follow-up.

The weaknesses noted in this research did not account for demographic information, social factors, patient conditions, or social characteristics. Nonetheless, the study's findings indicate that scheduling an appointment at discharge can help prevent hospital readmission by encouraging patients to keep their follow-up appointments. To build on this research, the authors recommend that future investigations focus on identifying patients who missed appointments, thereby helping uncover factors such as insurance challenges, transportation access, and other socioeconomic factors. This study highlighted the importance of attending follow-up appointments, which could reduce hospital readmissions, thereby reinforcing the significance of this research. Rammohan et

al. (2023) highlight the association between high hospital readmission rates and suboptimal quality of care. They note that inadequate treatment can elevate the risk of mortality due to problems like misdiagnosis, ineffective initial care, poor discharge planning, insufficient aftercare, and missed follow-up appointments. This scenario not only places extra financial strain on hospitals but also adversely impacts patient health outcomes.

To address this growing concern, the authors conducted a study to investigate the root causes and to propose implementing care transition teams. These teams are designed to focus on providing high-quality care, thereby improving patients' expected outcomes by enhancing hospitals' overall effectiveness. The findings suggest that establishing a care transition team can effectively reduce readmission rates and financial pressures on hospitals by offering reliable transition care, effective case management, and timely coordination of care transitions. Additionally, the authors considered other factors, such as social determinants of health. They concluded that future research with a larger sample and extended follow-up would be beneficial for further validation of these findings. As noted by Anand & Mustacchia (2023), assigning post-discharge follow-up to a care team can help reduce readmissions and alleviate financial pressure on hospitals by ensuring a reliable transition, effective case management, and early care allocation. Additional factors, such as social determinants, were also considered. The authors agreed that future research with a larger sample and longer follow-up would help validate these findings.

A comprehensive examination of numerous evidence-based reviews was conducted, highlighting the significant challenges associated with 30-day hospital readmissions in the United States. These readmissions not only affect patient health

outcomes but also have substantial implications for healthcare costs and the overall efficiency of the healthcare system. With this background in mind, the study examined the key initiatives of the Hospital Readmission Reduction Program (HRRP), which was enacted under the Affordable Care Act. The program aims to reduce unnecessary hospital readmissions by incentivizing hospitals to improve care transitions and post-discharge planning. By exploring the specific strategies and methodologies employed within the HRRP, a deeper understanding of the underlying issues contributing to hospital readmissions can be gained, and the effectiveness of the interventions in place to address these challenges can be evaluated, with consideration of the significance of the HRRP-targeted conditions.

Hospital Readmission Reduction Program (HRRP)

According to CMS.gov (2024), the Hospital Readmission Reduction Program (HRRP) is a value-based purchasing program established by Medicare to improve communication among patients and caregivers, reduce readmission rates, and improve patient outcomes. As stated on the CMS website, the HRRP program was proposed in 2012 in response to recommendations by the Affordable Care Act and implemented by the Social Security Act, section 1886(g); thus, setting the requirements for the Secretary of the Department of Health and Human Services to move forward with the enactment of the HRRP. The chart below displays more details about the HHRP.

The HRRP was initially established to improve the United States' Healthcare delivery system by linking payment to the quality of care. According to CMS.gov, this initiative was proposed to improve care coordination, particularly for hospitalized patients before discharge. Research on the HRRP, as reported on CMS.gov (2024), showed that readmission rates vary

nationally by condition and procedure, with substantial variation in experiences for people with Medicare. The HRRP, in conjunction with Hospital Value-Based Purchasing (HVBP), is a program that emphasizes preventive care and collaboration between providers to avoid misdiagnosis and unnecessary treatments, and Hospital-Acquired Condition (HAC) Reduction Programs, a program that encourages hospitals to align their values with the goals of improving patient safety and implement best practices to reduce infection rates in healthcare.

CMS Rules on 30-day Hospital Readmissions

According to CMS.gov (2024), the excess readmission ratio (ERR) is utilized to evaluate hospital performance and determine the viability of the hospital reduction program. This ratio reflects a hospital's relative performance by comparing the predicted-to-expected ratio of unplanned readmission rates. The calculation focuses on conditions targeted by the HRRP, which include Acute Myocardial Infarction (AMI), Chronic Obstructive Pulmonary Disease (COPD), Heart Failure (HF), Pneumonia, Coronary Artery Bypass Graft (CABG), Elective Primary Total Hip Arthroplasty, and Total Knee Arthroplasty (THA/TKA). To perform this calculation, the HRRP considers 30-day risk-adjusted unplanned readmissions, defined as readmissions to the same hospital or another acute care facility, regardless of the primary diagnosis. This methodology has raised concerns among researchers and policymakers, generating opposing viewpoints regarding the HRRP. The Centers for Medicare & Medicaid Services (CMS) (2024) states that hospitals can be penalized under the HRRP if patients with targeted conditions are readmitted within 30 days of discharge. These contributing factors validate the relevance of this research project, which can draw the attention of healthcare leaders and policymakers to the implementation of new healthcare

policies that account for comorbidities and other factors that may contribute to readmission rates.

Conflicting Arguments about the HRRP

Some conflicting arguments regarding the HRRP initiatives suggest that comorbidities, social determinants of health, and HRRP-targeted conditions may contribute to 30-day hospital readmissions. To address the growing dilemma of 30-day hospital readmissions, the Agency for Healthcare Research and Quality (AHRQ) in 2023 identified HRRP-targeted conditions and other contributing factors, including socioeconomic factors, gender, demographics, and insurance status. Research by Stephenson (2019) supports this observation, noting that other socioeconomic factors, such as patients' nonadherence, disengagement, and inadequate care transitions, may also contribute to 30-day hospital readmission rates.

Research by Figueroa and Wadhera (2022) examined the impact of HRRP penalties on hospitals, drawing on an analogy to illustrate how hospital administrators and clinicians respond to the HRRP. The HRRP initiatives are supposed to improve performance and quality of care. However, to avoid penalties, some hospitals have recently changed their triage protocols for patients discharged from the ED who return for possible readmission. The change is an artificially imposed policy that requires admitting these patients for observation or discharging them home. This provides an incomplete picture to CMS, leading it to believe the HRRP criteria for 30-day readmission have been met. Likewise, frontline clinicians avoid readmitting patients due to pressure from hospital administration to avoid 30-day readmission penalties. This study reveals conflicting arguments regarding the success of the HRRP initiatives. An additional survey

by Sheehy et al. (2023) noticed that the HRRP was implemented to improve healthcare quality by reducing hospital readmissions. As a result of the enactment of the HRRP, payments to hospitals with 30-day readmission rates above 30% were reduced, thereby reducing CMS reimbursement. These studies, conducted by Figueroa and Wadhera (2022) and Sheehy et al. (2023), indicate divergent expectations for the HRRP. This divergence presents a conflicting argument about the HRRP's intended purpose and lends credence to the study, underscoring the need to implement new CMS-established healthcare reevaluation policies.

Additional Factors Associated with 30-day Hospital Readmissions

Some conflicting arguments regarding the HRRP initiatives suggest that other factors, such as comorbidities and the HRRP-targeted conditions, may contribute to 30-day hospital readmissions. To address the growing dilemma of 30-day hospital readmissions, the Agency for Healthcare Research and Quality (AHRQ) in 2023 identified HRRP-targeted conditions and other contributing factors, including socioeconomic factors, gender, demographics, and insurance status. Research by Stephenson (2019) supports this observation, noting that other socioeconomic factors, such as patients' nonadherence, disengagement, and inadequate care transitions, may also contribute to 30-day hospital readmission rates.

Waslh (2021) indicated that comorbidities pose a considerable challenge to 30-day hospital readmission rates, as the number of health problems typically increases with age. Consequently, most patients diagnosed with conditions targeted by the HRRP are likely to have multiple diagnoses that could trigger exacerbations and contribute to hospital readmissions. Therefore, potential reasons for readmission may not be directly attributable to the targeted conditions alone. This insight raises concerns about whether

CMS should reconsider its criteria for penalizing hospitals for patient readmissions when comorbidities are the primary reason for readmission, rather than one of the HRRP-focused conditions, given that patients may have one or two targeted conditions while being readmitted for other reasons.

The study's focus on issues surrounding patients discharged home with home health services, rather than examining the nationwide impact of 30-day hospital readmissions, highlights the connection between 30-day hospital readmissions and patient outcomes, as noted by Saragosa et al. (2023). In this study, the authors explored innovative approaches to enhance patients' health outcomes and reduce overall hospital costs by investigating the factors contributing to deficiencies in home care personal support. They identified gaps in demographic characteristics and post-discharge social support that may contribute to 30-day hospital readmissions. The authors agreed that little is known about the correlations between home care services and the predictors of hospital readmission. Drawing on the notion that 30-day hospital readmission is a standard indicator of health system performance, readmission is a common factor of high cost and poor clinical services; the authors conducted this study with the primary interest of finding a solution to reduce hospital readmission rates among patients with home health care services after discharge from the hospital. The study aimed to develop strategies to reduce 30-day hospital readmissions, decrease health system expenditures, and improve patient outcomes.

The results provide a deeper understanding of the factors associated with home care patients at risk for 30-day hospital readmission. The authors agreed that the study's findings indicated a correlation between the risk of hospital readmission within 30 days of

discharge and the receipt of less social support after discharge, as well as longer hospital stays. The relevance of this study is justified by providing a deeper understanding of the characteristics of in-home support services that can inform support and prevent readmission.

The Economic Impact of 30-day Hospital Readmissions

This study offers a comprehensive and valuable exploration of the long-term effects of financial penalties imposed on hospitals regarding their 30-day hospital readmission rates. Driven by recent recommendations from the Centers for Medicare & Medicaid Services (CMS), which underscore the significant relationship between 30-day readmissions and the overall quality of healthcare delivery, this research addresses a critical, pressing issue in the healthcare system. The CMS guidelines not only aim to enhance the quality of patient care but also seek to curb the escalating healthcare costs faced by both hospitals and patients, as a direct result of preventable readmissions.

To provide an in-depth analysis, the research draws on a study by Dean (2023), which collected data from 2008 to 2011. This extensive dataset was developed using demographic information and the Dartmouth Atlas of Health Care (2023), enabling a thorough examination of trends in hospital readmission rates before and after the imposition of financial penalties. Such insights are vital for understanding how policy changes translate into real-world outcomes for patients and healthcare providers.

In comparison, the CMS website reported compelling evidence that these penalties have been effective in reducing readmission rates. Nevertheless, a critical question remains: What are the long-term effects of these financial penalties on hospitals and patient care? This uncertainty surrounding the durability of the penalty effects warrants

further investigation, as it holds significant implications for future healthcare policy and practice. Suppose the penalties are successful only in the short term. In that case, hospitals may still face challenges in maintaining reduced readmission rates, which could potentially jeopardize the quality of care and their long-term financial stability. Therefore, this study not only contributes to the existing literature but also prompts essential discussions about the sustainability and efficacy of punitive measures in improving healthcare outcomes.

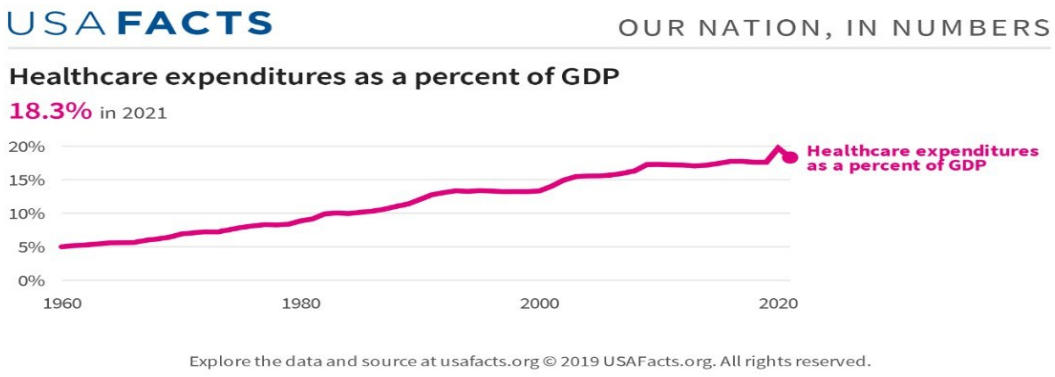
This study aims to examine this crucial question, specifically evaluating how penalties affect 30-day readmission rates among patients with heart failure and Acute Myocardial Infarction (AMI). By comparing hospitals that faced penalties for higher readmission rates with those that did not, this study aims to identify significant differences that can inform future healthcare policies. Interestingly, the findings reveal that hospitals facing penalties for readmissions had higher rates of readmission among patients with pneumonia, acute myocardial infarction (AMI), and heart failure compared to hospitals that were not penalized. This underscores a significant issue that our healthcare system must tackle to improve patient outcomes.

Recent evidence-based studies have illuminated the widespread impact of 30-day hospital readmissions, affecting not only patients and their families but also hospitals' financial stability and the broader U.S. healthcare delivery system. According to USAfacts.org (2020), healthcare expenditure accounts for over 18% of the United States' Gross Domestic Product (GDP), a statistic echoed by Soyuk (2023), underscoring the substantial investment directed toward healthcare. This allocation has direct implications for public health expenditure and the well-being of patients and their families. This study

aims to elucidate the conditions in the United States that require urgent attention to address these escalating concerns effectively. The graph below illustrates the percentage of U.S. GDP allocated to healthcare, highlighting a benchmark conversation in our society.

Figure 1

Percentage of GDP Healthcare Expenditure



As illustrated in the graph above, healthcare expenditure as a percentage of GDP is one example of the economic impact of rising healthcare costs in the United States. How much of this is related to hospital issues, such as readmissions among elderly patients without health insurance, limited access to care, comorbidities, and socioeconomic factors, as well as additional fines for 30-day readmissions?

Summary

Recent research has emphasized the considerable effects of 30-day hospital readmissions on patients, their families, hospital finances, and the overall U.S. healthcare system. With healthcare spending accounting for over 18% of U.S. GDP, it is essential to address the rising costs of readmissions, particularly among uninsured elderly individuals,

those facing challenges accessing care, those with comorbidities, and those facing socioeconomic factors.

This study aims to identify the factors that lead to 30-day hospital readmissions in the U.S. and to evaluate the effectiveness of strategies to reduce these rates. Evidence suggests that lowering readmission rates can improve clinical outcomes by utilizing technology and involving patients and caregivers more actively. Nevertheless, not all readmissions are preventable due to foundational health issues. The research explored the relationships between specific conditions identified by the Hospital Readmissions Reduction Program (HRRP), comorbidities, and other influencing factors. The outcomes of this study will assist healthcare leaders and policymakers in developing alternative methods to reduce readmissions while recognizing the impact of comorbidities. Ultimately, addressing 30-day readmissions is vital to enhancing patient outcomes and lowering healthcare costs, in line with the goals of the Affordable Care Act and the CMS HRRP-targeted conditions, while accounting for comorbidities and various social determinants that contribute to the persistent high readmission rates.

Section 2: Method and Design

Introduction

Recent studies have identified a major challenge in the United States healthcare system: The number of preventable hospital readmissions within 30 days of discharge has risen significantly, generating increasing attention from healthcare policymakers, administrators, and leaders. It has sparked a wave of discussions focused on identifying effective strategies to enhance patient care, improve outcomes, and ultimately reduce the burden of readmissions on both patients and healthcare facilities. Healthcare professionals are keenly aware that readmissions not only have significant implications for patient health but also contribute to escalating healthcare costs and strain resources within the healthcare system. As a result, various stakeholders, including hospitals, insurance companies, and government agencies, are collaborating to tackle this pressing issue from multiple angles. Studies to date have highlighted several key factors contributing to troubling trends in hospital readmissions. These factors include inadequate discharge planning, insufficient patient education, gaps in follow-up care, and the challenges patients face in managing their conditions post-discharge. Identifying these variables is vital to developing targeted interventions that effectively reduce readmissions.

To further explore the systemic development of this project, it is imperative to proceed to the methodological design of the research and its alignment with the overarching research questions. This step involves selecting appropriate data collection methods, defining the population of interest, and determining the approach to analyzing the findings. A robust methodological framework ensures that the study yields valid and reliable results, ultimately contributing to evidence-based recommendations that can

meaningfully impact patient care and reduce readmission rates. By addressing the complex interplay of factors influencing hospital readmissions, researchers and practitioners alike can work toward a more effective, patient-centered healthcare system.

Methodology, Design, and Method

Alignment of the Chosen Methodology, Design, and Method with the Problem Statement, Purpose Statement, and Research Questions.

The problem and purpose statements should closely align with the reasons for conducting the study, particularly with respect to the project's internal validity. The central research questions address a crucial issue: How do 30-day readmissions to Skilled Nursing Facilities (SNF) and Home Health Care services affect hospital readmission rates, as well as patients with comorbidities and other social factors? With this affirmation, the research is poised to demonstrate internal validity, validating that the research question can be effectively addressed through the findings.

To align the problem statement, purpose statement, and research questions, a quantitative methodology was employed to analyze the collected data, which primarily consisted of numerical values. The methodology employed a quasi-experimental comparative study, enabling the examination of readmission rates among patients with specific conditions. Moreover, the study's external validity is assessed by examining whether the findings can be generalized to real-world settings. As stated earlier, Barroga et al. (2022) note that the problem, purpose, and research question should be developed in line with current knowledge trends. In this context, 30-day hospital readmission is a current issue that can be addressed through evidence-based research. The chosen methodology and design for this project correspond well with the project questions and

effectively utilize existing data to generate valuable insights. This approach has the potential to yield significant discoveries in the future by providing valuable insights for the healthcare industry.

The quantitative methodology is the ideal approach for this project because it provides a solid foundation for the research. As stated by Williams (2021), the quantitative method is an appropriate research approach for the proposed study because the data collected can be used to identify averages and patterns, make predictions, and present results based on a broader population. This notion should support the conclusion that the design is consistent with the selected methodology and that an alternative method, such as a qualitative approach, would not be suitable for analyzing quantitative data. Therefore, the quantitative research methodology provided a deeper understanding of the social world. Reviewing the connection between the strategic developments of the chosen methods and the design will provide further insight into the alignment of the project's methodology and design.

Systemic connections among the various parts are essential for a deeper understanding of the project's alignment with the chosen methodology, design, and methods, as well as the problem statement, purpose statement, and research questions. As noted earlier in the project development, the problem statement was introduced, noting that the problem to be addressed is the 30-day hospital readmission rates associated with HRRP-targeted conditions, an issue that has impacted hospital finances through fines for readmission rates among patients with targeted conditions, as well as the lives of patients and their families.

In reviewing the purpose statement, which was introduced as a quantitative quasi-experimental study to investigate, compare, and analyze the 30-day hospital readmission rates among patients with the targeted conditions (MI, Heart Failure, COPD, Pneumonia, Coronary Artery Bypass Graft (CABG) Surgery, Elective Primary Total Hip Arthroplasty (THA), and Total Knee Arthroplasty (TKA). While the relevance of this study was underscored by the combination of these targeted conditions, the study's significance lies in evaluating the tangible impact of a gap arising from the lack of information on comorbidities and other socioeconomic factors, as well as the targeted conditions identified by the HRRP.

To keep the study's objectives aligned with the methodology, the examination of recent evidence-based studies has revealed that this ever-increasing dilemma has significantly impacted patients and their families, hospital finances, and the overall healthcare delivery system in the United States. The complexities of this issue are particularly concerning, as they intertwine with the personal experiences of individuals seeking care and with broader economic implications. The bulk of the data examined indicates that healthcare expenditures account for more than 18% of the United States' Gross Domestic Product (GDP). This substantial figure underscores the significant role healthcare plays in the national economy. As healthcare spending continues to rise, patients often face higher out-of-pocket costs, which can strain families financially and contribute to disparities in access to care.

The economic burden on hospitals is also noteworthy. With rising operational costs and declining reimbursements, many healthcare facilities struggle to maintain the quality of care while balancing their budgets. This escalating situation may require

difficult decisions about resource allocation, potentially affecting the quality of patient care. Additionally, the healthcare delivery system itself is under pressure to adapt and innovate to manage these increasing expenditures effectively while still prioritizing patient outcomes and satisfaction. The findings from these recent studies underscore the profound and multifaceted impact that escalating healthcare costs have on society. It is increasingly clear that rising healthcare expenses affect not only individual patients but also families, communities, and the healthcare system. Increased costs can impose significant financial strain on households, forcing many individuals to make difficult decisions about their healthcare and even forgo necessary treatments and preventive care. This situation creates a ripple effect that compromises the well-being of entire communities. When individuals cannot access the care they need, it leads to worsening health outcomes, increased hospitalizations, and higher long-term costs for both patients and the healthcare system. Furthermore, the burden of healthcare expenses can exacerbate existing inequalities, disproportionately affecting underserved populations who may already face barriers to accessing quality medical care.

Addressing this dilemma requires a collective effort from policymakers, healthcare providers, and communities at large. Collaborative initiatives are essential to develop sustainable solutions that prioritize the health and well-being of all individuals. This can include strategies such as reforming payment models to prioritize value-based care, implementing community health programs that address social determinants of health, and promoting transparent pricing to empower patients in their healthcare decisions. Additionally, stakeholders must work together to advocate for policies that expand access to affordable healthcare services, invest in preventative care, and support

innovative healthcare delivery systems. Only through a unified approach that accounts for the diverse needs and challenges of all populations can we hope to create a more equitable and efficient healthcare system that meets future demands. The time for action is now, as the health of our society depends on the choices we make today.

Findings by Project Question(s)

Research Questions Alignment with the Chosen Methodology

This study examined the factors influencing 30-day readmission rates, with a focus on conditions identified by the Hospital Readmissions Reduction Program (HRRP). According to Rasmussen et al. (2023), prevalent conditions like COPD, myocardial infarction, congestive heart failure, pneumonia, and heart failure significantly contribute to rising readmission rates. These have been recognized as key areas of focus by HRRP, as discussed by Murray et al. (2021). However, it is important to consider the diverse perspectives on this issue. Stephenson (2019) suggests that additional elements such as gender, demographics, socioeconomic status, and insurance complexities also play a role. Although several studies have examined hospital readmissions for HRRP-targeted conditions, there remains a notable gap in research on patients with comorbidities and the range of factors influencing readmissions. This study aims to bridge that gap by formulating specific research questions and hypotheses to deepen understanding of the objectives.

RQ1. To what extent are patients with HRRP-targeted conditions readmitted within 30 days after discharge due to comorbidities and other socioeconomic factors?

$H1_0$. 30-day hospital readmissions will not significantly affect readmission rates due to comorbidities and other contributing factors.

$H1_a$. 30-day hospital readmission rates are associated with other factors, such as comorbidities besides the HRRP-targeted condition.

This research question is relevant and directly associated with the problem statement and the project's purpose. Therefore, the findings can be tested, analyzed, and confirmed by the results, as intended by the hypothesis that 30-day hospital readmission is strongly associated with comorbidities and other social factors that contribute to readmission rates among patients discharged to skilled nursing facilities (SNFs) and home with home health services. The Null hypothesis assumes that 30-day hospital readmission rates are directly associated with comorbidities and other social factors. There is no tangible evidence to prove this assumption; it is not significant to support evidence-based research for this project. The research question is relevant to the project's methodological development and to the collection of evidence-based data for quantitative analysis.

RQ2. To what extent do patients discharged to Skilled Nursing Facilities and patients discharged to home with home health care services affect hospital readmission rates for patients with HHRP-targeted conditions?

$H2_0$ 30-day hospital readmission rates are directly associated with targeted conditions only and do not impact readmission rates from SNFs and Home Health patients.

This research question is relevant because the findings can be tested and validated, thereby supporting the problem statement, the purpose statement, and the hypothesis that 30-day hospital readmission rates are associated with the HRRP-targeted condition. However, the null hypothesis assumes that 30-day hospital readmission rates are directly associated with targeted conditions only and are not affected by SNF readmission rates.

This assumes there are no established facts and that this research question is relevant to the selection of the methodology for developing quantitative analysis.

Research Method and Design Plan

This project employed the quantitative methodology. Based on multiple findings from the literature review, the appropriateness of developing this project was confirmed by the robust evidence supporting the problem and purpose statements. The research design was a quantitative quasi-experimental study that investigated, compared, and analyzed 30-day hospital readmission rates in the United States among patients with the targeted conditions identified by the HHRP. The development of this quasi-experimental design is validated by Miller et al. (2020), who argue that it is appropriate for addressing the research questions in the absence of randomization and for examining the causal relationship between the independent and dependent variables. For this study, the independent variables were HRRP-targeted conditions, and the dependent variables were comorbidities among patients with these conditions. Although not required for a quasi-experimental study, control variables were identified as socio-demographic and economic factors that might affect readmission rates. To enhance rigor in this quantitative study, a regression analysis was conducted to examine the relationship between the variables and demonstrate how one variable affects the other. A G-power analysis was used to determine the minimum sample size for this quantitative quasi-experimental study.

The development of this quantitative quasi-experimental research project primarily focused on ensuring both internal and external validity were applicable for the project's objectives. As Andrade (2018) explains, internal validity is crucial as it ensures that the study design, conduct, and analysis are free from external bias and can effectively answer the research question. Conversely, external validity examines the extent to which

study findings can be generalized to other contexts. As Lesko et al. (2020) point out, internal validity refers to the quality of a study's design and execution, while external validity concerns the extent to which the findings can be generalized to the broader natural world, taking into account the potential inclusion and exclusion of results due to external bias.

Project Design

According to Compos (2020), transformational leadership theory posits that transformational leaders create change, innovate, and shape the future of organizational structures. The design of this project employed the transformational leadership framework, which seeks to elicit changes in individuals or systems. In this concept, the project draws on transformational leadership theory to identify areas requiring change and develop a strategy to implement changes that will help healthcare leaders recognize the need to improve 30-day hospital readmission rates. The fundamental design of this project focused on how to build a structure that involves the main elements for the reasons contributing to the 30-day admission readmissions and aligns the elements with the theoretical framework that identifies the gap and utilizes the transformational leadership theory to bridge that gap by recommending the most feasible alternatives for reducing hospital readmissions among the HRRP targeted conditions in relation to comorbidities and other contributing factors.

The problem and purpose statement aligned with the study's rationale for assessing the appropriateness of internal validity for this project. Internal validity should address the research question: To what extent do 30-day readmissions to SNF and Home Health Care services affect hospital readmission rates among patients diagnosed with the HRRP-

targeted conditions, while accounting for additional factors such as comorbidities and other social factors? The appropriateness of the research with respect to internal validity is substantiated by the findings, which demonstrate that the research question can be answered. The problem statement, purpose statement, and research questions were aligned to enable quantitative analysis of the numerical data collected. A regression analysis and a comparative study using a quasi-experimental design were employed to compare the number of patients readmitted with specific targeted conditions. The final assumption of the study is that external validity can be substantiated by examining whether the findings generalize to other real-world contexts.

Population and Sampling

To examine readmission trends associated with HRRP-targeted conditions, the sampling method used data from the AHRQ website, the Centers for Medicare & Medicaid Services (CMS) database, the National Readmission Database (NRD), one home health service, and three Skilled Nursing Facilities (SNFs) in the greater Sacramento area. The targeted population for this proposed study comprises patients aged 60 and above with conditions identified by the HRRP who were readmitted to the hospital within 30 days of discharge. Glans et al. (2023) justify the appropriateness of the study's target population, suggesting that older adults are more likely to be readmitted within 30 days of discharge due to multiple factors, including age, socioeconomic status, and polypharmacy. To further assess the appropriateness of this study, demographics were examined in greater detail, including gender, quality of life, and comorbidities. As stated earlier, the problem to be addressed is the 30-day hospital readmission among patients with the targeted conditions. The purpose was to investigate, compare, and analyze 30-

day hospital readmission trends among patients with the target condition to determine whether the study's relevance is attributable to limited information on comorbidities and other contributing factors, such as demographics and socioeconomic status.

Inclusion and Exclusion Criteria to Select the Sample

The inclusion criteria for this study on 30-day hospital readmission focused on patients aged 60 years and older with any of the HRRP-targeted conditions, comorbidities, and other socioeconomic factors. Patients must meet the qualification criteria to be considered. The inclusion criteria for qualification were patients discharged from an acute care hospital with a documented diagnosis of an HRRP-targeted condition and an unplanned readmission to the same hospital within 30 days of discharge. On the contrary, patients on the exclusion criteria include patients who were readmitted to a different hospital, patients with planned readmissions, or patients who died within 30 days.

After obtaining IRB exemption from the National University, data collection did not require human subjects' participation, as the bulk of information was obtained from secondary data, reports from a Home Health agency, and three skilled nursing facilities. Participating facilities were not identified. Additional information on the state of California was obtained from the CMS website and the Department of Health Care Access and Information (HCAI), which provides various data and resources as reported on www.data.chhs.ca.gov (2024).

Materials and Instrumentations

The data-gathering instrument incorporated a comprehensive review of the participating facilities' reports, as presented on the CMS website. This study employs a quantitative methodology, emphasizing the origins and evidence of reliability and validity derived from data

collected at the participating facilities. For secondary data collection, the materials consisted of existing data sources, including information from published reports, academic journals, industry publications, and government statistics. The instrumentation consisted of tools for locating information, including libraries, websites, and the Internet. The instrumentation for analysis includes software for SSPS data analysis. Since the data were derived from secondary sources and did not involve human subjects, the reliability and validity of the collection criteria and instrumentation were sufficient to ensure the appropriateness of the project objectives.

Operational Definition of Variables

This quantitative quasi-experimental study of 30-day hospital readmission emphasizes that the independent variables were the HRRP-targeted conditions, and the dependent variables were the comorbidities among patients with these conditions. The control variables were the socio-demographic and economic factors that might impact readmission rates. Andrade (2021) defines independent variables as values that influence other variables, such as age and gender. In this context, age- and gender-related trends in 30-day readmissions among patients with HRRP-targeted conditions were examined. The dependent variables, as defined by Bhandari (2021), are those that change in response to the independent variable, with the outcome measured in the study. In this context, the study examined how HRRP-targeted conditions (independent variables) affect the dependent variable, namely comorbidities among patients with those conditions. The control variables were the socio-demographic and economic factors that might impact readmission rates.

A comparative design using a quasi-experimental approach was implemented to investigate differences among the independent, dependent, and control variables. While it

is not a strict requirement for quasi-experimental studies to include control variables, it is deemed essential to incorporate these socio-demographic and economic factors. By doing so, a more robust analysis was conducted that accounts for potential confounding variables that could impact the outcomes. This comprehensive approach enables a deeper understanding of how various population characteristics may correlate with and potentially influence healthcare readmission rates. Through this meticulous design, details were drawn to present meaningful insights that can inform both practices and policy-making in healthcare settings.

The collected data were subjected to rigorous statistical analysis using the chi-square test and Analysis of Variance (ANOVA). According to Turhan (2020), the chi-square test plays a vital role in statistics, particularly in detecting correlations among non-numeric variables. This test is instrumental for researchers seeking to explore relationships among categorical variables, enabling the identification of patterns that might otherwise go unnoticed. In addition to the chi-square test, Mishra et al. (2019) highlighted the importance of ANOVA in statistical comparisons. They clarify that ANOVA operates on principles similar to those of the student's t-test but is specifically designed for scenarios in which researchers seek to compare means across three or more groups. This method enhances the ability to assess variations within and between groups, providing a more comprehensive understanding of the data landscape. For instance, in a healthcare context, the mean can be used to compare the number of Hospital Readmission Reduction Program (HRRP) patients readmitted for a specific HRRP diagnosis with those readmitted with multiple comorbidities. By employing these statistical methods, researchers can uncover critical insights into the factors influencing readmission rates,

with significant implications for patient care strategies and healthcare policies. This analysis not only elucidates the relationships among various variables but also contributes to a more nuanced understanding of patient demographics and underlying health conditions, thereby enhancing the overall quality of healthcare delivery.

Collecting evidence-based data was crucial for effectively supporting the study's objectives. This approach ensures that the efforts are grounded in measurable facts and reliable information. Therefore, specific objectives that adhere to the SMART criteria—specific, measurable, achievable, relevant, and time-bound — were used to define the goals within this framework. These objectives were used to articulate precise operational outcomes to establish a thorough needs assessment. Additionally, the outline includes a detailed timeline outlining the key milestones and deadlines required for project completion. This structured plan will not only facilitate more organized project execution but also enable continuous monitoring and evaluation of progress, ensuring that the outcome remains aligned with the overarching goals throughout the study. Research by Bahrami et al. (2022) demonstrates the effectiveness of applying SMART criteria for research projects in achieving optimal goal and objective definition.

Therefore, the application of SMART goals for this project is as follows:

Table 1

SMART GOALS

SMART GOALS

Specific	Specific goals for this project include collecting and analyzing pertinent, evidence-based data to support the HRRP's objectives for targeted conditions. The goal is to examine patient records for 30 days post-discharge from the hospital to determine whether patients were readmitted and whether comorbidities or socioeconomic factors correlate with readmission.
Measurable	The data collection was measurable because it was quantitative and yielded quantifiable data for analysis. The period allocated for data collection was also quantifiable, thereby facilitating the determination of the measurable outcomes of the data collected.
Achievable	Given the specific objectives of this research, the goals were achievable due to the extensive secondary data on the subject. The additional speculative observation required a comparison and examination of available tangible data to determine whether comorbidities and other factors affect readmission rates. Therefore, the goals are achievable.
Relevant	The project's relevance was justified by evaluating connections to the overall project context, supported by evidence and data; the availability of sources; potential biases; and the verification of facts from multiple reliable sources.
Timebound	Given the project's timeline, the final presentation was justified by the sequence of events: the project progressed from basic to advanced, culminating in the presentation. The time frame was critical for each phase of the project.

Alignment of the Goals and Objectives with the Problem, Purpose, and Design

As previously stated, the research design was developed as a quantitative quasi-experimental study to investigate, compare, and analyze the 30-day hospital readmission rates in

the United States among patients with the targeted conditions. As stated in CMS.gov (2024), these conditions are identified as (MI, Heart Failure, COPD, Pneumonia, Coronary Artery Bypass Graft (CABG) Surgery, Elective Primary Total Hip Arthroplasty (THA), and Total Knee Arthroplasty (TKA), as identified by the Hospital Readmission Reduction Program (HRRP) among patients discharged to their homes with home health services and patients discharged to Skilled Nursing Facilities (SNF). The development of this research design, which incorporates a quasi-experimental design, is validated by Miller et al. (2020), who state that the appropriateness of this design can be used to answer the research questions in the absence of randomization, while focusing on the cause-and-effect relationship between the dependent variables and the independent variables. For this study, the independent variables were the HRRP-targeted conditions, and the dependent variables were comorbidities among patients with these conditions. Although a quasi-experimental research design does not require a control variable, sociodemographic and economic factors were included as controls to assess their impact on trends in 30-day readmission rates.

The strategic development of this project focuses on internal and external validity. As Andrade (2018) explains, internal validity is crucial as it ensures that the study design, conduct, and analysis are free from external bias and can effectively answer the research question. Conversely, external validity examines the extent to which study findings can be generalized to other contexts. The project draws from the works of Lesko et al. (2020), who point out that internal validity is about how well a study is conducted, while external validity refers to how well the findings will fit in with the natural world, delineating the inclusion and exclusion of the results based on awareness of external bias.

Metrics or Performance Measurements

This project's performance measurement instrument collected data from participating institutions by examining their CMS reports over 30 days. For comparison, this study employed a quantitative methodology, emphasizing the origin and evidence of reliability and validity by reviewing the participating institution's CMS reports and data collected from the AHRQ website, the Centers for Medicare & Medicaid Services (CMS) database, and the National Readmission Database (NRD). The metrics used to assess the fundamentals of this project were drawn from secondary data, including published scientific and emerging publication metrics used to measure and disseminate the results of scholarly research projects.

The effectiveness of the tracking system on the gathered data was evaluated using quantitative metrics, including G*Power to estimate the population size. An Analysis of Variance (ANOVA) was conducted to investigate differences among the means of more than two groups, and a standard deviation for the population was determined to compare the means of the collected data regarding the targeted conditions. This analysis was carried out in SPSS to assess the variables. According to Mishra et al. (2019), the foundational assumptions of ANOVA are best met when it is combined with regression analysis, which can explore relationships among variables and illustrate how one variable influences the other. The student's t-test assesses the difference between the means of two groups. For instance, it compares the average number of patients readmitted with HRRP-targeted conditions to that of patients with additional comorbidities. Additional assumptions relevant to ANOVA include the requirement that the samples be normally distributed, that the data be independent, that the groups have equal variances, and that the samples be

selected randomly and independently. All chosen metrics are consistent with the project's problem, purpose, and design, and are suitable for data collection, analysis, and interpreting the anticipated study outcomes. Thus, the problem statement, purpose statement, and research questions were effectively aligned to facilitate the use of quantitative metrics to analyze the numerical data collected.

Project Procedure

Data for this study were collected from secondary sources; therefore, original data collection involving direct interaction with participants was not necessary. As a result, the study did not require Institutional Review Board (IRB) approval because it did not involve human subjects or personal data that would typically require ethical oversight. Instead, the focus was on analyzing existing reports and datasets.

To gather the relevant information, comprehensive reports from the Centers for Medicare & Medicaid Services (CMS) were utilized. These reports were specifically chosen from institutions such as Skilled Nursing Facilities and a Home Health Agency located in the greater Sacramento area. By accessing data through the CMS website, the study aimed to analyze readmission trends in these healthcare settings. This approach enabled a broader understanding of the factors influencing patient readmissions, providing valuable insights into the quality of care and the effectiveness of services in the US healthcare industry. The findings are expected to contribute to ongoing discussions about improving healthcare delivery and policy initiatives aimed at reducing unnecessary hospital readmissions.

Data Collection and Analysis

The data collection timeframe was based on observations of readmissions within 30 days following discharge. Data from the CMS, AHRQ, and NRD websites were reviewed to gather nationwide data. This did not require IRB approval, as the data were derived from secondary sources and did not involve any harm to participants. The advice from the National University IRB was applied to the approval requirements for these sources. According to cayuse.com (2024), ownership of secondary data was acknowledged. It was not delineated from the objectives of the original study, as established by the CMS HRRP-targeted conditions, to identify the targeted conditions as the most salient reasons contributing to the increasing rates of readmissions.

The management of this project adheres to the project management and oversight protocols. According to Cayuse.com (2024), the critical elements of project management include actively monitoring the project's progress to ensure it is progressing as planned and meeting the goals and objectives. Michniuk (2024) stated that project oversight ensures that research complies with requirements and that progress is evaluated against established deadlines.

The bulk of the data for this project was obtained from mandatory reports submitted via the CMS website and the NRD, ensuring a comprehensive approach to data collection. Additional data from the Skilled Nursing Facilities and the Home Health agency did not require volunteer participation, as the Skilled Nursing Facilities agreed to provide their CMS reports for the requested 30-day period. A timeframe was established to strategically determine the project's progression upon receipt of IRB approval and advice. This comprehensive approach, which incorporates data from multiple reliable

sources, ensures the study was grounded in a wide range of credible data, thereby enhancing its robustness.

The collected data, which can be analyzed using numerical coding, underwent a thorough process that assigned a specific numerical value to each data point or response, thereby translating non-numerical data into measurable units to examine correlations among patterns and relationships. The analysis was conducted using statistical software, including SPSS and G*Power, to determine the minimum sample size, ensuring a rigorous and comprehensive approach to data analysis.

The importance of clearly defining the study's variables was emphasized to enhance understanding of the objectives. The independent variables were the HRRP-targeted conditions, and the dependent variables were the comorbidities present among patients with those conditions. The control variables include socio-demographic and economic factors that could influence the readmission rates. Andrade (2021) defines the independent variables as values that influence other variables, such as age and gender. In this context, this study examined age- and gender-related trends in 30-day readmissions among patients with HRRP-targeted conditions.

The dependent variables, as defined by Bhandari (2023), are the variables that change in response to the independent variable and are the outcomes measured in the study. In this context, HRRP-targeted conditions (independent variables) affect the dependent variable, namely, comorbidities among patients with these conditions. Although not required for a quasi-experimental study, control variables included socio-demographic and economic factors identified as additional determinants of readmission trends.

The sampling method collected data from the following sources: n = 60 from the AHRQ website, n = 60 from the CMS website, n = 30 from the NRD, n = 30 from a home health agency, and n = 60 from three skilled nursing facilities. Data analysis employed regression and a two-way analysis of variance (ANOVA) to assess the significance of differences between the independent and dependent variables. The independent variable (HRRP Targeted-conditions) served as the predictor, and the dependent variable (Comorbidities) was the outcome variable. A causal-comparative design using the quasi-experimental approach to identify differences between the independent, dependent, and control variables, including socio-demographic factors such as age, gender, ethnicity, and economic factors that may impact readmission rates, and the control variables were the socio-demographic and economic factors that may affect readmission rates. To enhance rigor in this quantitative study, regression analysis was used to examine relationships among variables and to assess the effect of one variable on the others.

Statistical tests of the collected data were performed using Analysis of Variance (ANOVA). Mishra et al. (2019) stated that the ANOVA is equivalent to Student's t-test for comparing the means between two groups. For example, we can compare the mean number of patients readmitted for HRRP-targeted conditions across age groups, between patients with HRRP-targeted conditions and those with HRRP-targeted conditions and additional comorbidities, or between genders. Utilizing these various statistical tests to analyze the project is sufficient and appropriate for meeting the study's objectives.

Assumptions Relating to 30-day Hospital Readmissions

CMS.gov (2024) highlighted some of the significant primary assumptions about 30-day hospital readmissions are poor quality of care during hospitalization, inadequate transition of

care due to poor discharge planning, patient education, failure to keep follow-up appointments, length of hospital stay, elderly patients are most likely to be readmitted within 30 days, and severity of conditions. However, CMS identified the HRRP-targeted conditions as the most salient factors contributing to 30-day hospital readmissions.

Rationale Corresponding to the Assumptions

According to CMS.gov (2024), the observed poor quality of care during hospitalization highlights several critical factors that contribute to adverse patient outcomes. One significant insight is that symptoms are more likely to recur after discharge if they are not adequately managed during the hospital stay. Effective symptom management in the hospital is pivotal to ensuring patients leave in a stable condition and with a clear understanding of their ongoing care needs.

Inadequate transition of care, particularly stemming from poor discharge planning, is another crucial factor that can significantly affect patient outcomes. Poor discharge planning often leads to insufficient communication of pertinent information between healthcare providers and patients, resulting in confusion and misunderstandings about follow-up care. When patients leave the hospital without a thorough understanding of their discharge instructions or care plan, they may be unable to adhere to necessary follow-up protocols, increasing the likelihood of readmission. Furthermore, inadequate patient education regarding their care plan can significantly impact readmission rates. Patients who do not fully understand their treatment options, medication regimens, or lifestyle modifications may struggle to effectively manage their health post-discharge. This lack of awareness can create barriers to successful recovery, as patients may not recognize warning signs of complications or be equipped to engage in self-management

practices. Missed follow-up appointments also pose another risk factor for readmission. Failure to keep scheduled appointments may prevent the provider from reevaluating the patient's status and adjusting the treatment plan accordingly. Regular follow-ups are crucial for monitoring progress and identifying potential issues before they escalate into more serious health problems that require hospitalization.

Particularly concerning is the demographic of elderly patients over 70 years old, who are statistically more likely to be readmitted. This increased risk can be attributed to multiple comorbidities, which complicate their overall health status and necessitate more complex care strategies. As these patients grapple with several interconnected health issues, their capacity to manage their health independently becomes increasingly challenging. Moreover, patients with more severe medical conditions are also more likely to experience readmission, primarily due to the complexity of their treatment needs. Severe conditions often require intense and ongoing intervention, which can strain the healthcare system and necessitate additional hospital visits if not managed appropriately. Therefore, healthcare systems must prioritize improving care transitions, providing comprehensive patient education, and ensuring adherence to follow-up to mitigate these risks and reduce readmission rates.

Limitations Associated with 30-day Hospital Readmissions

According to CMS.gov (2024), limitations on 30-day hospital readmission rates are quality measure issues. They include assumptions regarding patient-related factors, quality of care during hospitalization, socioeconomic factors, and post-discharge patient compliance. However, the 30-day hospital readmission rates for this research project have distinct limitations. Some of the research's critical limitations include the importance of transparency. The rationale

is that the study's limitations should be openly discussed to ensure accurate results and to inform future research objectives. Other limitations may include the study design, sample size, data collection, methodology, findings, and potential biases. Fetzer (2022) states that limitations can alter study results by changing conclusions. Therefore, the audience should be made aware of the limitations. The rationale for this approach is to ensure the study's applicability while maintaining the credibility and validity of the research findings under external constraints.

Measures to Mitigate the Limitations Associated with 30-day Hospital Readmissions

Recent research has noted that 30-day hospital readmission is widely associated with quality measures during and after hospitalization, socioeconomic factors, comorbidities, and other factors. The measures to mitigate 30-day hospital readmission are directly tied to the HRRP-targeted conditions. According to cms.gov, the HRRP is a Medicare value-based purchasing program designed to help hospitals improve care coordination, engage patients and caregivers in discharge planning, and reduce unnecessary readmissions.

Delimitations to 30-day Hospital Readmission Rates

George (2024) stated that limitations often arise from external constraints, and delimitation refers to the boundaries and parameters the researcher outlines to specify the inclusions and exclusions that narrow the study's scope. For this project, the delimitations will focus on the research's purpose and scope, including objectives related to geographic, demographic, and conceptual limitations. The rationale for these objectives is to maintain geographic limitations by focusing on a specific area and maintain demographic constraints by focusing on a particular age or group, for example, patients over the age of 60 who were identified with any of the HRRP-targeted conditions, and maintain conceptual limitations by limiting the study to focus on the main objectives to validate the findings.

Research by Coker (2022) examined the functions of delimitation in research by mapping the process of a dissertation research project to enhance the rigor and relevance of the findings. This was achieved by correlating the research's purpose, methodology, contribution, and conclusions with the project. This insightful analogy added vigor to this project by conceptualizing the delimitation decisions related to the existing literature on 30-day hospital readmissions; the theoretical framework that utilize the transformational leadership theory, the problem statement whose overall focus is on the issues surrounding the 30-day hospital readmissions, the purpose statement which aims to identify, investigate, compare, and analyze 30-day hospital readmission rates among patients with the HRRP-targeted conditions, and the project question that seeks to examine whether the increasing rates of 30-day hospital readmissions are associated with other factors such as comorbidities in addition to the HRRP-targeted conditions. In keeping with the study's constraints, the 30-day hospital readmission delimitation aligns with the project's questions, objectives, and goals, as supported by the existing literature.

Ethical Assurance

Ethical approval for this project was obtained from the International Review Board (IRB) to ensure compliance with the university's requirements, resulting in an IRB letter of exemption. The study utilized nationwide secondary data sources that did not involve direct participation from human subjects. Likewise, the skilled nursing facilities and the home health agency involved in the study were not required to obtain IRB approval because there was no direct contact with human subjects. However, permission was requested from the participating facilities to obtain their Centers for Medicare & Medicaid Services (CMS) reports for a specific 30-day period.

To safeguard the confidentiality of the participating facilities, the collected data was stored in a secure computer file, accessible only to the researcher through designated security codes. The researcher ensured that all relevant information gathered was securely stored. As the scholar-practitioner leading the project, the researcher should also be aware of potential threats to external validity, such as biases stemming from personal or professional experiences that may relate to the study's topic. Internal validity may be affected by factors such as testing effects, whereas the generalizability of the research outcomes may depend on the study design, data collection methods, and analytical processes. The researcher must remain vigilant about how these biases might influence the study's results without compromising the validity of the project's objectives.

Summary

The exploration of the methodological process surrounding preventable hospital readmissions addresses a critical, increasingly pressing challenge for administrators, policymakers, and the broader U.S. healthcare landscape. To address this issue, the Centers for Medicare & Medicaid Services has initiated efforts to reduce 30-day readmission rates by identifying specific HRRP-targeted conditions. This project promises to yield valuable insights by investigating, comparing, and analyzing readmission rates for these conditions. The study's development utilizes robust data from esteemed sources, including CMS, NRD, Home Health Agency, and three skilled nursing facilities.

Using the quantitative approach, employ statistical tests such as ANOVA and software like SPSS to systematically evaluate the findings, by closely aligning the project’s objectives with the problem statement, purpose, and research questions, the study aims to validate the research approach and effectively address the core queries at hand to contribute positively to the

significant issues and enhance understanding in the field, fostering improved health outcomes for patients across the nation with the HRRP-targeted conditions. Ethical approval for the project was sought from the IRB, and exemption was granted as human subjects were not involved in the study.

Section 3: Findings, Implications, and Recommendations

Key Findings

The key findings of this project indicated mixed results regarding the reasons for 30-day hospital readmissions. According to Glens et al. (2020), very few researchers have examined the reasons for readmissions among the elderly. As noted by Chi et al. (2021) and findings from CMS.gov (2024), several important insights emerged from a nationwide analysis of the Hospital Readmissions Reduction Program (HRRP). This program was established under the Affordable Care Act to incentivize hospitals to reduce preventable readmissions and improve the quality of patient care. However, the results have been somewhat mixed when examining its impact on the targeted conditions across the United States. Specifically, the data indicated that heart failure, pneumonia, and acute myocardial infarction were among the conditions that consistently exhibited the highest rates of readmissions. These findings raise important questions about the HRRP's effectiveness in addressing these prevalent health issues. For instance, heart failure patients often face a complex interplay of factors affecting their recovery, including comorbidities and social determinants of health, which may contribute to higher readmission rates despite efforts to improve care transitions. Moreover, pneumonia and acute myocardial infarction also pose significant challenges for healthcare providers.

The high readmission rates for these conditions suggest that hospitals may be struggling to provide adequate post-discharge support for effective rehabilitation. Notably, patients with disabilities are among the few who are often readmitted due to social factors relating to their disabilities in addition to one or more of the HRRP-targeted conditions. This underscores the need for ongoing research and innovative strategies to better support patients after discharge, ensuring access to essential resources, education, and follow-up care.

While the HRRP has made strides in encouraging hospitals to reduce readmissions and enhance patient care, the mixed results indicate that further efforts are needed to elucidate the underlying factors contributing to high readmission rates, particularly for heart failure, pneumonia, and acute myocardial infarction, if comorbidities and other social factors are associated with these readmission rates. Such insights are crucial for developing future healthcare policies and enhancing patient outcomes within the U.S. healthcare system. Bortolani et al. (2024) link their findings to deteriorating health conditions among the elderly, as well as socioeconomic variables such as cost, age, and gender, which affect readmission rates. They suggest that the Hospital Readmission Reduction Program (HRRP) may not completely address all the underlying factors contributing to these readmissions, a sentiment previously expressed by Murray et al. (2021). Furthermore, research from HealthStream (2021) indicated that nearly one in four (23.5%) patients discharged to skilled nursing facilities (SNF) experience readmission due to comorbidities and various socioeconomic challenges.

Findings by Project Questions

This study explored the impact of 30-day hospital readmission rates concerning factors associated with conditions targeted by the Hospital Readmissions Reduction Program (HRRP). Initially, the research assessed HRRP-targeted conditions nationwide. It then narrowed its focus to the greater Sacramento area to examine how readmission rates differ between patients discharged to Skilled Nursing Facilities (SNFs) and those sent home with home health care services. Numerous studies have addressed 30-day hospital readmissions among patients with HRRP-targeted conditions. However, a lack of comprehensive assessment regarding patients with comorbidities and other influencing factors remains.

The following research questions and corresponding hypotheses have been proposed based on the elements identified in this study.

RQ1. To what extent do 30-day hospital readmissions from Skilled Nursing Facilities and patients discharged to home with home health care services affect hospital readmission rates for patients with HHRP-targeted conditions?

$H1_0$. 30-day hospital readmission rates are directly associated with targeted conditions only and do not impact readmission rates from SNFs.

Ha: 30-day hospital readmission is highly associated with HRRP-targeted conditions and contributes to readmission rates for patients discharged to SNFs and Homes.

The study analyzed data from the CMS, NRD, and HRRQ websites and found that hospital readmission rates vary nationwide for patients with conditions targeted by the Hospital Readmissions Reduction Program (HRRP). Notably, readmission rates were higher among patients with heart failure, pneumonia, and myocardial infarction who were discharged to Skilled Nursing Facilities, and these readmissions account for 1 in 4 cases, and 2/3 were preventable.

The null hypothesis of this study posits that 30-day hospital readmission rates are solely associated with specific targeted conditions and do not account for potential impacts from post-acute care settings, specifically skilled nursing facilities (SNFs). This hypothesis lacks tangible evidence to substantiate its claim, making it impractical to empirically validate. In contrast, a more nuanced hypothesis emerges: that 30-day hospital readmissions are strongly linked not only to HRRP-targeted conditions but also contribute significantly to readmission rates among patients discharged to SNFs.

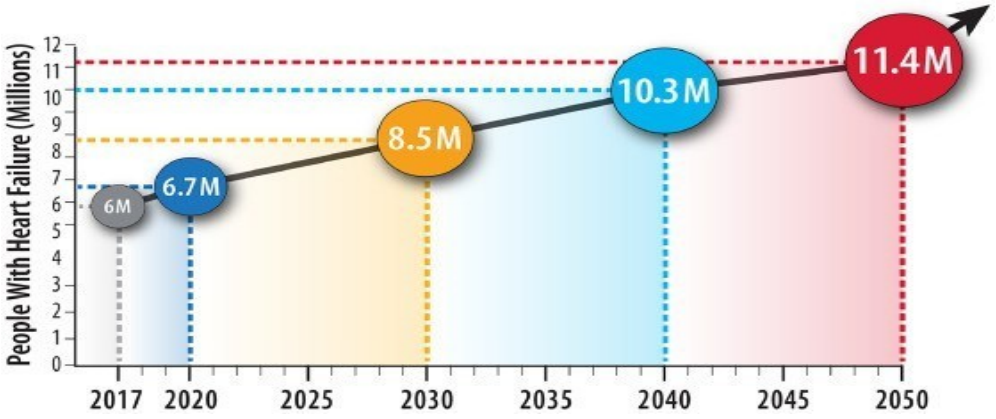
This refined perspective is not only relevant but also directly aligns with the overarching problem statement and the project's purpose. The implications of this hypothesis are profound, underscoring the need to consider a broader range of influencing factors when analyzing readmission rates. Thus, the findings derived from this study will be amenable to rigorous testing, analytical assessments, and validation through comprehensive data analysis. The evidence collected will support the assertion that certain 30-day hospital readmissions are indeed correlated with HRRP-targeted conditions, which, in turn, influence readmission rates among patients transitioning to SNFs.

Among the compelling findings of this investigation is the recognition that the Hospital Readmissions Reduction Program (HRRP) prioritizes conditions known for their high readmission rates. Conditions such as heart failure and pneumonia not only rank among the top in the United States but also highlight the critical areas where healthcare providers can focus their efforts to reduce unnecessary hospitalizations. By identifying these key conditions, the HRRP underscores the importance of targeted interventions and care coordination to ultimately improve patient outcomes. Moreover, the relationship between hospital readmissions and the factors surrounding post-acute care should not be overlooked. It is essential to evaluate how SNF care delivery affects readmission rates, as these facilities play a crucial role in the continuum of care for patients recovering from serious health issues. By exploring this interconnectedness, the study aims to provide insights that could inform policies and clinical practices to reduce readmissions, improve patient outcomes, and ultimately enhance the quality of care delivered within the healthcare system.

The figure below illustrates these findings, along with estimated predictions, through 2050.

Figure 2

People with Heart Disease



In contrast to the higher percentage of readmissions from heart failure, the readmissions with the lowest rates are among patients who undergo hip and knee replacements. According to Jorge et al. (2022), the readmission rates after total hip replacement range from 2.9% to 10.9%, while those after total knee replacement range from 3.5% to 15.9%. According to CMS.gov (2023), the nationwide readmission rate ranges from 11.2% to 22.3%, with an average readmission rate of 14.46%.

The study, focusing on the greater Sacramento area, used CMS.gov data on three skilled nursing facilities from July 1, 2019, to June 6, 2022, and on two home healthcare services. The findings indicated a total of 718 readmissions for heart failure, 237 for acute myocardial infarction, 240 for COPD, 408 for pneumonia, and just 11 for hip and knee surgery. One limitation of this study was the difficulty of obtaining data on HRRP readmission rates for home healthcare services. However, other studies have reported mixed results on readmission rates among patients receiving home health services. In a

study presented by the Partnership for Quality Home Healthcare (2024), the overall readmission rates for patients with HRRP-targeted conditions who were discharged home with home healthcare services were 34%. Another study found that 15.8% of patients discharged to home health services were readmitted within 30 days, compared with 15.7% of those discharged to skilled nursing facilities.

The literature review provides well-supported, validated insights that reinforce the problem statement while addressing the issue of 30-day hospital readmission rates nationwide. However, the conflicting information surrounding home health services and the insufficient data available indicate that additional research is needed to verify the relationship between home health services and readmission rates. Consequently, the implications stem from the findings related to the project questions.

RQ2: To what extent are patients with HRRP-targeted conditions readmitted within 30 days after discharge due to comorbidities and other socioeconomic factors?

H20: 30-day hospital readmission will not significantly affect readmission rates due to comorbidities and other contributing factors.

H2a: 30-day hospital readmission rates are associated with other factors besides the HRRP-targeted condition.

The significance of this research question lies in its capacity to generate findings that can be rigorously tested and substantiated through empirical evidence. By exploring this topic, the research aims to provide a comprehensive understanding that supports not only the initial problem statement but also the overarching purpose statement and the hypothesis concerning hospital readmission rates. Specifically, it posits that 30-day hospital readmission rates may be influenced by factors beyond those identified by the

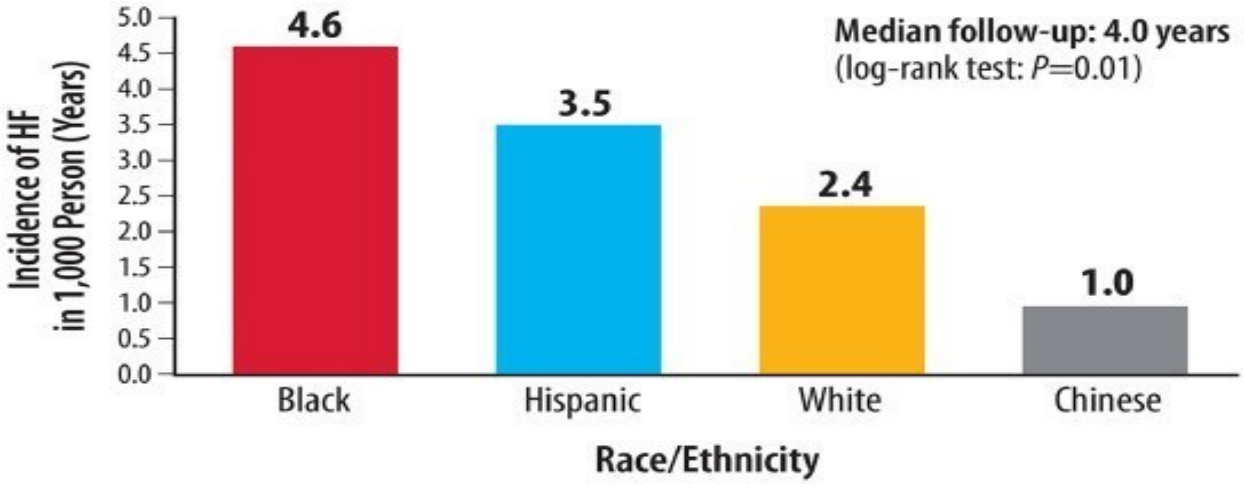
Hospital Readmissions Reduction Program (HRRP) as target conditions. This suggests a more nuanced view of hospital readmissions, recognizing that comorbidities and other external factors may significantly shape these rates. On the contrary, the null hypothesis assumes that 30-day hospital readmission rates are directly linked solely to the targeted conditions established by the HRRP, neglecting the potential impact of other related health issues or risk factors. Investigating this research question can deepen understanding of the complexities surrounding hospital readmissions and inform strategies that address a broader spectrum of factors influencing patient outcomes. Ultimately, highlighting these associations could lead to improved patient care and more effective healthcare policies.

As evident from secondary data sources, the findings for this research question suggest that readmission rates are associated with comorbidities and socioeconomic factors. As noted in the literature review, Stephenson (2019) identified conflicting arguments, suggesting that other factors, such as gender, demographics, socioeconomic status, and insurance issues, may also contribute to the phenomenon. In contrast, Waslh (2021) recognized that comorbidities, which can lead to 30-day hospital readmissions, tend to increase with age. Likewise, Chi-Hua Lu et al. (2021) highlight a contrasting observation between older and younger adults with HRRP-targeted conditions. Meanwhile, Rammohan et al. (2023) suggest that readmission rates may be associated with poor-quality care, early hospital discharge, incorrect diagnosis, ineffective baseline treatment, inadequate discharge planning, and insufficient aftercare. Additionally, Jorge et al. (2022) noted that the length of stay may increase readmissions for patients undergoing total hip arthroplasty, and While these factors may contribute to the

readmission rates, comorbidities such as diabetes, obesity, kidney disease, mental illness, and socioeconomic factors such as disparities in limited access to care due to age, finances, or level of education are some of the common factors in addition to the targeted conditions that can escalate the readmission rates. Among other factors contributing to readmission rates are those associated with race and ethnicity. The figures below illustrate this observation.

Figure 3

Readmissions Based on Race/Ethnicity



Based on findings from the NRD website, patients with Heart failure (HF) have a 20.4 % chance of being readmitted within 30 days due to comorbidities. Sepsis and other infections are also prevalent among patients with diagnoses of HF. Other factors that may not be recognized by patients with HRRP conditions who are readmitted within 30 days include those with disabilities. A study by Djeneba et al. (2020) stated that patients with disabilities and a diagnosis of COPD are 45.9 % more likely to be readmitted due to exacerbation of COPD. Additional findings indicated that HRRP-targeted patients with diabetes have a 14.4 % chance of being readmitted.

Still, the overall readmission rate for patients with comorbidities and HRRP-targeted conditions is higher nationwide.

Interpretation of the Findings Based on the Theoretical Framework

This project employed a theoretical framework grounded in transformational leadership theory. According to Compos (2020), transformational leadership is an approach that fosters significant changes in individuals or systems. This project leveraged this theory to identify necessary changes in the healthcare system, with a specific focus on reducing 30-day hospital readmissions. The goal is to develop a strategy that encourages healthcare leaders to recognize the factors contributing to these readmission rates and to implement practical changes.

The fundamental design of this initiative centered on developing a framework that encompassed the essential components of 30-day hospital readmissions. It aimed to align these components with the theoretical framework to pinpoint gaps and, using transformational leadership theory, address them, proposing practical alternatives to reduce hospital readmissions for conditions highlighted by the Hospital Readmissions Reduction Program (HRRP), particularly those related to comorbidities and other contributing factors.

Recent studies on transformational leadership strategies, such as those by Ystaas et al. (2023), have highlighted that this leadership style is most observed in healthcare. It emphasizes relationship-building and promotes shared values and vision in healthcare leadership. Additionally, Alessa (2021) suggests that transformational leadership is an effective model for organizational leaders seeking to manage significant changes within their systems. On the contrary, although transitional leadership may serve as an

alternative framework that requires training from top individuals to achieve specific organizational goals, as Camilleri (2020) highlights, the transformational leadership framework is better suited to this project because it effectively addresses the need for ongoing change, improvement, and adaptation within the dynamic healthcare environment. In this context, the proposed change involves recognizing additional factors that contribute to 30-day hospital readmissions beyond those targeted by HRRP.

Incorporating Validity and Reliability

The problem and purpose statement aligned with the reasons for conducting the study, particularly in examining the appropriateness of internal validity for this quantitative research. Internal validity should help answer the research question: To what extent do 30-day readmissions from Skilled Nursing Facilities (SNF) and Home Health Care services impact hospital readmission rates? The study's appropriateness with respect to internal validity is supported, as the findings demonstrate that the research question was answered. As a result, the problem statement, purpose statement, and research questions were aligned with quantitative measures that involve numerical data to analyze the collected data.

External validity can be assessed by determining whether the findings can be generalized to other real-world contexts. Conversely, the study's reliability is essential to supporting these findings. In this case, the tools and measurements were carefully designed to effectively meet the study's objectives. Since this project uses secondary data, reliability can be assessed by reviewing data collected from various sources, such as the CMS website and the NRD database. To further validate the study's reliability, G*Power was used to conduct a power analysis of the collected data, which helped determine the

minimum sample size required to detect a statistically significant effect at the specified alpha level.

Evaluation of the Outcomes

To fully comprehend the study's outcome, it is essential to examine several critical aspects that contribute to its overall significance. First, it is necessary to examine the relationship between the findings and the research question, as this understanding is crucial for accurately interpreting the results. Additionally, by investigating the specific problems, the study aims to provide context and underscores the research's importance within the broader field. Furthermore, examining the rationale behind conducting this study is vital as it sheds light on the motivations that prompted the researcher to undertake this project. This rationale often identifies gaps in the existing literature, thereby enhancing understanding of the topic. In this regard, the literature review was pivotal in contextualizing the findings and clarifying their contribution to the field's ongoing discourse. It is also imperative to consider any potential limitations of the study, as these can significantly influence the interpretation of the results. By acknowledging these limitations, we can better assess the reliability and generalizability of the findings. A comprehensive understanding of these elements was established through a comparative analysis that evaluated the findings against expected outcomes. This process involves critically analyzing the data to see how it aligns or diverges from preconceived hypotheses.

A final analogy discussed the long-term implications and benefits of these findings for both healthcare organizations and patients. By examining how the study’s outcomes can be applied in real-world settings, a deeper understanding of the research's

transformative potential was gained. This discussion will provide valuable insights for stakeholders, helping inform future practices and policies that ultimately aim to improve healthcare delivery and patient outcomes.

Significance to the Research Question

The research question we are investigating is: To what extent do patients with conditions targeted by the Hospital Readmissions Reduction Program (HRRP) who are discharged to skilled nursing facilities (SNFs) and home health services influence 30-day hospital readmission rates in the United States? As previously stated, the problem to be addressed is the rapid rise in readmission rates across the United States. The study aimed to identify, investigate, compare, and analyze 30-day hospital readmission rates among patients diagnosed with any of the HRRP-targeted conditions to determine whether comorbidities and other socioeconomic factors are associated with readmissions. The study, based on evidence-based data, revealed important insights into the relationship between socioeconomic factors and hospital readmission rates. A correlation was identified between specific conditions targeted by the Hospital Readmissions Reduction Program (HRRP) and several other factors. Notably, readmission rates were associated with early hospital discharge, inadequate discharge planning, and poor-quality care.

Limitations of the Study

One limitation of the study's findings was the lack of information from the home health agency in the greater Sacramento area. While the agency reported its readmission rates to the Centers for Medicare & Medicaid Services (CMS), it did not provide the reasons for those readmissions, leaving diagnoses undiagnosed. Additionally, one skilled nursing facility reported its readmission rate but failed to specify the reasons. Additional

limitations indicate a lack of information acknowledging that comorbidities can directly exacerbate the HRRP-targeted conditions. The idea that readmission rates are influenced by factors beyond the conditions targeted by the Hospital Readmissions Reduction Program (HRRP) could have long-term implications for the healthcare industry, particularly if these rates are affected by comorbidities or socioeconomic factors. For example, a patient with end-stage renal failure was admitted to the hospital for pneumonia, discharged to a skilled nursing facility, missed their hemodialysis treatment after discharge, and was readmitted to the same hospital within seven days due to fluid overload.

Should the hospital be penalized by CMS for this readmission, considering it is related to a condition not included on the HRRP's targeted condition list? Scenarios like these could affect the healthcare industry, the economy, healthcare institutions, and patients' financial well-being. This situation highlights a gap in the evaluation criteria set by the Centers for Medicare & Medicaid Services (CMS), particularly concerning the penalties imposed on hospitals for readmission rates that are not directly related to the 30-day readmission target established by the Hospital Readmissions Reduction Program (HRRP). Due to the wide range of findings and the categorization of the data, this study cannot simplify the gender-related results, as the collected data did not specify patients' genders. However, the focus is on the variables that measure the study's outcomes, particularly the percentage of socioeconomic factors that affect readmission rates.

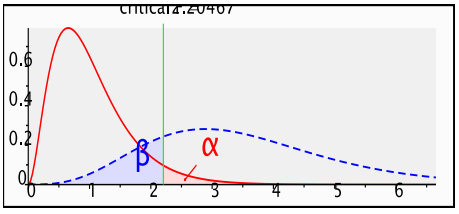
Quantitative Analysis of the Findings

Conducting this project relied heavily on secondary data sources to gather comprehensive and relevant information. The data collection process involved carefully selecting various healthcare facilities, and the respective sample sizes, designated by source, were as follows: the Centers for Medicare & Medicaid Services (CMS) contributed 60 cases (n = 60), the Agency for Healthcare Research and Quality (AHRQ) provided 68 cases (n = 68), the Nationwide Readmissions Database (NRD) brought in another 60 cases (n = 60), the Skilled Nursing Facility (SNF) data accounted for 92 cases (n = 92), and finally, Home Health records added 30 cases (n = 30).

This aggregated data was used to conduct a thorough analysis of various health conditions prevalent across the United States and in the Greater Sacramento area. The final dataset resulted in the following significant observations: there were 719 documented cases of heart failure, 237 cases of acute myocardial infarction (MI), 192 cases related to coronary artery bypass grafting (CABG), 240 cases of chronic obstructive pulmonary disease (COPD), 408 instances of pneumonia, and a total of 11 cases for hip or knee surgeries. Additionally, home health services accounted for 30 cases, illustrating a diverse range of healthcare needs within the community.

Figure 4

The G Configuration*



To ensure robustness and validity of the findings, G*Power is widely recognized as a leading tool for statistical power analysis in

various research fields. This software is highly regarded for its ability to conduct power analyses and help researchers determine optimal sample sizes for their studies. In this case, G*Power was instrumental in determining the appropriate sample size for the analysis, accounting for data from a wide range of sources, including previous studies, pilot studies, and theoretical considerations.

The rigorous application of G*Power enabled a systematic determination of the desired sample size of 92, which was particularly crucial for achieving reliable, statistically significant results. By carefully calculating the effect size, alpha level, and desired power, the analysis ensured that the sample was sufficiently large to detect meaningful differences while minimizing the risk of Type I and Type II errors.

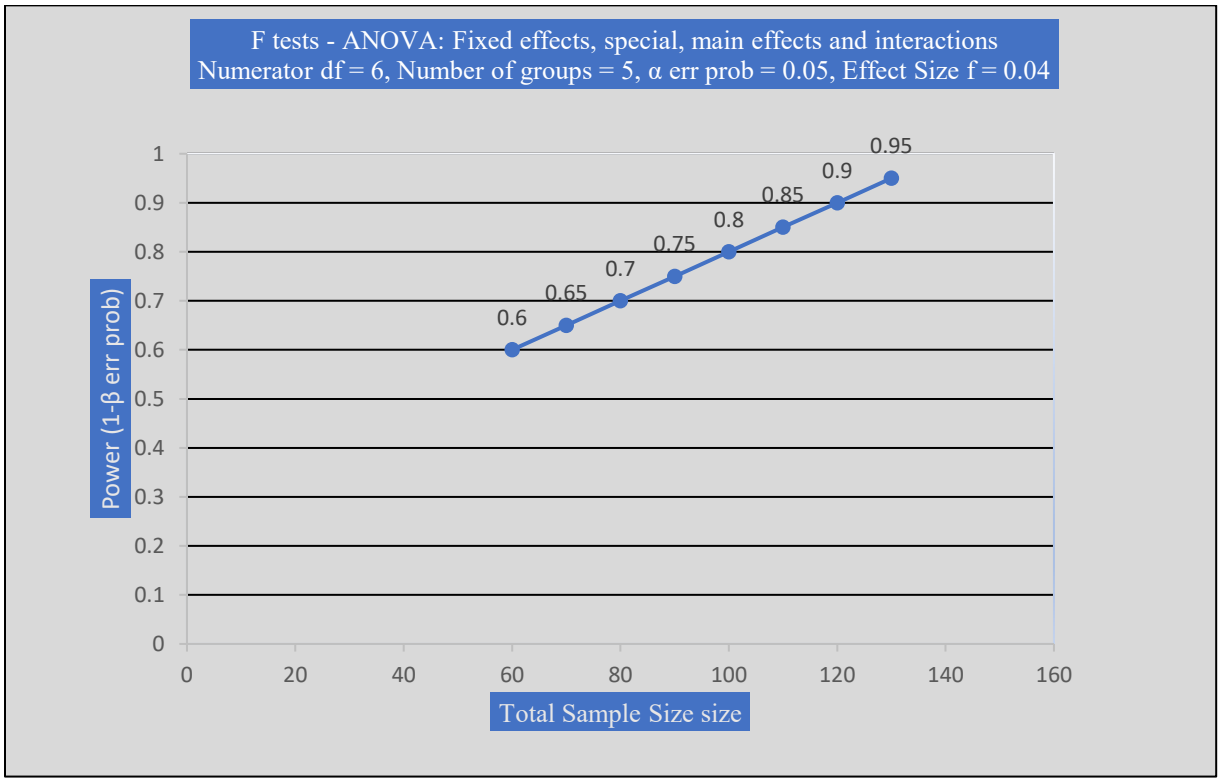
Additionally, the use of G*Power provided transparency into the research process by allowing documentation of assumptions made during sample size determination. This transparency is essential to the reproducibility of research findings, a cornerstone of scientific inquiry. Furthermore, understanding the implications of sample size has broader consequences, as it can significantly affect the interpretation of the study's results and conclusions.

The graphs accompanying this analysis illustrate the methodology G*Power uses to determine the required sample size. These visual representations not only enhance understanding of the statistical processes but also highlight the importance of properly determining sample sizes in healthcare research to obtain valid conclusions. The analysis of these findings will lead to connections between the collected data and their implications for healthcare delivery and policy. The diverse health conditions represented

in the data highlight the necessity for targeted interventions and resource allocation to enhance patient outcomes across different healthcare sectors.

Figure 5

Analysis of Variance (ANOVA)



The graphs above were generated using G*Power calculations to determine the recommended sample size for this research. According to the tutorial provided by the Kent State University Tutorial Library (SPSS, 2017), the illustrations indicate the necessary sample size for the study. The suggested total sample size is 92, with a degree of freedom (df) of 87. In this context, the df in the numerator is calculated as g - 1, where g represents the number of groups. The df in the denominator is calculated as (n-g), where n is the total sample size across all groups. The calculations for this study's ANOVA statistical test yielded a numerator (df) of 6,

corresponding to 5 groups. The alpha error probability (α err prob) is set at 0.05, and the effect size is determined to be f = 0.04.

The table below presents the independent variables used in the study, based on the collected data, with emphasis on nationwide information. Secondary sources are also included.

Table 2

Independent Variables (HRRP Targeted-conditions)

Independent Variables (HRRP-Targeted Conditions)	Percentage of Nationwide Readmissions
Acute Myocardial Infarction Anil et al. (2024). Burden and Predictors of Thirty-Day Readmissions in Patients with NSTEMI: A Retrospective Analysis of the 2020 NRD Database. *Coronary Artery Disease,* 36(1), p. 45-50. Doi:10.1079/MCA.0000000000001419.	17 %
COPD Buhr et al. (2020). Readmission Rates for Chronic Obstructive Pulmonary Disease Under the Hospital Readmission Reduction Program: An Interrupted Time Series Analysis. *J Glen Internal Med,* 35(12), p. 3581-3590. Doi:10.1007/s11606-020-05958-0	19 %

Pneumonia Choi et al. (2025). Predicting 30-day Readmissions in Pneumonia Patients Using Machine Learning and Residual Greeness. *Digital Health*. 3(11) Doi:10.1177/20552076251325990	18.5 %
Coronary Artery Bypass Graph (CABG) Hirji, et al. (2021). Thirty-Day Nonindex Readmissions and Clinical Outcomes After Cardiac Surgery. *Ann Thoracic Surgery,* 110(2), p. 484-491. Doi: 10.1016/j.athoracicsur.2019.11.042	12.8 %
Elective Primary Total Hip Arthroplasty (THA) and Total Knee Arthroplasty (TKA) CMS.gov (2025).	3.5 %
Heart Failure Jha, et al. (2022). Thirty-day Readmission Patients with Heart Failure with Preserved Ejection Fraction: Insights from the Nationwide Readmission Database. *World J Cardiology* 14(9), p. 473-482. Doi: 10.4330/wjc.v14.i9.473.PMID:36187428.	21 %

Calculations of a Population Sample Standard Deviation Based on the Number of HRRP Readmissions

Formula: $s = (\Sigma (x_i - \bar{x})^2 / (n - 1)/n\text{-}1$. Given the formula $s = (\Sigma (x_i - \bar{x})^2 / (n - 1)/n\text{-}1$, where **s** is the sample standard deviation, **xi** represents each value in the data set, **x̄** is the sample mean, and **n** is the number of values in the population, the following derivatives emerged.

Figure 6

Data for Calculating a Sample Standard Deviation

Value	$X - \bar{x}$	$(X - \bar{x})^2$
719	417.833	174,588.0
237	-64.1667	4,119.4
192	-109.1667	11,915.4
240	-61.1667	11,915.4
408	106.8333	11,414.0
11	-290.1667	84,196.7

Data Calculation

719,237,192,240,408,11

2. Mean

$\bar{x}=18076=301.1667$

3. Squared deviations

Sum of squared deviations:

289,967.9

4. Sample variance

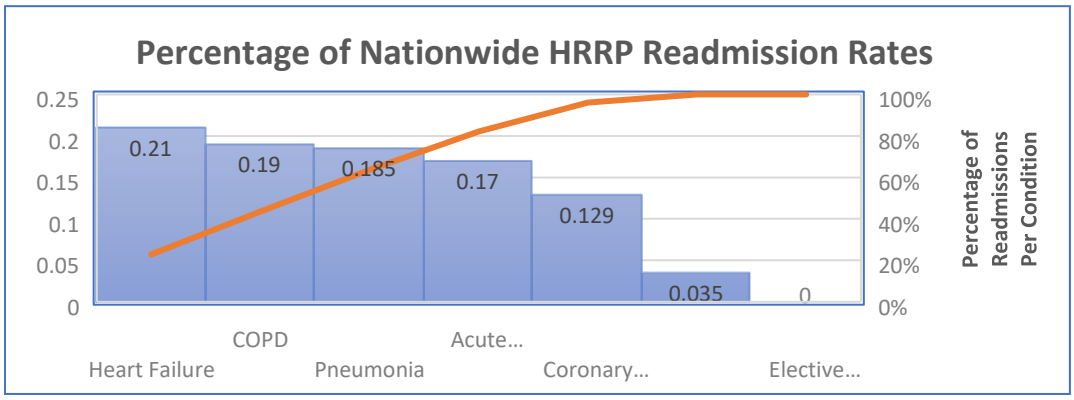
$s2=289,967.96-1=57,993.58$

5. Sample standard deviation

$s=57,993.58\approx240.8$

Figure 7

Percentage of Nationwide HRRP Readmission Rates



Source: Excel/SPSS Software Version 29.0

Table 3

Dependent Variables (Comorbidities)

Cardiovascular Conditions	Congestive Heart Failure (CHF), Arrhythmias, Ischemic Heart Disease
Respiratory Conditions	Respiratory failure
Renal Kidney Conditions	Chronic Kidney Disease (CKD), End-stage renal disease (ESRD), Acute Renal Failure (ARF)
Diabetes	
Liver Disease	
Cancer	
Psychiatric Disorders/other medical conditions	Chronic anxiety, dementia, depression Other medical conditions that may contribute to readmission rates.

Table 4

Control Variables (Socioeconomic Factors)

Gender/Ethnicity
Disposition Location/Disability
Payor Type
Age
Access to Care

Analysis of Variables Based on Findings Using a Comparative Analysis Approach

This study examined the relationship between patients discharged to skilled nursing facilities or home with home health services and the 30-day hospital readmission trends across the United States, specifically for patients with any of the HRRP-targeted conditions, to determine whether comorbidities and other factors, such as socioeconomic status, influence these readmission rates. Based on the charts and graphs above, we identified the independent variables as the HRRP-targeted conditions, the dependent variables as the comorbidities, and the socioeconomic factors as the control variables.

According to Bhandari (2021), the dependent variables may be influenced by the independent variables. The comorbidities discussed in this study directly contribute to changes in the independent variables, the HRRP-targeted conditions. This is evident from the observed association between readmission rates and comorbidities among patients

with the targeted conditions who were readmitted for other health factors. The control variables, which include socioeconomic factors, can also influence the independent variables. This may result in changes to the independent variables, specifically the HRRP-targeted conditions. This scenario establishes a cause-and-effect relationship in which alterations in one area can lead to changes in another. Such changes can have lasting impacts on both patients and the organization. To address potential long-term effects on patients and the organization, it is advisable to implement an action plan focused on continuous improvement.

This research focused on independent variables, specifically the conditions outlined by the Hospital Readmission Reduction Program (HRRP). The objective was to evaluate whether the dependent variables (comorbidities) affect these HRRP-targeted conditions. The result of this examination seeks to confirm or refute the hypothesis that comorbidities influence 30-day hospital readmissions. The results support the hypothesis that comorbidities, along with sociodemographic factors, significantly affect hospital readmissions within 30 days.

To clarify the relationship between these variables, the HRRP-targeted conditions, as independent variables, represent diagnosed health conditions that remain constant. In contrast, although the dependent variables (comorbidities) are not directly linked to the HRRP-targeted conditions, they can influence changes in these independent variables. Furthermore, the study asserts that control variables, such as socioeconomic factors, establish a causal relationship between the independent and dependent variables by recognizing that changes in the dependent variables directly affect the independent

variable. Consequently, the findings demonstrate a reliable outcome with strong internal validity.

Implications of the Study

The implications of 30-day hospital readmissions in the United States can significantly affect a hospital's reputation and its overall operational viability. High readmission rates, particularly for conditions targeted by the Hospital Readmission Reduction Program (HRRP), may lead to substantial financial penalties. These penalties are not merely numerical; they have real-world consequences that can influence the hospital's ability to attract and retain patients. When hospitals are perceived as poor performers in patient care, it can lead to fewer patient referrals and diminished trust from the community, ultimately harming the hospital's standing and competitiveness in an increasingly saturated healthcare market. Moreover, the ramifications of elevated readmission rates extend beyond just the hospital's immediate financial interests. Research from the National Institutes of Health (NIH) has shown that the negative consequences of high readmission rates extend beyond the individual patient to the broader healthcare ecosystem. Hospitals grappling with these challenges not only risk their financial health but also their reputation as trusted healthcare providers. This can lead to a further decline in patient volume, creating a vicious cycle that strains hospital resources. Lachar et al. (2021) highlight several issues that result in long-term financial strain on hospitals, driven by excess readmission rates.

Families of patients who experience readmissions face emotional and financial burdens that can be profound and lasting. The stress associated with a loved one's health complications can be overwhelming, often leading to anxiety and depression. Financially,

additional hospital visits, follow-up treatments, and prolonged recovery periods can lead to increased out-of-pocket expenses, placing significant financial strain on these families. This burden can further erode trust in the healthcare system, as families feel the financial and emotional impact of readmissions. Furthermore, the healthcare system as a whole incurs costs associated with these readmissions, which can strain public health resources and increase the burden on healthcare providers.

Efforts to identify effective strategies for reducing readmission rates have become critical. Initiatives such as enhanced care coordination, patient education, and robust follow-up care programs are being developed to address the root causes of readmissions, demonstrating a commitment to patient-centered care that not only reduces costs but also improves patient outcomes. Therefore, the implications of 30-day hospital readmissions encompass a wide array of issues that impact not only the institutions themselves but also the individuals and families they serve. Addressing these challenges is vital for maintaining the integrity of healthcare systems and ensuring that patients receive the highest quality of care possible.

Action Plan

Based on the findings, recommendations for implementing an action plan to collaborate with key stakeholders, including healthcare administrators and policymakers. This plan should focus on optimizing organizational capacity and incorporate a comprehensive patient education program that addresses all aspects of a patient's healthcare needs, rather than solely concentrating on the conditions targeted by the HRRP. Furthermore, the plan should consider social determinants of health, socioeconomic factors, and necessary accommodations to facilitate effective care planning.

Healthcare administrators and policymakers are encouraged to develop proactive strategies to address rising hospital readmission rates. The criteria established by the Centers for Medicare & Medicaid Services (CMS) should be reassessed to include other factors contributing to patient readmissions, particularly for those with HRRP-targeted conditions. These factors should encompass comorbidities and socioeconomic issues that can lead to increased readmissions.

Recommendations for Future Research

The study examined the HRRP-targeted conditions set by CMS to identify associations among increased 30-day hospital readmissions, comorbidities, and socioeconomic status. After a thorough literature review and data analysis, the findings strongly support the notion that these factors significantly influence readmission rates. Additionally, the study compared patients with HRRP-targeted conditions who were discharged to skilled nursing facilities with those who were sent home with home health services. The results revealed a wide range of implications across these groups, illuminating avenues for improving patient care and outcomes and informing future research. Based on the findings, data from the AHRQ and CMS websites indicate that among patients with the conditions covered by the Hospital Readmissions Reduction Program (HRRP), those with heart failure have the highest readmission rates, followed by patients with COPD, pneumonia, and acute myocardial infarction. While Jha et al. (2022) assert that readmission for heart failure is highest among the targeted groups, some of these readmissions are unavoidable due to the severity of the illness. Further study is highly recommended to analyze how cause-and-effect relationships among variables influence readmission rates, an underlying relationship not included in the CMS evaluation criteria.

While the study showed that the data examined contrasted the variables included, the analysis of readmission rates for patients discharged to skilled nursing facilities and home health care indicated that patients discharged to skilled nursing facilities were more likely to be readmitted within 30 days. However, the analysis did not account for comorbidities and socioeconomic factors. Therefore, future studies are recommended to investigate further factors that impact readmission rates. Specifically, future research should focus on patients with HRRP conditions who have secondary diagnoses, as well as the impact of socioeconomic factors. The healthcare industry can benefit from additional studies on 30-day hospital readmissions if accommodations and adjustments are made to incorporate an assessment of HRRP-targeted conditions, thereby evaluating the potential for readmissions attributable to the cause-and-effect relationship. This evaluation can help healthcare organizations identify potential causes of readmissions using a cause-and-effect framework, aligning with the evaluation criteria established by the Centers for Medicare & Medicaid Services (CMS).

Recommendations for Challenges Encountered During the Project and in Future Studies

One question this study raises is whether the CMS evaluation criteria should be revised to account for comorbidities or socioeconomic factors that may contribute to readmissions among patients with conditions targeted by the Hospital Readmissions Reduction Program (HRRP). If these factors are considered, should hospitals be penalized if a secondary condition contributes to a patient's readmission? Additionally, should hospitals face penalties if a 96-year-old patient with heart failure is readmitted within 30 days due to an exacerbation of COPD? These concerns underscore the need to thoroughly examine the CMS evaluation criteria for HRRP-targeted conditions. A study by Djeneba et al. (2020) found that patients with disabilities and a diagnosis

of COPD are 45.9% more likely to be readmitted due to exacerbation of their condition. Furthermore, the study found that patients with diabetes targeted by HRRP have a 14.4% chance of being readmitted. These findings necessitate further research on this topic.

Some drawbacks encountered in this study include the lack of information reported to CMS by skilled nursing facilities and home health care services. Data collected from the SNF reported readmission rates as percentages but did not specify individual diagnoses. Additionally, there was no consensus to adjust the CMS evaluation criteria to include social factors. This notion underscores the need for further research on social aspects, as few studies have addressed these issues.

Conclusion

External validity is a critical aspect of research that can be assessed by examining whether the results are transferable and applicable to a range of real-world situations beyond the study's specific context. This entails evaluating whether the findings hold across different populations, settings, and conditions, thereby enhancing the generalizability of the research outcomes. Conversely, the study's reliability is equally crucial, as it supports and underpins the validity of the findings. In this research, the tools and measurements were meticulously designed to align with the study's specific objectives, ensuring that they accurately capture the intended data.

Since this project involves analyzing secondary data, the reliability can be further evaluated by examining data collection from reputable sources, such as the Centers for Medicare & Medicaid Services (CMS) website or the National Readmission Database (NRD). This multichannel approach to sourcing data not only strengthens the integrity of

the research findings but also provides a comprehensive perspective that reinforces the conclusions drawn from the analysis.

The outcomes of this power analysis, along with the associated graphs, provided a visual representation of the relationship between sample size and statistical significance. These illustrations effectively demonstrated the study's findings' importance in confirming its objectives, thereby providing a robust foundation for the conclusions drawn. By thoughtfully integrating these elements—external validity, reliability assessments, and power analysis—the research presents a comprehensive and credible investigation into the topic at hand. Overall, this approach not only enhances the study's legitimacy but also provides valuable insights into the broader field of research, ultimately confirming the hypothesis that comorbidities and other social factors contribute to readmission rates among patients with HRRP-targeted conditions.

Key Takeaway Points from the Study

The study examined, compared, and analyzed the impact of 30-day hospital readmissions, with a focus on HRRP-targeted conditions. Analysis of the results revealed that meaningful strides can be made in shaping CMS reimbursement strategies by modifying penalties based on a thorough evaluation of criteria that account for social factors and the correlations among comorbidities and HRRP-targeted conditions in their effects on admission rates. While several studies have examined 30-day readmissions, there is insufficient consensus on CMS criteria for addressing social determinants of health and on the link between comorbidities and HRRP-targeted conditions.

This study examined the purpose of the Hospital Readmissions Reduction Program (HRRP), established by CMS, with a focus on the relationship between rising

30-day hospital readmission rates and factors such as comorbidities and socioeconomic conditions. The analysis treated HRRP-targeted conditions as independent variables, treated comorbidities as dependent variables, and controlled for social factors. A direct correlation was identified between comorbidities and socioeconomic factors, contributing to higher readmission rates. The study's objectives and outcomes were justified and yielded valuable insights for healthcare organizations. These findings underscore the need for further research to refine CMS evaluation criteria regarding comorbidities and social factors associated with readmissions.

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Appendix A

List of Tables

Table 1

SMART GOALS	
Specific	Specific goals for this project include collecting and analyzing pertinent, evidence-based data to support the HRRP's objectives for targeted conditions. The goal is to examine patient records for 30 days post-discharge from the hospital to determine whether patients were readmitted and whether comorbidities or socioeconomic factors correlate with readmission.
Measurable	The data collection was measurable because it was quantitative and yielded quantifiable data for analysis. The period allocated for data collection was also quantifiable, thereby facilitating the determination of the measurable outcomes of the data collected.
Achievable	Given the specific objectives of this research, the goals were achievable due to the extensive secondary data on the subject. The additional speculative observation required a comparison and examination of available tangible data to determine whether comorbidities and other factors affect readmission rates. Therefore, the goals are achievable.
Relevant	The project's relevance was justified by evaluating connections to the overall project context, supported by evidence and data; the availability of sources; potential biases; and the verification of facts from multiple reliable sources.
Timebound	Given the project's timeline, the final presentation was justified by the sequence of events: the project progressed from basic to advanced, culminating in the presentation. The time frame was critical for each phase of the project.

Table 2

Independent Variables (HRRP Targeted-conditions)

Independent Variables (HRRP-Targeted Conditions)	Percentage of Nationwide Readmissions
Acute Myocardial Infarction Anil et al. (2024). Burden and Predictors of Thirty-Day Readmissions in Patients with NSTEMI: A Retrospective Analysis of the 2020 NRD Database. *Coronary Artery Disease,* 36(1), p. 45-50. Doi:10.1079/MCA.0000000000001419.	17 %
COPD Buhr et al. (2020). Readmission Rates for Chronic Obstructive Pulmonary Disease Under the Hospital Readmission Reduction Program: An Interrupted Time Series Analysis. *J Glen Internal Med,* 35(12), p. 3581-3590. Doi:10.1007/s11606-020-05958-0	19 %
Pneumonia Choi et al. (2025). Predicting 30-day Readmissions in Pneumonia Patients Using Machine Learning and Residual Greeness. *Digital Health*. 3(11) Doi:10.1177/20552076251325990	18.5 %

Coronary Artery Bypass Graph (CABG) Hirji, et al. (2021). Thirty-Day Nonindex Readmissions and Clinical Outcomes After Cardiac Surgery. *Ann Thoracic Surgery,* 110(2), p. 484-491. Doi: 10.1016/j.athoracicsur.2019.11.042	12.8 %
Elective Primary Total Hip Arthroplasty (THA) and Total Knee Arthroplasty (TKA) CMS.gov (2025).	3.5 %
Heart Failure Jha, et al. (2022). Thirty-day Readmission Patients with Heart Failure with Preserved Ejection Fraction: Insights from the Nationwide Readmission Database. *World J Cardiology* 14(9), p. 473-482. Doi: 10.4330/wjc.v14.i9.473.PMID:36187428.	21 %

Table 3

Dependent Variables (Comorbidities)

Cardiovascular Conditions	Congestive Heart Failure (CHF), Arrhythmias, Ischemic Heart Disease
Respiratory Conditions	Respiratory failure
Renal Kidney Conditions	Chronic Kidney Disease (CKD), End-stage renal disease (ESRD), Acute Renal Failure (ARF)
Diabetes	
Liver Disease	
Cancer	

Psychiatric Disorders/other medical conditions	Chronic anxiety, dementia, depression Other medical conditions that may contribute to readmission rates.

Table 4

Control Variables (Socioeconomic Factors)

Gender/Ethnicity
Disposition Location/Disability
Payor Type
Age
Access to Care

Appendix B

List of Figures

Figure 1: GDP Percentage of Healthcare Expenditure

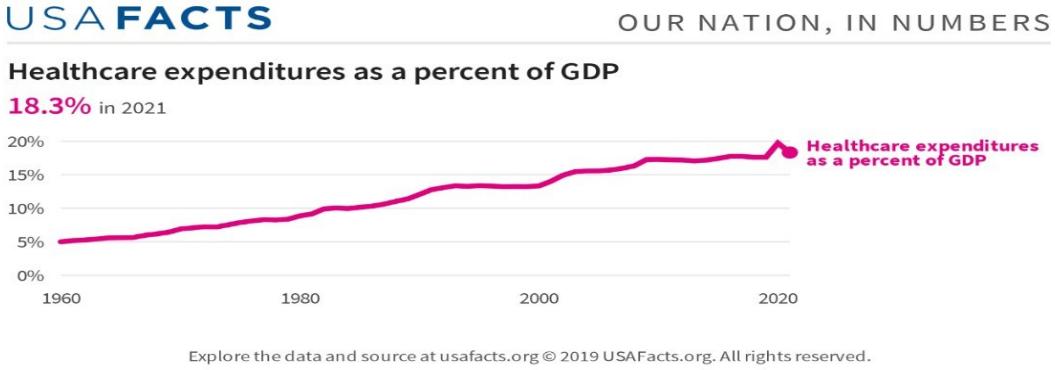

Figure 2: People with Heart Disease

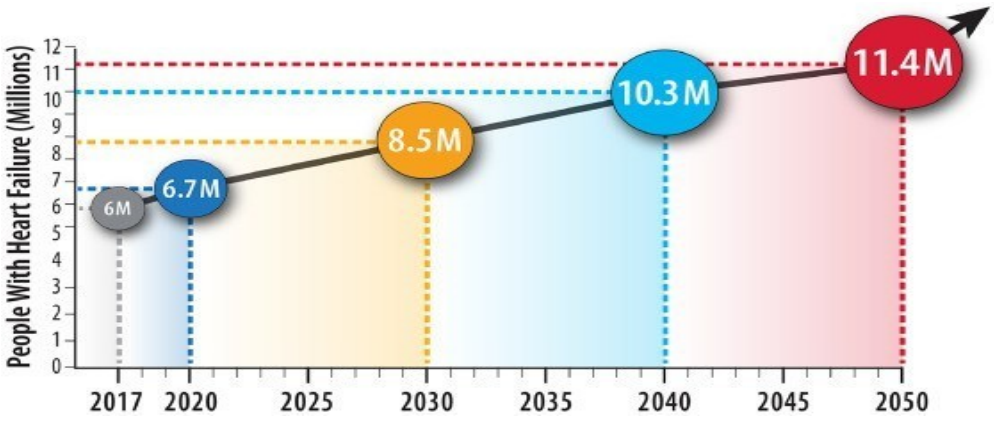

Figure 3: Readmissions Based on Race and Ethnicity

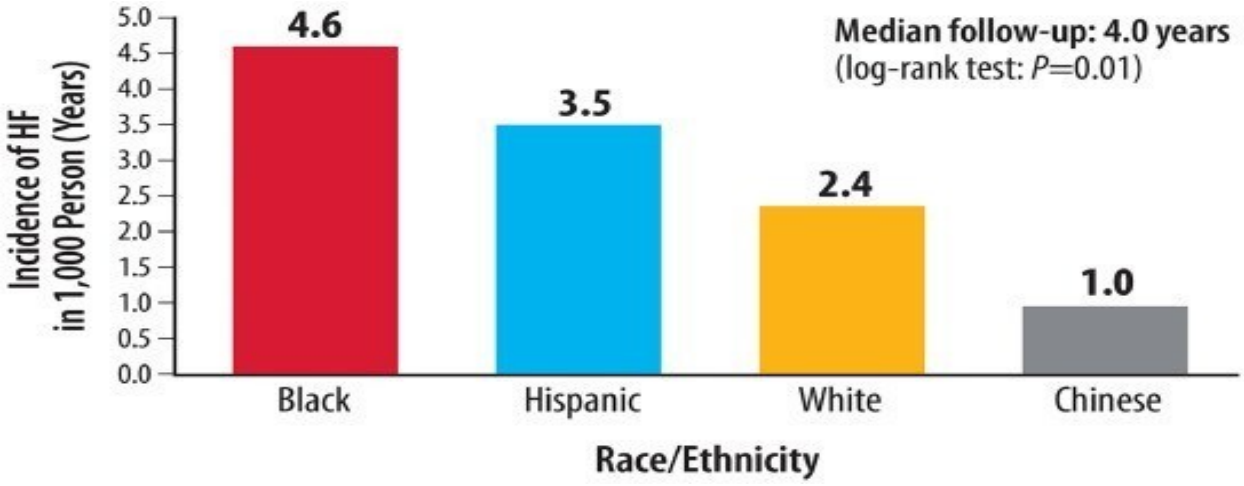

Figure 4: The G* Configuration

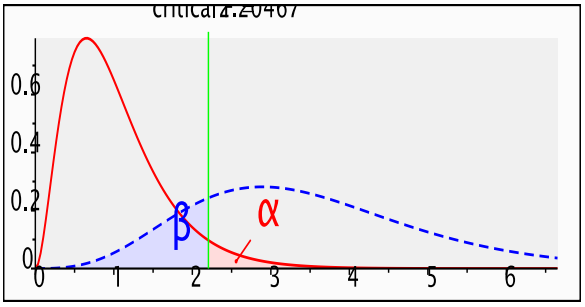

Figure 5: Analysis of Variance (ANOVA)

Figure 6: Data for Calculating a Sample Standard Deviation

Value	$X - \bar{x}$	$(X - \bar{x})^2$
719	417.833	174,588.0
237	-64.1667	4,119.4
192	-109.1667	11,915.4
240	-61.1667	11,915.4

408	106.8333	11,414.0
11	-290.1667	84,196.7

Figure 7: Percentage of Nationwide Hospital Readmissions