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Cross-Functional Team Collaboration for Enhancing Timely and Effective Emergency Department Care

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Walden University

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Walden University

College of Management & Human Potential

This is to certify that the doctoral study by

Osaigbovo Osemwegie

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2023

Abstract

Cross-Functional Team Collaboration for Enhancing Timely and Effective Emergency

Department Care

by

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MS, Saint Elizabeth University, 2019

MBA, University of Benin, 2013

BA, Ambrose Alli University, 2005

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Healthcare Administration

Walden University

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Abstract

Many US hospitals report overcrowding in the emergency department (ED) with increased ambulance diversion. Operating at overcapacity risks staff members' ability to provide timely and effective emergency care to patients, exposing them to poor health outcomes. The purpose of this quantitative study was to evaluate whether a correlation exists between cross-functional team collaboration and timely and effective ED care for patients who left 548 national hospital EDs before being seen between 2020 and 2021. The study's independent variable was cross-functional team collaboration, and the dependent variables were Centers for Medicare and Medicaid Services (CMS) Quality Measure scores: left before being seen and average median time patients spent in the ED before departing from the visit. The D'amour theory, which focused on the effectiveness of interprofessional collaboration among multidisciplinary healthcare teams, served as the study's theoretical framework. Utilizing a random sample of 548 hospitals from the CMS database, a linear regression analysis resulted in a statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring CMS quality measure scores for the percentage of patients and average (median) time patients spent in the ED before leaving the visit. The study contributes to positive social change by creating significant awareness amongst emergency department administrators and stakeholders to support policies that enhance multidisciplinary team collaboration for improved patient healthcare outcomes.

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Dedication

I dedicate this dissertation to my family, educational peers, tutors, and friends who supported and believed in me throughout my academic pursuits. You all proved that education is the best tool to influence the world positively. I dedicate this paper to every student trying to make meaningful use of education, especially for the betterment of human society, despite their economic, social, or ethnic background. The sweetest fruit is preserved for those who cross boundaries and those who look beyond. Finally, I dedicate this dissertation to populations and communities facing barriers and challenges but always trying their best to navigate through them.

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Section 1: Foundation of the Study and Literature Review

Emergency departments (EDs) represent a critical aspect of healthcare systems in the United States and globally. In the United States, emergency medicine serves as the only specialty with a federal mandate to provide care to patients seeking treatment (Hummel and Rick, 2019). The ED provides timely access to care for patients who may be seriously ill or injured. Care is available twenty-four hr. a day, and patients can access care regardless of their ability to pay for the services (Edmond et al., 2019). The ED is designed to provide immediate medical care to patients with or without life-threatening health problems.

Lapierre et al. (2019) asserted that effective communication among teams appears to facilitate collaboration and teamwork. In contrast, poor communication among team members can interfere with timely, effective, and coordinated hospital emergency department care (Matzke et al., 2021; Opper et al., 2019). The ED consists of a diverse work team from different functional areas of health care working together to provide timely and effective care to all patients who come to the ED. The highly trained staff include emergency physicians led by the director of emergency medicine; a nurse manager (or charge nurse) who leads a team of highly trained nurses; allied health professionals, such as radiographers, physiotherapists, or social workers; and administrative and support staff. Effective communication techniques are used to avoid misunderstandings by ensuring that what is communicated is properly understood and acted upon among teams.

In this study, I evaluated whether a correlation exists between cross-functional team collaboration and timely and effective ED care based on the Centers for Medicare and Medicaid Services (CMS) quality measures (QM) score for the percentage of patients who left the ED before being seen. In addition, I evaluated the impact, if any, that cross-functional team collaboration has on timely and effective emergency care when measuring the QM score average (median) time patients spent in the ED before leaving the visit. The study's dependent and independent variables were timely and effective ED care and cross-functional team collaboration, respectively. I analyzed 2020–2021 data from 548 national hospital EDs across the United States.

Background of the Study

Over 50% of U.S. hospitals in 2018 reported overcrowding in the ED with an increase in ambulance diversion, leading them to operate at or over capacity (Hummel and Rick, 2019). Such overcrowding compromises staff members' ability to provide timely and effective emergency care to patients who need it, exposing patients to deteriorating and poor health outcomes. The CMS (2021) reported that patients who leave the ED without being seen may be seriously ill, putting themselves at higher risk for poor health outcomes. In addition, long stays in the ED may result in delayed treatment, increased suffering for patients who wait, and unpleasant treatment environments (CMS, 2021). Researchers have examined factors related to delays in arrival to health facilities or delays in treatment within EDs and related negative outcomes. Beltrán Guzmán et al. (2019), for instance, aimed to fill the gap in knowledge

by analyzing the factors associated with patient delay in arrival and in treatment within the same settings.

Beltrán Guzmán et al. (2019) conducted a cross-sectional study based on routine data collected from three MSF-supported hospitals in Afghanistan, Haiti, and Sierra Leone. A multinomial logistic regression theory (MLR) was used to analyze the association between age, sex, hospital, and diagnosis (trauma and non-trauma) with patient delays. The study findings showed that treatment delay could be due to limited resources, lack of team collaboration, and medical staff's perception of severity for no trauma patients. The CDC (2020) identified that medical care delay or avoidance might increase morbidity and mortality risk associated with treatable and preventable health conditions and might contribute to reported excess deaths. The CDC also reported that as of June 30, 2020, an estimated 41% of U.S. adults reported having delayed or avoided medical care during the pandemic because of concerns about COVID-19, including 12% who reported having avoided urgent or emergency care. Communities, health care systems, and public health agencies may be able to address these concerns by working together to ensure timely and effective ED care.

Research suggests that multidisciplinary teamwork and collaboration improves patient outcomes and access to health care. In addition, Karam et al. (2017) supported those health care workers who serve as part of a team are more effective and have higher job satisfaction than those who do not. Busari et al. (2017) conducted a study to determine the impact of interprofessional collaboration on the quality of care. Busari et al. assessed nurses' and physicians' perceptions of patient care in a Caribbean setting. The

researchers conducted focus group sessions consisting of nurses, interns, and medical specialists. Using an ethnographic approach, the researchers paid attention to existing communication, risk evaluation, and recommendations for improvement. Data derived from the focus group sessions were analyzed using the thematic synthesis method with development of descriptive and analytic themes. The study findings indicated that interprofessional communication and collaboration among teams seems to promote suitable, timely, and effective patient care.

Communication and coordinated teamwork are critical in a demand area such as the emergency department (ED), to prevent medical errors and ensure high quality patient care delivery. Matzke et al. (2021) evaluated the effect of Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) training, an evidence-based communication training toolkit, on staff perception of teamwork, collaboration, and communication in an academic Level I Emergency and Trauma Center. They found that effective communication and coordinated teamwork are critical in high-stakes clinical practice settings, such as the ED, to prevent delays and ensure timely and effective care delivery. In addition, building a resilient team inclusive of strong leadership and communication skills is essential to being able to withstand the challenging demands of the ED, and may assist with increased levels of efficiency and timely ED care (see also Grover et al., 2017).

The gap that I addressed in this study concerned how effective cross-functional team collaboration and communication can reduce patient delays and long wait times in the ED. This research is pertinent because CMS (2021) data show that patients who leave

the ED without being seen may be seriously ill, putting themselves at higher risk for poor health outcomes, and that long patient stays in the ED may result in treatment delays, increased suffering, and unpleasant treatment environments.

Problem Statement

The focus of this study was on delays and long wait times patients experience in EDs. Patients who spend prolonged periods in the ED before receiving treatment or who leave before being seen may be faced with increased risks of serious illnesses, injuries, and unpleasant treatment environments (CMS, 2021). Hummel and Rick (2019) found that more than half of all U.S. hospital EDs were overcrowded in 2018, with one third reporting an increase in ambulance diversion. Most (90%) respondents reported frequently operating at or over capacity, limiting their ability to effectively provide timely and effective emergency care to those who need it. Overcrowded EDs can expose patients to increased wait times and delays as well as lead to financial losses to hospitals (Hummel and Rick, 2019).

Health care delivery is inherently interdependent, requiring a cross-functional team approach. No one medical provider or employee can assure that a patient receives the highest standard of care in a timely fashion, nor can they ensure that the patient receives all the necessary medical care during an emergency (Alsabri et al., 2022). However, despite elevated levels of interdependence and collaboration among cross-functional teams, most health care organizations have underinvested in structured and evidence-based practices for managing and coordinating care (Rosen et al., 2018). Providing timely and effective high-quality care requires collaboration among

multidisciplinary teams. Collaboration among nurses, physicians, and other team members is essential for patient safety and ED efficiencies (Vieira Andrade et al., 2019). The ED renders medical services to patients who often have undifferentiated diagnoses, where team members are unfamiliar with the patient's past medical and social history. Hence, collaboration to determine timely diagnoses and care plans is critical.

Soleimani et al. (2019) highlighted concerns about the need for training and evaluation of teamwork and collaboration in providing care to patients. Their data showed that training, organizational support, and promotion of teamwork in health care settings led to better performance and results, thereby reducing clinical errors and length of stay in the ED. Matzke et al. (2021) identified that ineffective communication in a demanding environment, such a Level I emergency and trauma center, can be detrimental to patient outcomes and teamwork. Effective communication and a coordinated cross-functional team approach are invaluable in ED operations to enhance timely, effective, and high-quality patient care delivery.

Delays and waiting times at various hospitals vary widely, depending on the number of patients seen, staffing levels, efficiency, admittance procedures, or the availability of inpatient beds. According to the CMS (2021), lower numbers are better when measuring (a) the percentage of patients who left the ED before being seen and (b) the average (median) time patients spent in the ED before leaving the visit. In this study, I analyzed provider data on timely and effective care from across the United States. The sampled data set included provider-level data for measures of emergency department delivery care from 2020 to 2021.

Purpose of the Study

The purpose of this quantitative study was to evaluate whether a correlation exists between cross-functional team collaboration and timely and effective ED care for patients who left 548 national hospital EDs before being seen between 2020 and 2021. I compared QM score for these patients to that of all individuals who signed into an ED nationally during this period. In addition, I evaluated the impact, if any, that cross-functional team collaboration has on timely and effective ED when measuring the QM score average (median) time that patients, between 2020 and 2021, spent in 548 national hospital EDs before leaving. The study's dependent and independent variables were timely and effective ED care and cross-functional team collaboration, respectively. The dependent variable (DV) of the study, timely and effective, shows how often or how quickly hospitals provide safe and effective care to patients (CMS, 2021). Quality measures used by CMS to measure quality of care by hospital ED include left before being seen, average (median) time patients spent in the ED before leaving from the visit, ED volume, and head CT results.

Timely and effective care in hospital emergency departments is essential for good patient outcomes (CMS, 2021). Delays and longer wait times before receiving care in the ED can expose patients to increased health risks, discomfort, serious illnesses, or injuries. The World Health Organization (WHO, n.d.) highlighted the importance of examining care provided to patients in terms of quality, timeliness, and effectiveness. The WHO identified that between 5.7 and 8.4 million deaths are attributed to inadequate quality care each year in low- and middle-income countries (LMICs), which represents up to 15% of

overall deaths in these countries. In addition, 60% of deaths in LMICs result from conditions requiring health care and occur due to poor quality care. The WHO also noted that in high-income countries, 1 in 10 patients is harmed while receiving hospital care, and 7 in every 100 hospitalized patients can expect to acquire a health care-associated infection resulting from lack of communication and uncoordinated teamwork.

Providing timely and effective healthcare services requires good governance, teamwork, and collaboration. Pantaleon (2019) argued that the measurement and reporting of outcomes promotes and improves best practices, which helps to enhance outcomes. Hospital EDs' provider-level data for timely and effective care must be measured and monitored to spur improvement (Pantaleon, 2019). Hospital ED managers can use these data to drive improvements and lower (a) the percentage of patients who leave the ED before being seen and (b) the average (median) time patients spend in the ED before leaving from the visit. CMS (2021) noted that lower numbers for both measures are positive indicators for ED performance.

The importance of providing timely and effective medical care to patients is emphasized by the CDC's (2021) assertion that delayed or avoided medical care may increase morbidity and mortality associated with both chronic and acute health conditions. In this study, I addressed the significant role of cross-functional team collaboration and coordination among physicians, nurses, and other support groups in the ED in providing timely and effective care to patients. This study may also provide information to health care organization leaders to better understand the importance of

cross-functional team collaboration on timely and effective ED care, thereby contributing to positive social change.

Research Questions and Hypotheses

RQ1: Is there a correlation between cross-functional team collaboration and timely and effective ED care when measuring the QM score for the percentage of patients who left 548 national regional hospital EDs before being seen by an ED staff member against the percentage of all individuals who signed into an emergency department between 2020-2021?

H_01 : There is no statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM scores for the percentage of patients who left the ED before being seen.

H_{a1} : There is a statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM score for the percentage of patients who left the ED before being seen.

RQ2: What impact does cross-functional team collaboration have on timely and effective emergency care when measuring the QM score average (median) time that patients spent in the ED from the time they arrived before leaving for the visit between 2020-2021?

H_01 : There is no statistical association between cross-functional team collaboration on timely and effective emergencies when measuring QM score for average (median) time patients spent in the ED before leaving the visit.

H_{a1}: There is a statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM score for the average (median) time patients spent in the ED before leaving the visit.

Theoretical Framework

The theoretical framework for this study consisted of D'amour et al.'s (2009) theory, which focuses on the effectiveness of interprofessional collaboration among multidisciplinary health care teams. This theory shows how cross-functional health care team collaboration plays a key factor in initiatives designed to increase the effectiveness of health services offered to patients. D'amour et al. asserted that a lack of communication between cross-functional health care teams might result in unnecessary patient delays and wait times. The D'amour theoretical framework suggests that improved communication, collaboration, and coordination enhances patient care and outcomes. The theory identifies the various definitions and concepts associated with collaboration and the different theoretical frameworks of collaboration. Specific concepts in defining collaboration include sharing, partnership, interdependency, and power. Furthermore, D'amour et al. asserted that collaboration is an evolving, dynamic, transforming, interactive, and interpersonal process, and is a critical component in providing timely care and ensuring patient safety.

The D'amour theory applied to this study because it provides insight into how effective and improved team collaboration can reduce or prevent patient delays and wait times before receiving care at hospital emergency departments. In a related study, Rosen et al. (2018) presented data that connected effective health care team collaboration to the

quality and safety of health care delivery. The D'amour concept is important to this study because it establishes a framework that connects interprofessional (i.e., cross-functional teams) collaboration to the enhancement of timely, safe, and effective ED care. The concept of teamwork differs among multidisciplinary teams in health care, varying in focus from risk management to concerns such as patient safety, patient delays, long wait times, ineffective care, and poor work environment (Milton et al., 2022).

The logical connections between the D'Amour et al. framework and the nature of my study are made clear in Grover et al.'s (2017) finding that building a resilient team inclusive of strong leadership and communication skills is essential to withstanding the challenging demands of ED care. The D'Amour theory focuses on how teamwork may result in increased levels of efficiency in the ED, as measured by the QM percentage of patients who left the ED before being seen and the average (median) time patients spent in the ED before leaving. Milton et al. (2022) reinforced that the ED is a high-risk environment that requires cross-functional health care teams to work together. Ineffective communication and lack of coordination among team members can contribute to adverse effects in both the ED and the general health care system.

In the United States, about 85% of the population has at least one health care need yearly, and at least one quarter of this population experience four to nine encounters annually (Rosen et al., 2018). When a patient visits a health care facility to seek care, providers and other team members must work as a team and collaborate to provide the required care. Rosen et al. (2018) agreed that a lack of collaboration and ineffective care coordination among cross-functional health care teams can lead to poor health outcomes.

The relationship between teamwork and patient outcomes, effective behaviors, and performance measurement strategies is critical in shaping teamwork and collaboration in medical practice (Rosen et al., 2018). The D'amour theory describes three criteria to assess the strength of the collaborative frameworks:

- reliance on empirical data collected by the investigators.
- an explicit strategy for reviewing literature.
- reliance on an explicit theory

Health care leaders adopt the D'amour style approach to focus on developing theoretical frameworks that can guide administrators and practitioners in their implementation of collaborative practice strategies (Vieira Andrade et al., 2019). Because of the complexity of patient health care needs, Grover et al. (2017) noted that providers and other medical professionals typically work interdependently to provide the needed care to patients. Therefore, it is critical to gain a better understanding of the impact of cross-functional team collaboration on timely and effective patient care. Team collaboration in health care is associated with the quality and safety of care delivery systems (D'amour et al., 2009). The D'amour framework was an excellent fit for this study because it facilitates a comprehensive approach to developing strong theoretical and discipline-based frameworks that allow cross-functional health care teams to provide timely and effective care. Cross-functional teams in health care require the implementation of a culture of collaboration rather than competition. Table 1 illustrates this facet in providing an overview of different teamwork competency frameworks for health care professionals.

Nature of the Study

This was a quantitative cross-sectional descriptive study. I examined how cross-functional team collaboration enhances timely and effective ED care. The use of a quantitative method allowed for comparison of the independent and dependent variables of the study and determination of how the independent variable may have an impact on the dependent variable (see Albright and Winston, 2015). Frankfort-Nachmias and Leon-Guerrero (2020) asserted that use of a multiple regression method allows researchers to investigate how an independent variable affects a dependent variable. A Pearson correlation can be helpful in measuring the correlative relationship between one variable and another (Albright and Winston, 2015). This coefficient was relevant to my study because I measured the cause-effect relationship between the independent variable (cross-functional team collaboration) and the dependent variable (timely and effective ED care).

To address the RQs in this quantitative study, I analyzed secondary data from the CMS. Milton et al. (2022) identified cross-functional teamwork as a crucial component of ensuring effective and timely patient care. Therefore, I sought to provide health care administrators and leaders with a deeper understanding of how teamwork and collaboration can affect timely and effective care in the ED. Leaders of health systems and managers of EDs can also use quantitative methods to measure timely and effective care in the ED and the degree of collaboration achieved among teams and to identify areas for team improvement and collaboration.

Literature Search Strategy

The publications that I examine in this review include scholarly peer-reviewed journal articles published within the last five years. I systematically evaluated the search results, which made the search more productive. Identifying a well-thought-out approach for finding for relevant information related to a research study is critical to a study's validity (Libguides, 2019). I used Walden University's Thoreau multi data base search tool to access databases including MEDLINE/PubMed, CINAHL, APA PsychInfo, SocIndex, ScienceDirect, Academic Search, Education Source, ERIC, IEEE Xplore, Emerald Insight, and Directory of Open Access Journals; I searched these databases to find scholarly articles that were related to the study. The research process consisted of using a combination key terms and phrases to search the various databases. These included *team**, *communication*, *accident*, *emergency*, *emergency care* or *emergency department*, *emergency room* or *emergency service*, and *TX* (timely or effective).

Literature Review Related to Key Variables and/or Concepts

Historical Background of the Emergency Department

The ED serves as a unique platform for connecting outpatient and inpatient care within health care systems. The CMS (n.d.) described the ED as a typical environment for providing acute care services to the patient. The CMS reported that there were nearly 139 million emergency room visits in the United States in 2017. In 1986, the United States Congress enacted the Emergency Medical Treatment and Labor Act (EMTALA) as part of the Consolidated Omnibus Budget Reconciliation Act (COBRA). Under EMTALA, everyone who visits a hospital-based ED for care must receive it, the CMS

added. Under EMTALA, hospital based EDs are required to provide a screening exam and stabilizing treatment (including hospitalization, if needed) to all patients regardless of their ability to pay for such services. This act makes the ED a resource for everyone, including persons who may not have any other option or access to medical care.

Providing safe and quality health care to populations is a priority for world leaders. The Department of Health and Human Services (HHS), and the Centers for Medicare & Medicaid Services (CMS) use quality measures to quantify healthcare processes, outcomes, patient perceptions, and organizational structure and/or systems that are associated with the ability to provide timely and effective healthcare (CMS, 2021).

In the United States, the provision of quality health care is a key objective for the president, the Department of Health, and Human Services (HHS), and the CMS (CMS, 2021). For this reason, CMS leaders created the CAHPS Emergency Department Survey (ED CAHPS) to assess patients' experience in the ED. The ED CAHPS survey addresses the need for a unique environment across hospital EDs (CMS, 2021). The Joint Commission (2022) emphasized that reducing patient delays and long wait times in the ED can improve access to treatment and increase the quality of care. Quality measures serve as a tool to measure or assess processes, outcomes, patient perceptions, and systems related to the provision of safe, timely, and effective care to patients in the ED (CMS, n.d.).

The ED serves as an essential source of admissions for hospitals and provides services to all who seek ED care, regardless of their ability to pay under the EMTALA act. Lulla and Svancarek, (2021) reiterated that hospitals and EMS systems that do not

comply with EMTALA mandates may face stiff penalties imposed by federal agencies, including the Office of the Inspector General (OIG) and CMS. Penalties can range from monetary fines and exclusion from Medicare reimbursement to federal prosecution (Lulla and Svancarek, (2021). In the United States, the ED serves as a large and critical component of health care systems, where care is provided to many patients. HHS (2021) highlighted the potential overuse or inappropriate use of EDs for nonemergent care, leading to overcrowding, patient delays, and longer wait times.

Many patients seek care in the ED because they lack insurance coverage and access to health care services. Additional data reported by HHS (2021) show that there were over 143 million ED visits in the United States in 2018, and of these, more than 20 million ended in admission to the hospital where the ED visit took place, while over 123 million visits ended in a release. HHS found that in 2017, over 18% of adults in the United States reported having visited an ED at least once in the previous year. Data reported by HHS show that patients aged 18–44 years and 45–64 were primarily responsible for ED visits from 1997 to 2007, a time frame which also saw an increase in the number of adults with Medicaid. In 2011, one in five people reported visiting the ED at least once during the previous year (HHS, 2021).

Despite the rising trend regarding the appropriate use and role of EDs in the health care system, timely and effective care in hospital EDs remains a critical focus for achieving improved patient outcomes. The CMS (2021) indicated that delays and long wait times experienced in the ED can reduce the quality of care and increase risks and discomfort for patients with serious illnesses or injuries. Factors that account for patient

delays and long wait times at hospital EDs include the number of patients seen, staffing levels, efficiency, admitting procedures, and the availability of inpatient beds (CMS, 2021). There are several potential reasons for concern regarding the overuse of EDs. The potential for patient overcrowding in the ED can have several adverse consequences, such as longer wait times, and diminished health outcomes. HHS (2021) argued that increasing patient crowding and long wait times in the ED are not just attributable to a large number of patients besieging the ED, but to how well cross-functional team coordination and communication exist among ED teams.

Cross-functional team collaboration (multidisciplinary) involves bringing employees with diverse talents from different departments together to achieve a common goal. Alsabri et al. (2022) acknowledged that teamwork and effective communication improves patient safety culture in the ED. Cross-functional teams adapt themselves by interweaving functional responsibilities. This team of health care professionals often includes physicians, nurses, lab technicians, IT personnel, dietitians, social workers, and administrators who work together to provide timely and coordinated care to patients. Health care teams harness their expertise and skills to jointly assess, plan, and manage care.

Studies Related to the Constructs of Interest

Several researchers have examined the impact of effective communication, teamwork, and coordination among health care teams on the improvement of patient outcomes. Health care operations involve numerous interfaces among multiple health care practitioners (i.e., they are cross-functional) with varying levels of skill set and

occupational training. When health care teams are not communicating effectively, the patient may experience delays and long wait times in receiving care. Ineffective communication and care coordination among health care teams can be a public health concern (Rosen et al., 2018). Collaboration among the cross-functional team of clinicians and administrative staff is critical to providing timely and effective care to patients. A study conducted by Opper et al. (2019) showed that poor communication between health team members can interfere with timely and coordinated care. Opper et al. focused on improving teamwork, communication, and collaboration among health care teams for timely hospital discharge, improved patient experience, and ED visits post discharge. They also noted that ineffective communication among health care teams can result in patient safety concerns and is a primary cause of patient delays and long wait times.

Other researchers have also focused on identifying informal interprofessional team-based communication within hospital EDs. Naccarella et al. (2019) concluded that to facilitate effective team communication, the ED environment must be conducive to team members working collaboratively and near patients without compromising safety and timely care. The researchers used two conceptual frameworks—organizational ecology and the environmental comfort theory—to examine the role of the physical environment in improving informal team communication, interactions, and associated learning patterns in EDs. Researchers have also proposed theories to identify patterns and processes of interprofessional communication that are affecting the quality of ED change-of-shift handovers. Redley et al. (2017) asserted that poor cross-functional team communication can affect the quality of change-of-shift handovers in EDs and pose risks

to patient safety, delays, and wait times. They also presented that effective team collaboration and communication organizational routines are limited by discipline-specific processes and workflow of ED.

The impact of poor cross-functional team collaboration and communication in healthcare, specifically in the ED, has been extensively addressed by researchers. Researchers have assessed the risks that can be experienced in healthcare practices due to poor communication and ineffective collaboration among healthcare teams. Grover et al. (2017) describes that assembling a collaborative team inclusive of effective leadership is essential to maintaining the ability to tackle the challenging demands of the ED. The Grover et al. study (2017) presented that individual professional work and skill sets cannot provide the required care to patients, hence effective communication and collaboration among diverse teams are critical to providing safe and timely care to patients. Some researchers (Grover et al, 2017) have also identified that team collaboration is essential for the ED's operational efficiency, and for providing timely care to patients. Grover et al. (2017) found that ED nurses perceived teamwork as a positive construct but lacked non-technical skills such as leadership, communication, and situational awareness during periods of increased demand—which diminished their capacity to offer effective patient care (see Figure 1).

The Grover et al. (2017) study showed that ED nurses described their experiences with effective teamwork, as well as barriers associated with teamwork in the ED. The research transcripts revealed that teamwork worked well in some instances but broke down in other instances. The researchers reported that during periods of perceived

successful teamwork functioning, participants who engaged in collaboration with other team members worked towards a mutual goal to provide effective patient care, with communication being central to this process (Grover et al., 2017).

The relationship between Interprofessional Communication and Team Task Performance was addressed by Kyeong et al. (2020), who stated that ineffective communication and collaboration led to 60% of reported patient safety concerns in 2013. Such safety concerns can be debilitating to both patients and healthcare providers. Kyeong et al. (2020) noted that common difficulties in effective communication include inconsistency in team membership, different communication approaches, distractions, fatigue, lack of confidence, and misinterpretation of cues. The researchers further suggested that promoting team training and communication techniques can improve teamwork and collaboration among healthcare teams. The researchers utilized descriptive statistics to assess team task performance and SBAR-R communication (Kyeong et al., 2020). The mean team task performance score was 13.80 (SD 2.59) and the median was 14. The study categorized the individual teams into teams with respect to their team task performance. Scores ≥ 14 of 19 were categorized as *better* ($n = 26$) and those < 14 were categorized as *worse* ($n = 23$). The Mann-Whitney nonparametric U test was used to compare the SBAR-R communication between the *better* and *worse* teams. Because of the ordinal nature of the scores, the nonparametric Kendall rank correlation was used to examine the correlations between team task performance and SBAR-R communication. The data were analyzed using IBM SPSS Statistics (IBM Corp., Armonk, NY, USA).

Methodologies of Studies Consistent with Scope of Research

The methods used in the literature I reviewed included quantitative, qualitative, and mixed-method designs. A research study methodology is usually classified as qualitative, quantitative, or involving both qualitative and quantitative methods also known as mixed methods (Harwell, n.d.). Identifying a study's research design is critical because it conveys the study's data, which can differ for qualitative, quantitative, and mixed methods. Harwell (n.d.) describes qualitative methods as studies that collect and analyze qualitative data, while quantitative studies are, among other things, studies that collect and analyze quantitative data.

Research designs may show the entire research process, from conceptualizing a problem to the literature review, research questions, methods, and conclusions. Harwell (n.d.) agreed that research questions form the bases for the choice of research designs and potential alterations across groups of people or systems, to analyze trends or events. According to Harwell (n.d.), quantitative research methods are mostly predictive in nature to maximize potential objectivity, replicability, and generalizability of findings. The quantitative secondary data sets used in this study were from the Center for Medicare and Medicaid Services (CMS). The data sets reported by CMS show Timely and Effective Care measures provider data. This data set includes provider-level data for measures of hospital emergency department care from 2020- 2021. The CMS houses secondary data on timely and effective ED care and provides access to secondary data submitted by hospitals to CMS using the Clinical Data Warehouse through the CMS Abstraction and Reporting Tool (CART) or vendors.

Quantitative studies were more often quantifiable in analyzing data than primary surveys. Researchers can identify patterns, predict trends, and test the causal relationship in generalizing data. For example, a study conducted by Bray and Kennedy (2021) used qualitative and quantitative data on improving timely sepsis care in a rural emergency department, using quantitative data from patient surveys consisting of a score of four points of teach-back knowledge on sepsis. Bray and Kennedy (2021) noted that the study analyzed data using run charts every two weeks to identify trends and shifts in data. Results from the run chart were used to measure the effectiveness of the interventions and opportunities for change. Timely care forms the basis for providing quality care by evaluating effective health care and actual care received (Bray and Kennedy, 2021).

Parush et al. (2017) similarly determined that effective teamwork in the ED is crucial to patient safety and identified that a significant aspect of teamwork is Team Situational Awareness (TSA). TSA is enhanced by ensuring that every team member is aware of their roles and responsibilities within the team (Parush et al., 2017). They observed that adverse events such as patient delays, long wait times, and medical errors frequently occur due to communication breakdowns and poor coordination among team members. They then interviewed 18 resuscitation team members about their roles and patterns of communication and observed 30 video recordings of simulated resuscitation training of residents. They evaluated whether the situation display could lead to higher scores on the Clinical Teamwork Scale (CTS), improved scores on a context-specific Situational Awareness Global Assessment Technique (SAGAT) tool, and team communication patterns that reflect teamwork and SA. The experimental design

consisted of two independent within-participant variables including with and without the situation display and three resuscitation scenarios. They use the Clinical Team Scale (CTS) to measure teamwork effectiveness and communication skills.

Concerning the researcher's approach to data analysis, Bray and Kennedy (2021) applied patient survey data consisting of a possible score of four points of teach-back knowledge on sepsis, chart audits for the percentage of patients receiving appropriate care, and Likert scale surveys on team engagement. They also analyzed data using run charts to identify trends and shifts in data to evaluate effectiveness and opportunities for change. Parush et al. (2017) applied a two-way ANOVA to measure the interaction between the study conditions and the scenarios. They followed up with a simple effects test to determine the Mean. Grover et al. (2017) used a descriptive, exploratory approach methodology from phenomenology and symbolic interactionism. They used a major metropolitan hospital ED for the study, where structured audio recorded interviews were conducted and transcribed verbatim. Transcripts were analyzed using thematic analysis. They found teamwork as a positive and effective construct in four key areas: resuscitation, simulation training, patient outcomes, and staff satisfaction.

Ways Researchers Have Approached the Problem

Timely and effective care in hospital emergency departments (EDs) is essential for effective patient care and outcomes. The Center for Medicare and Medicaid Services (CMS, 2021) described how patient delays and long wait times before receiving care in the ED can reduce the quality of care and increase risks and discomfort for patients with serious illnesses or injuries. The CMS identified that waiting times at different hospital

EDs can vary significantly, depending on the number of patients seen, staffing levels, efficiency, admitting procedures, and the availability of inpatient beds. This study focuses on how cross-functional team collaboration and coordination can enhance timely and effective care in hospital emergency departments (EDs). Vieira Andrade et al. (2019) applied the pragmatic functionalist paradigm to try to understand society according to its exchanges and social relations between individuals and groups. The concept of the pragmatic functionalist “dimension of prominence” and its importance to the communication process primarily is focused on interaction, function, influence, the circular theory of communication, and relationships (Vieira Andrade et al., 2019). The study further asserted that effective communication and coordination are required in the ED, considering the cross-functional mix of professionals that make up the teams on duty.

Lack of collaboration among cross-functional ED and trauma team professionals can create a significant gap in providing timely and effective care to patients (Lapierre, et al., 2019). This study used the conceptual framework for interprofessional teamwork (IPT) to better understand IPT from the perspective of health professionals in emergency departments (EDs). Lapierre et al. (2019) identified that communication is an essential component of teamwork, noting that closed-loop communication facilitates teamwork. Poor coordination and communication among ED teams can lead to patient delays and medical errors, which adversely affect the patients. Effective communication among cross-functional healthcare teams strengthens collaboration and promotes continuity and clarity within the patient care team. When patients visit the ED for medical care,

collaboration among a multidisciplinary group of clinicians, and administrative staff is required to provide care to the patient.

Rosen et al. (2018) described how ineffective care coordination and collaboration among healthcare teams are a public health issue. The study examined teams and teamwork in healthcare delivery settings to understand teamwork and collaboration among teams. Rosen et al. (2018) evaluated evidence relating teamwork to multilevel outcomes, effective teamwork behaviors, competencies, team performance measurement strategies, and the critical role context plays in shaping teamwork and collaboration in practice. Many researchers have identified poor team coordination and communication failures as causes of medical errors and patient delays. Rosen et al. (2018) reported that preventable patient harm in the U.S. may exceed 250,000 deaths per year because of hospital-acquired infections, patient falls, diagnostic errors, and surgical errors among others. When healthcare teams do not work as a team, the lack of coordination can lead to high-risk interactions that can affect the patient's status and plan of care, leading to delays in treatment (Rosen et al., 2018). The study also reported that miscommunication and lack of coordination among healthcare teams are associated with approximately 28% of surgical adverse events—such as poor communication of medication name, dose, route of delivery. Lack of collaboration between physicians, pharmacists, nurses, and patients can also lead to delays and long waiting times among other issues.

Providing health care delivery is an increasingly interdependent and complex practice. No one individual can assure a patient receives the highest standard of care, nor can he or she protect the patient from all potential harms stemming from increasingly

complex and specialized therapies. However, despite high levels of interdependence, healthcare has underinvested in structured and evidence-based practices for managing teams and coordinating care (Kohn et al., 1999). Health care can be used as an arena to advance the science of teams, like the innovative and foundational work on military teams or aviation crews in past decades. Health care provides a unique setting for team researchers to develop and evaluate theories of team effectiveness. There is a wide variety of team types and configurations across the healthcare industry. Teamwork in health care spans the spectrum, from tightly coupled collocated surgical or trauma teams to virtual teams of consultants contributing to a diagnosis, to loosely coupled teams working to manage chronic care, and even translational science teams working to integrate basic science researchers and community members. Care delivery involves a multitude of professional roles, configured in different structures.

Rationale for Selection of the Study Variables

Emergency departments (EDs) provide a significant source of medical care in the United States. ED utilization reflects the greater health needs of the host or surrounding communities and may serve as the only readily available care platform for residents who cannot obtain care elsewhere. In this sense, providing timely, safe, and effective care is critical to the success of hospital EDs. Vieira Andrade et al. (2019) observed the problematic and fragile communication gaps among ED teams which can lead to patient delays and long wait times. The ED is considered a 24-hour Enhanced Care Unit (ECU), which requires effective communication among team members and local managers for enhanced patient services. Ineffective communication among ED teams can pose severe

and negative consequences to patients and ED operations. Vieira Andrade et al. (2019) identified that ineffective communication contributes to more than 70% of errors in health care, where communication interruption and/or lack of teamwork were the major causes.

Researchers suggest that patients who leave a hospital ED without being seen by a physician represent a greater quality and safety concern and are identified as an ED performance metric. Li et al. (2019) examined the characteristics of the patient population that leaves the ED without being seen at hospitals in the United States. This study examined electronic medical record data from EDs at two academic hospitals with a shared patient population which analyzed all the patients who left before being seen. The timeframe covered the almost four-year period between July 2012 and March 2016. Demographic and clinical variables, including patient characteristics, chief complaint, acuity, and evidence of ongoing medical care, were assessed. During the study period, 2.4% of patients presenting to the EDs included in the study left without being seen. The study findings show that patients who leave the ED without being seen may reflect poor and timely access to clinic-based care rather than intrinsic systemic issues within the ED. Patients who leave the ED before being examined by a physician represent a significant lapse in ED care quality. Mataloni et al. (2018) identified that patients who experienced delays and increased wait times in the ED have a greater risk of ED re-admission compared to treated and discharged patients.

Seamless communication and coordination are critical in high-stakes clinical practice settings to address the issues of medical errors, patient delays, and long wait

times in the ED. Matzke et al. (2021) acknowledged that an overwhelming percentage of medical errors and patient delays occur in high-stakes clinical practice settings such as the intensive care unit, operating suites, and the ED. Common contributing factors to such events often include a serious breakdown in teamwork or miscommunication among cross-functional teams. Ineffective communication in EDs can be detrimental to team collaboration and patient outcomes (Matzke et al., 2021). This study used an evidenced-based communication-training toolkit on staff perception of teamwork and communication in an academic Level I Emergency and Trauma Center. The result showed 23 females and 12 males with a mean age of 30 years and 9 years of experience participated. T-TPQ scores showed a mean of 121.4 pre-training and a mean of 128.2 after-training. Paired *t*-tests demonstrated overall pre-intervention (mean = 3.52, SD ± 0.5) and post-intervention (mean = 3.78, SD = 0.4) scores were significantly improved overall (-0.29 to -0.13, $p < 0.001$). The study concluded that an effective collaboration program to improve teamwork and communication in the ED is needed to promote effective team performance.

In a descriptive study conducted by Grover et al. (2017), they examined how building a collaborative team inclusive of strong leadership and communication skills is critical to the challenging demands of the ED. EDs play multiple, valuable roles in the health care system, which deems cross-functional team collaboration as essential for ED functionality to achieve its core business efficiently and effectively. Enhanced team collaboration and teamwork contributed to reduced error rates, increased patient safety, operational efficiency, and staff satisfaction in the ED (Grover et al., 2017).

Studies Related to Cross-Functional Team Collaboration in Hospital Emergency Departments

My study's independent variable is cross-functional team collaboration. The term "cross-functional teams" denotes multi-professionals working together to achieve a goal or implement changes and improvements. Cross-functional teams cut across hospital and healthcare organizational settings and significantly impact organizational processes. Previous literature demonstrated how effective teamwork impacted safe and quality healthcare delivery. For example, Porter et al. (2018) concluded that a collaborative environment such as the ED, should rely on effective team communication, trust, and a focus on achieving common organizational goals. The study proposed that physicians in leadership positions should seek ways to integrate a collaborative environment among healthcare teams capable of providing timely and effective patient care.

Communication and teamwork skills are essential for providing safe, timely, and effective health care. When all clinical and nonclinical employees collaborate effectively, healthcare teams can improve patient outcomes, prevent medical errors, improve efficiency, and increase patient satisfaction. A study conducted by Karam et al. (2017) observed that interprofessional (cross-functional) collaboration between general physicians and emergency department teams was thus far inadequately explored. Karam et al. (2017) addressed the issues of collaboration and cross-functional teams in healthcare. Karam et al. (2017) noted that collaboration among health teams should be developed further due to the urgency of practicing clinical effectiveness and timely care. They further examined the ED's responsibility for providing medical and surgical care to

patients arriving at the hospital in need of immediate care. The study showed the significance of providing prompt and effective interprofessional collaboration among teams to prevent medical errors, patient delays, and long wait times. This research is critical to my study because it may help close the gap on what data is needed to foster cross-functional team coordination for improved patient management in the ED.

The evaluation of teamwork and communication on patient safety in EDs by Alsabri et al. (2022) suggests that enhanced training interventions on teamwork and communication may improve the culture of patient safety in the ED setting. The study shows the prevalence of medical errors and adverse events in the ED when team collaboration and communication intervention are not enhanced. Alsabri et al. (2022) observed the need for further research that assesses multi-professional (cross-functional) teamwork and communication to ensure a better grasp of team performance and improvement in the ED setting. The Alsabri et al. (2022) study review was designed to measure the effects of evidence-based team training interventions on patient safety culture and outcomes within the ED setting. They argued that teamwork is a combination of thoughts, behaviors, and feelings that strengthens team performance and the quality of care. They observed that team collaboration impacts patient outcomes and safety in the ED.

Studies Related to Timely and Effective Emergency Department Care

Timely and effective care in hospital emergency departments (EDs) is essential for good patient outcomes (CMS, 2021). Delays in the ED can reduce the quality of care and increase risks and discomfort for patients with serious illnesses or injuries. The CMS

(2021) reported that waiting times at different hospitals can vary widely, depending on the number of patients seen, staffing levels, efficiency, admitting procedures, or the availability of inpatient beds. Providing timely and effective care in the ED requires effective communication and team collaboration among teams as well as management of individual patients (Franklin et al., 2017). Researchers observed that the metrics mostly used to measure ED performance include length of stay, time to provider, delays in hospital admissions, and the number of patients who leave the ED without being seen or receiving treatment. Franklin et al. (2017) identified the correlation between patient flow and ED factors such as staffing ratios, the current number of patients in the unit (census), hospital admissions, and hospital occupancy.

Additionally, Yiadom et al. (2020) indicated that a standard document with a precise set of operational definitions, time intervals, and utilization measures is necessary for providing timely and effective ED care. The document can help cross-functional ED teams define clear individual responsibilities within the team. Yiadom et al. (2020) observed that the ED is becoming more sophisticated and requiring a more coordinated team approach for process improvement. Their study argued that a shared language and vocabulary among team members is critical for managing ED operations. In the study, 46 ED operations, data management, and benchmarking experts were invited to participate in the summit. Literatures reviews related to standards of ED operations were considered and discussed. Each group submitted a revised set of definitions prior to the summit. The study findings indicate that the dictionary was updated and expanded to serve as a

standard document among teams and leaders to help ensure timely and effective ED care (Yiadom et al., 2020).

Studies Related to the Gap in Practice

Although researchers have investigated this issue, there is very little or no literature on how effective cross-functional team collaboration and communication can reduce patient delays and long wait times at emergency departments. Karam et al. (2017) conducted a study aimed at assessing interprofessional collaboration between general physicians and ED teams in the French speaking regions of Belgium. The researchers used D'Amour's theoretical framework of interprofessional collaboration and relationships between individuals. The study findings show the components of collaboration to include mutual acquaintanceship and trust, shared power and objectives, out-of-hours services, role clarification, leadership, and overall environment. Karam et al. (2017) used a qualitative approach to explore experiences of interprofessional collaboration between general physicians and ED teams. Eight group interviews were conducted in Brussels and other areas of French-speaking Belgium between September 2014 and December 2015, depending on participants' preferences and availability. The results from the study showed that communication—whether written, oral, or electronic—and the patient's role enhances or hinders interprofessional team collaboration.

Researchers have highlighted significant gaps in collaboration among different trauma team professionals, posing a major decrease in quality-of-care to patients. According to Rosen et al. (2018) teamwork processes within health care are associated

with the quality and safety of care delivery systems. Lapierre et al. (2019) examined the factors that facilitate and impede interprofessional teamwork in ED care. The study used a qualitative descriptive exploratory design and was conducted at a hospital in Montreal, Canada, a designated secondary trauma center with approximately 1,000 trauma cases per year. The participants were recruited through an invitation letter provided to all health care professionals working in the ED. The study findings confirmed that there were multiple factors impacting team collaboration in trauma care settings (Lapierre et al., 2019). Present-day EDs and other healthcare settings continue to play host to cross-functional teams with different backgrounds in healthcare. Thus, research into the reality and particular needs of professionals in specific care units seems essential (Lapierre et al., 2019). In this way, the contribution of my study may help hospital administrators create specific interventions that aim to improve team collaboration and communication in managing hospital EDs.

There are several studies linking the quality of teamwork to quality and safety and health care delivery. Rosen et al. (2018) study focused on highlighting the contributions of psychological research to the advancement of evidence-based teamwork practices in care delivery. They used a quantitative method that involved recent, comprehensive, empirical, and narrative reviews of the science of teams in health care, published between December 2000 and December 2017. Rosen et al. (2018) concluded that health care is invaluable to all our lives, and the quality of teamwork that existed within health systems impacted the outcomes that were realized. They also agreed that future research should be carried out to identify which factors are essential to improving teamwork among ED

teams for improved patient care. Porter et al. (2018) also concluded that there is a lack of formal physician education in developing teamwork skills and strategies, despite a growing trend in inter-disciplinary teams. The study used a purposive sampling approach in which four program architects of physician education within the Cleveland Clinic were invited to be interviewed. These individuals were instrumental in the founding and development of the Leading in Healthcare (LHC) program. The study findings indicated a dire need for educating physicians to lead cross-functional healthcare teams beyond the clinical context (Porter et al., 2018).

Quality Measures for Enhancing Timely and Effective Care

Quality measures are tools used by stakeholders to measure healthcare processes, outcomes, patient perceptions, and organizational structure and/or systems (CMS, 2022). CMS uses quality measures in its quality improvement, public reporting, and pay-for-reporting programs for specific healthcare providers. The goals of creating QMs in healthcare include effective, safe, efficient, patient-centered, equitable, and timely care (CMS, 2022). CMS engages healthcare institutions in ensuring quality, safety, accessibility, and affordability of healthcare for all. Nekhlyudov et al. (2019) examined the development of a comprehensive, evidence-based cancer survivorship care quality framework and proposed the next steps to systematically apply it in clinical settings, research, and policy. In the study, they identified an estimated 16.9 million cancer survivors in the U.S. who are ageing, have chronic medical conditions, and are cared for across health-care settings. CMS uses quality measures as a framework when applied in clinical settings through the implementation of effective, evidence-based interventions,

and in research through the expansion of initiatives to address gaps (Nekhlyudov et al., 2019).

Studies Related to Research Questions

Findings from recent studies indicate important gaps in collaboration among different healthcare team professionals, posing a delayed and quality-of-care challenge. Healthcare teams that communicate effectively and work collaboratively reduce the potential for error, resulting in enhanced patient safety and improved clinical performance. Lapierre et al. (2019) observed the significance of cross-functional teams in specific care units during times when collaboration is increasingly becoming the norm in healthcare settings. The study examined the development of specific interventions that aim to improve teamwork in the management of patients in the ED. Karam et al. (2017) shed new light on relationships between healthcare providers using D'Amour's structuration theory of interprofessional collaboration. The study noted that interprofessional collaboration between general physicians and emergency department teams was so far scarcely explored. These findings reveal there is a need for better professional role clarification, communication, and collaboration between the levels of care among team members.

Interprofessional training and education are critical to enhanced team collaboration. For instance, Karam et al. (2017) reported that in Belgium, several universities and nursing schools recognized the importance of an integrated approach to the education and training of health professionals. They noted that the development of interprofessional education programs in healthcare settings remains marginal, but should

be encouraged, promoted, and financed by stakeholders. CMS (2022) provided data for measuring ED care in hospitals showing that delays before receiving care in the ED can reduce the quality of care and increase risks and discomfort for patients with serious illnesses or injuries. Karam et al. (2017) identified communication as instrumental to promoting team collaboration. They also reported that most ED teams attached immense importance to comprehensive, clear, timely, and accurate communication for providing effective patient care. Furthermore, waiting times at different hospitals can vary widely, depending on the number of patients seen, staffing levels, admittance procedures, or the availability of inpatient beds.

Definitions

Cross-functional team collaboration: Cross-functional teams exist in healthcare organizations, providing a coordinated multi-disciplinary service to patients. They represent a collaborative team approach and are crucial for executing processes in a fast-paced and ever-changing work environment like the hospital ED. Pursley Dooling (n.d.) asserted that team collaboration and cooperation begins with effective communication and a foundation of accountability. Cross-functional teams in health care organizations provide a comprehensive view of problems, which is incredibly useful in designing and implementing improvements in work processes. Cross-functional teams must develop norms, communicate, and collaborate to provide coordinated, safe, timely and effective care to patients (Matzke et al., 2021).

Delayed care: Waiting times at different hospital EDs can vary widely due to factors such as the number of patients arriving at the ED, staffing levels, efficiency,

admitting procedures, and the availability of inpatient beds (CMS, 2021). Patient delays before receiving care in the ED can reduce the quality of care and increase risks and discomfort for patients with serious illnesses or injuries. CMS (2021) identified that timely and effective care in the hospital ED is essential for good patient outcomes.

Increased Suffering and Unpleasant Environments for Patients: The environment in which patient care is provided has a significant impact on the quality of care.

According to the CMS (2021), when patients spend long wait times at the ED before being seen by ED personnel, it indicates the ED is overcrowded or understaffed. Such an instance may lead to delays in administering the required medical care, prolonged suffering for the patient, and an unpleasant environment. Emergency department (ED) crowding is a worrisome trend and a direct source of patient harm. Researchers describe that ED crowding leads to significant patient harm and increased violence toward staff from aggrieved patients. Alsabri et al. (2022) explained that overcrowded EDs may lead to high clinician and nursing staff burnout, decreased provider productivity, and increased staff distraction resulting in human error. In a crowded environment, providing effective care can become difficult because multiple patients are forced to remain in the waiting room, thus experiencing some form of discomfort and unpleasant experience.

Patient safety and medical errors: The ED of a hospital is responsible for the provision of medical and surgical care to patients arriving at the hospital in need of immediate care (CMS, 2021). In some instances, ED teams may also respond to certain situations within the hospital, such as cardiac arrests. Patient safety involves the prevention and reduction of risks, errors, and harm that may occur to patients in the

process of administering medical care (Karam et al., 2017). Patient care measures are extremely significant in the care process because of the evolving complexity and rise in patient harm in healthcare systems. Bhatt and Swick (2017) acknowledged that to improve patient outcomes, prevent medical errors, improve efficiency, and increase patient satisfaction, cross-functional ED teams must collaborate and communicate effectively. The emergency department (ED) is exposed to frequent medical errors and preventable mistakes that can lead to patient harm and death (Eisenmann et al., 2018). The study agreed that improving teamwork and collaboration is key to reducing medical errors and improving patient safety in the ED and acute care settings.

Poor health outcomes: Health status is considered a reliable global assessment of a person's well-being and a measure of how populations perceive their health (CDC, 2021). Healthcare outcomes are a true measure of quality in terms of overall patient health over time. Enhancing patient outcomes should be the goal for health systems and stakeholders in healthcare (CDC, 2021). The CMS (2021) used the quality measure (QM) of the percentage of patients who left the ED before being seen by the ED team and may experience increased ill-health, exposing them to deteriorating health and poor health outcomes. A lower number of patients is more beneficial for this quality measure (QM) because the higher the number of patients who leave the ED without being seen by the ED team decreases the health status of the overall population.

Quality Measure (QM) Scores: Quality measures are implemented to assure quality health care for Medicare beneficiaries through accountability and public disclosure (CMS, 2022). CMS uses quality measures in its various quality initiatives that

include quality improvement, pay for reporting, and public reporting. According to CMS (2022) measures used to assess and compare the quality of health care organizations are grouped into structure, process, and outcome measure. The Quality Measures for this study include the percentage of patients who left the emergency department before being seen and the average (median) time patients spent in the emergency department before leaving from the visit. CMS uses quality measurement to improve outcomes for patients, their families and providers while also reducing the burden on clinicians and providers. CMS reports that the goal of initiating quality measures includes:

- Addressing high impact measure areas that safeguard public health.
- Adopting measures that are patient-centered and meaningful to patients.
- Adopting outcome-based measures where possible
- Fulfilling legislative requirements
- Minimizing burden for providers
- Identifying significant opportunities for improvement
- Addressing measure needs for population-based payment through alternative payment theories.
- Aligning across programs and payers (e.g., Medicare, Medicaid, and commercial payers) (CMS, 2022)

Quality of care: In the United States, quality health care is a high priority for the Department of Health and Human Services (HHS), and the Centers for Medicare and Medicaid Services (CMS). Several quality initiatives, such as accountability and public disclosure, are implemented by CMS to assure quality health care for Medicare

beneficiaries. The goal of creating such measures includes the provision of effective, safe, efficient, patient-centered, equitable, and timely care. For instance, the CMS (2021) noted that long stays in the ED prior to a patient leaving may be due to overcrowding or an understaffed ED. Such conditions can lead to delays in treatment, increased suffering for patients, reduced quality of care, and unpleasant care settings.

Timely and effective ED care: The measures of timely and effective care show how often or how quickly hospitals provide care to patients. Timely and effective care in hospital EDs is essential for good patient outcomes. Delays before receiving care in the ED can reduce the quality of care and increase risks and discomfort for patients with serious illnesses or injuries (CMS, 2021). CMS derive measures of timely and effective care from the medical records of eligible patients. The data submission process includes checks that allow hospitals to examine whether the data they are submitting is consistent with CMS requirements (CMS, 2021). Timely and effective care measures typically apply to any adult patient treated at a hospital which participates in the Hospital Inpatient Quality Reporting (IQR) Program and Outpatient Quality Reporting (OQR) Program (CMS, 2021).

Assumptions

This study is based on three assumptions. Firstly, it is assumed that the quality measure (QM) data points used are from the CMS hospital reported surveys conducted nationally between 2020 to 2021. The second assumption of this study is that the results of this study may be helpful to hospital ED leaders in improving timely and effective ED patient care. This study will further help fill the gap in the literature by explaining the

need for a more coordinated and collaborative team approach to improving safe and quality healthcare. Rosen et al. (2018) observed that in the United States alone, an estimated 85% of the population has at least one health care encounter annually and at least one quarter of these people experience four to nine encounters annually. Every patient who visits an ED requires effective team collaboration among cross-functional healthcare teams of clinicians, administrative staff, patients, and their loved ones (Rosen et al., 2018). Finally, it is assumed that a correlation exists between cross-functional team collaboration (IV) and timely and effective ED care (DV) when measuring the QM Score for percentage of patients who left the emergency department before being seen by ED staff. Thus, this study examines the impact, if any, of cross-functional team collaboration on timely and effective EDs when measuring QM Score Average (median) time patients spent in the ED before leaving the visit. This assumption remains critical to ED operations because it could help eliminate delays in treatment, increased suffering for those who wait, unpleasant treatment environments, and the risk for poor health outcomes.

Scope and Delimitations

Delimitations are limitations consciously set by authors to limit the study's aims and objectives so that the study's aims and objectives are achievable. Theofanidis and Fountouki (2018) argued that delimitations are in the researcher's control, because they result from specific choices made by the researcher. Among these are the choice of objectives and questions, variables of interest, theoretical perspectives that were adopted, the paradigm (qualitative, quantitative, or mixed), the theoretical framework, and the

choice of participants. In this study, the quality measure (QM) for timely and effective care comes from the data presented by hospitals derived from the medical records of their eligible patients. Hospitals can confirm if the data they are submitting is consistent with CMS guidelines through audit procedures and edit checks that CMS validates to ensure accuracy (CMS, 2021). The present study sample data is limited 548 hospital EDs across the United States from 2020- 2021. The sample data from the hospital EDs specifically show the percentage of patients who left the ED before being seen, and average (median) time patients spent in the emergency department before leaving from the visit.

Limitations

Limitations are constraints and weaknesses that are beyond the researcher's control but could impact the study findings (Theofanidis and Fountouki, 2018). A research study limitation is mostly linked to the selected study design, statistical theory constraints, funding constraints, or other factors. Theofanidis and Fountouki (2018) acknowledged that a study limitation is an imposed restriction outside of the researcher's control. Thus, limitations of any research study should be clearly stated. The variability of data quantity where large sample sizes may be required for more accurate analysis is an anticipated limitation of this study (Theofanidis and Fountouki, 2018). In this study, the measurements and testing tool itself may be a limiting factor because of the limited duration for reporting participant data. This can affect the ability to generalize the study findings to wider populations.

This study was concluded based on the data submitted to CMS concerning adult patients treated at hospitals participating in the Hospital Inpatient Quality Reporting

(IQR) Program and Outpatient Quality Reporting (OQR) Program. CMS reported that the adult patients reported included people with Medicare, Medicare managed care patients, and non-Medicare patients. I drew the study conclusions without empirically analyzing hospital EDs across the U.S., and the data of all patients who visited hospital ED across the U.S. Thus, this limitation can affect the ability to generalize the study findings. Notwithstanding, this research may provide useful information and data to hospital ED administrators on how cross-functional team collaboration affects timely and effective ED care. Another anticipated limitation to this study is finding the appropriate and updated information to support how cross-functional team collaboration affects timely and effective ED care.

Significance

Health status is considered a reliable global assessment of a person's well-being and a measure of how populations perceive their health (CDC, 2021). Healthcare outcomes are a true measure of quality in terms of overall patient health over time. Enhancing patient outcomes should be the goal for health systems and stakeholders in healthcare (CDC, 2021). The Joint Commission (n.d.) observed that reducing patient delays in the emergency department (ED) can improve access to treatment and increase quality of care. Research indicated that reducing long patient wait times potentially improves access to timely and effective care, specific to the patient's condition (The Joint Commission, n.d.). This study is significant to hospital ED operations and practice because it shows how delays and long wait times expose patients to higher health risks and poor health outcomes.

Similarly, CMS (2021) affirmed that timely and effective care in hospital emergency departments is essential for positive patient outcomes. A delay in care is when a patient does not receive the treatment which was supposed to be administered. Treatment can be in the form of a medication, lab test, physical therapy procedure, or any kind of treatment. The Joint Commission reported that in 2014, the Commission's Office of Quality and Safety analyzed 73 sentinel events (or patient safety events that result in temporary or permanent harm, or death) that were the result of delays in treatment; 48 of these events resulted in death of the patient. From 2010-2014, 522 sentinel events were due to delays in treatment, with 415 of these events resulting in patient death, 77 resulting in permanent loss of function, and 24 resulting in unexpected additional care or extended stay. Therefore, this study seeks to equip healthcare leaders and policymakers with the appropriate information needed to enhance timely and effective hospital ED care, thereby contributing to positive social change.

Summary and Conclusions

The emergency department (ED) is prone to preventable mistakes that can lead to patient harm and death. Researchers suggest that improving teamwork is critical to reducing the rate of errors in acute care settings (Eisenmann et al., 2018). One of the major ED challenges is achieving effective communication and collaboration among the diverse medical teams in the ED to guarantee timely and effective care. Karam et al. (2017) argued that health systems regulation did not appear to play a significant role in promoting collaboration among teams. Increased role clarification, communication, and

team collaboration is needed to foster cross-functional team coordination for more effective patient management.

The theory and/or concepts that ground this study include D'amour et al. (2009) which aimed to assess the effectiveness of interprofessional collaboration among healthcare teams. This theory showed how cross-functional healthcare team collaboration played a key factor in initiatives designed to increase the effectiveness of health services offered to patients. D'amour et al. (2009) observed that uncoordinated cross-functional healthcare teams may lead to unnecessary patient delays and long wait times. Therefore, D'amour's theoretical framework suggested improved team collaboration and coordination among teams.

This study measures hospital EDs performance using the quality measure (QM) score for percentage of patients who left the ED before being seen, and QM Score for Average (median) time patients spent in the ED before leaving the visit. CMS (2021) reports that hospital EDs which have high percentages of patients who leave without being seen may not have the staff or resources to provide timely and effective emergency room care. Similarly, CMS identified that long stays in the ED before a patient departs may be a sign that the ED is understaffed or overcrowded. This may result in delays in treatment, increased suffering for those who wait, and unpleasant treatment environments. Therefore, delays and long wait times at different hospitals can be caused by a variety of factors, such as the number of patients seen, staffing levels, efficiency, admitting procedures, and the availability of inpatient beds (CMS, 2021). Thus, I review

a quantitative secondary data set, based on information submitted by hospitals from the medical records of their eligible patients.

A growing body of literature confirms that enhanced teamwork can lead to improved clinical outcomes such as surgical mortality, ICU survival, and emergency room errors (Porter et al., 2018). The study argued that a gap exists in team training that can improve team effectiveness in an acute care setting such as the ED. Alsbri et al. (2022) also supported this gap in practice, identifying that training interventions on teamwork and communication may improve the culture of safety and patient outcomes in the ED setting. They asserted that adopting training programs for ED teams must be considered to reduce adverse events. They recommended the need for further research focused on assessing multi-professional teamwork and communication skills to both ensure a better understanding of team collaboration and propose initiatives that would improve patient experience in hospital EDs. Matzkel et al. (2021) also evaluated the effect of TeamSTEPPS® training (Team strategies and Tools to Enhance Performance and Patient Safety), an evidenced-based communication training toolkit, on staff perception of teamwork and communication in an academic Level I Emergency and Trauma Center. The study findings reveal that TeamSTEPPS® was an effective communication collaboration program that improved teamwork and communication in the ED. The study suggested that an evidence-based training strategy may promote a collaborative culture of effective communication and teamwork in acute care settings.

Section 2: Research Design and Data Collection

Introduction

The purpose of this quantitative study was to evaluate whether a correlation exists between cross-functional team collaboration and timely and effective ED care for patients who left 548 national regional hospital EDs before being seen between 2020 and 2021. I compared the QM score for these patients to that of all individuals who signed into an ED during this period. In addition, I evaluated the impact, if any, that cross-functional team collaboration has on timely and effective ED when measuring the QM score average (median) time that patients, between 2020 and 2021, spent in 548 national hospital EDs before leaving.

In Section 1, I described the methods I used to conduct the study. I also provided an overview of the study and discussed its potential significance. The literature reviewed focused on hospital EDs and how they serve as a unique environment within the health care system, bridging the worlds of outpatient and inpatient care. As reported by CMS (2021), inefficiencies in hospital EDs, such as delayed care and uncoordinated team response, could expose patients to increased suffering and put them at higher risk for poor health outcomes. In Section 1's literature review, I validated the role of teamwork and communication in the ED, and its relevance to timely and effective care, by engaging with peer-reviewed articles, which I accessed from Walden University Library databases. I stated the study's dependent variable (timely and effective care) and independent variable (cross-functional team collaboration). In this section, I further discuss the research design and rationale and the methodology for the study. The data set and

variables used in the study are critically analyzed, and my plan for ensuring reliability and validity and addressing missing data is identified. Finally, the ethical procedures for the study and the procedures concerning data storage and identity safeguards are analyzed.

Research Design and Rationale

Health care delivery processes involve numerous interfaces among multiple health care practitioners with diverse backgrounds. The hospital ED is the first point of contact for most critically ill patients needing immediate medical attention (Vieira Andrade et al., 2019). ED teams are comprised of physicians, nurses, technicians, pharmacists, advanced practice practitioners, phlebotomists, social workers, paramedics, and other allied health professionals. Researchers have identified that lack of communication and collaboration among diverse ED teams can lead to medical errors (Opper et al., 2019). These errors have the potential to cause patient delays, severe injuries, or unexpected patient death. Previous studies have also reported that poor communication among teams is a recognized problem in health care settings and is known to have a serious impact on workplace performance, productivity, and personal well-being (Klingberg, 2018).

Hospital EDs are notoriously prone to frequent preventable errors, especially those caused by poor communication among health care teams (Eisenmann et al., 2018). Timely and effective care is a product of care measures, which demonstrate how often and how quickly hospitals provide proven care that produces optimal results for patients with certain conditions (CMS, 2021). Research supports that timely and effective care in

hospital EDs is essential for good patient outcomes. CMS (2021) reported that experiencing delays before receiving care in the ED can reduce the quality of care and increase risks and discomfort for patients with serious illnesses or injuries. Cassarino et al. (2019) conducted a qualitative study on the role of health and social care professional teams in the ED. In the study, written and audio-recorded data were transcribed and thematically analyzed from 65 participants, including older adults who had recently attended the ED, their carers/relatives, doctors, and nurses. The study findings indicate that participants expressed positive views on HSCPs working in teams in the ED, which showed benefits for patients, staff members, and the hospital.

Previous researchers identified discipline-specific content and communication patterns in EDs. Cassarino et al. (2019) acknowledged that having an ED-based team promotes effective and timely decision-making and a more integrated approach to patient care. Similarly, Redley et al. (2017) identified how poor interprofessional communication poses a risk to patient safety in EDs. These studies highlight how effective communication and interprofessional collaboration among health care teams improve patient care. The current literature on hospital ED team collaboration has major gaps with regard to the impact of cross-functional team collaboration on timely and effective ED care. Although researchers have investigated this issue, research is limited to the topic of communication and collaboration that occurs among cross-functional teams in the ED (Redley et al., 2017).

I sought to address this gap in the research by conducting this study. The RQs and hypotheses for this quantitative analysis included the following:

RQ1: Is there a correlation between cross-functional team collaboration and timely and effective ED care when measuring the QM score for the percentage of patients who left 548 national regional hospital EDs before being seen by an ED staff member against the percentage of all individuals who signed into an emergency department between 2020-2021?

H_01 : There is no statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM scores for the percentage of patients who left the ED before being seen.

H_a1 : There is a statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM score for the percentage of patients who left the ED before being seen.

RQ2: What impact does cross-functional team collaboration have on timely and effective emergency care when measuring the QM score average (median) time that patients spent in the ED from the time they arrived before leaving for the visit between 2020-2021?

H_01 : There is no statistical association between cross-functional team collaboration on timely and effective emergencies when measuring QM score for average (median) time patients spent in the ED before leaving the visit.

H_a1 : There is a statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM score for the average (median) time patients spent in the ED before leaving the visit.

I used a quantitative approach to determine whether there was a correlation between cross-functional team collaboration and timely and effective ED care. The research problem for this study was a lack of knowledge on whether delays and long wait times at hospital EDs affect patient health and outcomes. According to CMS (2021), patients who leave the ED before being seen are faced with increased risks and discomfort with serious illnesses or injuries. Eisenmann et al. (2018) noted that the ED is notoriously prone to frequent preventable errors and due to ineffective cross-functional team coordination and collaboration. Poor communication among cross-functional health team members can interfere with timely and effective hospital ED response (Opper et al., 2019). The study's dependent variable was timely and effective ED care, and the independent variable was cross-functional team collaboration. The dependent variable (DV) of the study, timely and effective ED care, shows how often or how quickly hospitals provide safe and effective care to patients (CMS, 2021). Quality measures used by CMS to measure quality of care by hospital ED include left before being seen, average (median) time patients spent in the ED before leaving from the visit, ED volume, and head CT results. The data for timely and effective ED care were derived from the medical records of eligible patients and submitted to CMS by hospitals. CMS maintains a procedural checks and auditing capability that allows hospitals to check if the data they are submitting is consistent with what CMS specified (CMS, 2021).

To address the research problem of this study, I use the Pearson correlation to statistically prove if a correlation exists between cross-functional team collaboration and timely and effective ED care when measuring QM Score Average (median) time patients

spent in the emergency department before leaving from the visit, and the QM Score for percentage of patients who left the emergency department before being seen. CMS noted that the following categories of patients are excluded measures: patients who died in the ED, those left without the approval of a licensed provider, and those whose whereabouts after leaving the ED is undocumented in their medical record.

The Pearson correlation coefficient measures the strength of a linear association between two variables and is denoted by the symbol “ r ” (Frankfort-Nachmias et al., 2020). The Pearson correlation attempts to draw a line through the data of two variables, and the Pearson correlation coefficient, r , indicates the extent of the impact. The logical connections between the framework presented and the nature of this study include the Grover et al. (2017) descriptive study which shows that building a resilient team inclusive of strong leadership and communication skills is essential to withstanding the challenging demands of ED care. This theory focuses on how team collaboration may assist with increased levels of efficiency in the ED. This study may provide information to healthcare organization leaders and policymakers on the effect of cross-functional team collaboration on timely and effective ED care.

Access to health care impacts a person's overall physical, social, and mental health status and quality of life. The Accreditation Council for Graduate Medical Education (ACGME) asserted that healthcare delivery is team based and requires cross-functional teams to collaborate for improved health outcomes. Cross-functional teams in the ED are usually comprised of physicians, nurses, technicians, pharmacists, advanced practice practitioners, phlebotomists, social workers, paramedics, and other allied health

professionals. Timely and effective care in hospital EDs is critical to improved patient outcomes (CMS, 2021). Hence, delays before receiving care in the ED can reduce the quality of care and increase risks and discomfort for patients with serious illnesses or injuries. Researchers observed that safe and quality healthcare are significant indicators of health and well-being and are considered as a social determinant of health. Access to timely health care is essential for promoting and maintaining health, preventing and managing disease, reducing unnecessary disability and premature death, and achieving health equity for all Americans (CMS, 2021).

The purpose of this quantitative study was to evaluate whether a correlation exists between Cross-Functional Team Collaboration and Timely and Effective ED care when measuring the QM Score for percentage of patients who left the emergency department before being seen, and the QM Score Average (median) time patients spent in the emergency department before leaving from the visit. I sampled data from across the United States from 2020- 2021. This data set includes provider-level data for measures of ED care. CMS implements quality initiatives to assure quality health care for Medicare beneficiaries through accountability and public disclosure. These quality measures are used by CMS for various quality initiatives. Quality measures are tools that help regulators and policymakers measure or quantify healthcare processes, outcomes, patient perceptions, and organizational structure and/or systems that are associated with the ability to provide high-quality health care and/or that relate to one or more quality goals for health care (CMS, 2021). Quality measures as set by CMS include effective, safe, efficient, patient-centered, equitable, and timely care.

Further research findings also concluded that a precise set of operational definitions, time intervals, and utilization measures are necessary for timely and effective ED care (Yiadom et al., 2020). The study showed that effective communication and team collaboration are essential for managing emergency department (ED) operations. In the study, 46 ED operations, data management, and benchmarking experts were invited to participate in the EDDBA summit. The study result indicated that there was improvement in the entire ED, specifically in timely ED intake, boarding, diversion, and observation care. Additional research revealed that poor interprofessional communication posed a risk to patient safety at change-of-shift in emergency departments (EDs). Redley et al. (2017) conducted a study with sixty-six change-of-shift handovers at two acute hospital EDs in Victoria, Australia. Focus groups with thirty-four nurse participants complemented the observations. The study findings show that infrequent interprofessional communication and processes posed risks to patient safety at change-of-shift handovers. They observed three factors related to effective practices to support interprofessional communications across the four stages of ED handovers emerged. They include standard processes and practices, teamwork and collaboration, and communication activities and practices. The findings of this study potentially will be helpful to hospital ED administrators allowing them to have access to information and data that will enhance the management of hospital ED care.

Methodology

Population

The target population of this study applies to any adult patients treated at the sampled 548 national hospital EDs participating in the Hospital Inpatient Quality Reporting (IQR) Program and Outpatient Quality Reporting (OQR) Program. These include people with Medicare, Medicare managed care patients, and non-Medicare patients. The target health service organization (HSO) for this study includes Hospitals A, B, and C. Hospital A has an ED capacity of 45 patient beds, Hospital B maintains a 665-bed quaternary care, teaching hospital that provides comprehensive health care for the region and is staffed with more than 800 physicians, 3200 employees, and 150 volunteers. The ED is staffed 24-hours a day by full-time emergency physicians, nurses, and other team members, treating approximately 80,000 patients annually. Hospital C is a Level I trauma and pediatric trauma center with 366 inpatient beds that receives approximately 125,000 emergency service requests annually from the coverage areas (American Hospital Directory, 2022).

Sampling and Sampling Procedures

In this study, I use publicly available datasets provided by CMS from target hospitals. These datasets were collected from the medical records of hospital eligible patients from 2020 to 2021. The study samples the quality measure (QM) score for percentage of patients who left the ED before being seen. This measure shows the percentage of every patient who signed into an ED but left before being evaluated by a healthcare professional. The second quality measure includes the score of average

(median) time patients spent in the ED before leaving the visit. This measure shows the average (median) time in minutes that patients spent in the ED from the time they arrived until the time they departed (CMS, 2021).

The measures of timely and effective care apply to any adult patients treated at hospitals participating in the Hospital Inpatient Quality Reporting (IQR) Program and Outpatient Quality Reporting (OQR) Program. These include people with Medicare, Medicare managed care patients, and non-Medicare patients. Hospitals with many discharges may provide data from a sample of eligible Medicare and non-Medicare patients, based on CMS sampling rules. CMS noted that lower numbers are better for both quality measures (QM) used for the study.

Procedure for Gaining Access to the Data Set

I employ raw datasets from Timely and Effective Care measures provider data from (CMS.gov, 2021). The measures of timely and effective care data are freely available for download in a Microsoft Excel file on the CMS website link provided. Timely and Effective Care hospital provider datasets include provider level data for measures of cataract surgery outcome, colonoscopy follow-up, heart attack care, emergency department care, preventive care, and pregnancy and delivery care. This study focuses on timely and effective care data for ED care. CMS noted that measures of timely and effective care apply to any adult patients treated at hospitals participating in the Hospital Inpatient Quality Reporting (IQR) Program and Outpatient Quality Reporting (OQR) Program (CMS, 2021). Hospitals with many discharges may provide data from a sample of eligible Medicare and non-Medicare patients, based on CMS sampling rules.

For VHA and DoD hospitals, the measures apply to eligible adult patients treated at VHA or DoD hospitals in accordance with The Joint Commission (2022) guidelines.

Sampling Inclusion and Exclusion Criteria

Timely and effective care provider data for ED care is made available to CMS by hospitals from the data that hospitals receive from the medical records of their eligible patients. CMS asserts that the measures of timely and effective care show how timely care is provided to patients, and how hospitals use outpatient medical imaging tests (such as CT scans and MRIs). The data submitted to CMS by hospital EDs go through a validation process consistent with CMS guidelines to ensure accuracy. Frankfort-Nachmias and Leon-Guerrero (2015) identified that purposive sampling is generally assumed to be selected specifically to yield cases that are informative. In this study, I rely on secondary datasets from CMS. These data involved investigations that were reported by hospital EDs as part of the CMS quality measures initiatives for rating hospital performances. Ruggiano and Perry (2019) assert that accessing secondary data may help answer new research questions, as well as increase sample sizes and statistical power. They argued that secondary data sharing promotes future research studies without potential costs associated with collecting primary data such as contacting participants directly.

Reputability of the Sources and Justification

The Centers for Medicare and Medicaid Services (CMS) provides health coverage to more than 100 million people through Medicare, Medicaid, the Children's Health Insurance Program, and the Health Insurance Marketplace. The CMS is saddled with the

task of strengthening and improving the US health care system and providing access to high quality care and improved health services (CMS, 2021). Therefore, CMS represents the best source of literature and/or datasets to answer the review questions in this study. CMS assesses the accuracy of chart-abstracted clinical process of care and electronic Clinical Quality Measure (eCQM) data within the Hospital Inpatient Quality Reporting (IQR) Program, as well as Healthcare-Associated Infection (HAI) data in the Hospital-Acquired Condition (HAC) Reduction Program through the validation process. CMS verifies on a quarterly basis that hospital data submitted to the CMS Clinical Data Warehouse and data submitted to the Centers for Disease Control and Prevention's (CDC) National Healthcare Safety Network (NHSN) can be reproduced by a trained abstractor using a standardized protocol. CMS also verifies annually the eCQM data submitted to the Clinical Data Warehouse to determine if they align with the measure requirements.

The Use of Power Analysis to Determine Sample Size

A study's statistical power is defined by sample estimates and relies on the researcher's ability to reject the null hypothesis indicating no statistical difference between the groups in the underlying population (Prashanth et al., 2022). To have a high degree of authority, a study's power must be at least 80%, taking into consideration the available resources and ethical limitations. Statistical power is the possibility of detecting the anticipated difference between groups in the research samples, if the difference exists among the persons from whom the samples were obtained.

In this study, I conducted a sample size analysis of a medium effect size, power of 80%, and significance level of .05. I calculated the desired sample size as follows: effect size = 0.50, error p= 0.05, Margin of error =10% of the P= 0.08. Based on the power analysis, the sample size of 548 hospital EDs with CMS provided 80% power to address the research questions. Using the alpha level of $\alpha=0.05$ for a small effect size of 0.2, the minimum number of hospitals EDs with CMS (n = 548) were included in the study findings.

Instrumentation and Operationalization of Constructs

The data used for this study come from the measures included under timely and effective care that hospitals receive from the medical records of their eligible patients submitted to CMS. Most of the measures of timely and effective care apply to any adult patients treated at hospitals participating in the Hospital Inpatient Quality Reporting (IQR) Program and Outpatient Quality Reporting (OQR) Program (CMS, 2021). These include people with Medicare, Medicare managed care patients, and non-Medicare patients. Hospitals with many discharges may provide data from a sample of eligible Medicare and non-Medicare patients, based on CMS sampling rules. For VHA and DoD hospitals, the measures apply to eligible adult patients treated at VHA or DoD hospitals in accordance with The Joint Commission (2022) guidelines. The measures posted on CMS site represent wide agreement from CMS, the hospital industry and public sector stakeholders like The Joint Commission (TJC), the National Quality Forum (NQF), and the Agency for Healthcare Research and Quality (AHRQ).

These stakeholders collaborated to identify measures for public reporting. CMS initiates quality measures to assure quality health care for Medicare Beneficiaries through accountability and public disclosure. Quality measures are tools that help measure or quantify healthcare processes, outcomes, patient perceptions, and organizational structure and/or systems that are associated with the ability to provide high-quality health care and/or that relate to one or more quality goals for health care (CMS, 2021). The measures for the dependent variable are calculated from answers to the following questions asked during primary data collection: The operationalizations for each of the dependent variables that are used in this study include:

1. Percentage of patients who left the emergency department before being seen. This measure shows the percentage of all individuals who signed into an emergency department but left before being evaluated by a healthcare professional. Lower numbers are better.
2. Average (median) time patients spent in the emergency department before leaving from the visit. This measure shows the average (median) time in minutes that patients spent in the emergency department – from the time they arrived, to the time they left. It does not include patients who died in the emergency department, left without the approval of a licensed provider, or do not indicate where they went after they left the emergency department documented in their medical record. Lower numbers are better.

The CMS data measure responses and ID as presented in raw datasets and from hospital EDs used for analysis in this study include:

1. Emergency department volume (EDV)
2. Average (median) time patients spent in the emergency department before leaving the visit. A lower number of minutes is better (OP_18b).
3. Average (median) time patients spent in the emergency department before leaving from the visit- Psychiatric/Mental Health Patients. A lower number of minutes is better (OP_18b).
4. Left before being seen (OP_22).

CMS (2021) asserts that the information provided on their site allows confidence intervals to be calculated for each reported measure, based on sample size. The smaller the sample size, the greater the difference in rates must be for that difference to be statistically meaningful. Significant differences between individual hospitals' rates may be significant, but minor differences between hospitals are usually not significant. The complexity of patients seeking ED care is increasing because of populations' demographic change and more sophisticated treatment strategies (Grover et al., 2017). Measures are based on scientific evidence about processes and treatments that hospitals provide to patients. CMS uses these core measures to help hospital EDs systems improve the quality of patient care by focusing on the actual results of care.

Table 1

CMS Timely and Effective care measures

Variable Name	Variable Category	Variable Code	Scale/ Measure
Cross-functional team collaboration	IV		
Left before being seen.	DV	OP_22	Ratio- Lower numbers are better.
ED volume	DV	EDV	Ratio- Lower numbers are better.
Average (median) time patients spent in the ED before leaving from the visit	DV	OP_18b	Ratio- Lower numbers are better.

Note: Data for Timely and effective care measures are from the Centers for Medicare and Medicaid Services, 2021. (<https://data.cms.gov/provider-data/topics/hospitals/timely-effective-care>).

Data Analysis Plan

In this study, the SPSS software was used to examine the data collected from CMS. The study equally used Microsoft Excel tables from CMS to enumerate the quality measures (QM) for each dependent variable. The study, therefore, computed the Pearson correlation test and the bivariate regression (linear regression). A Pearson correlation would show the relationship among variables if any, and the magnitude or impact of one variable on another (Frankfort-Nachmias et al., 2020). The Pearson correlation coefficient (r) is the most common way of measuring a linear correlation. It is a number between -1 and 1 that measures the strength and direction of the relationship between two variables (Wagner, 2017). Descriptive statistics is an option that can be included in

the SPSS statistics linear regression. This study employed descriptive data analysis design to summarize the dataset. Specifically, it was used to describe the strength and direction of the linear relationship between the variables.

The Pearson correlation is critical in this study in attempting to establish a linear relationship between the study's independent variable (cross-functional team collaboration) on the dependent variable (timely and effective ED care) with measurements. Analyzing secondary data has the potential to provide important facts and valuable insights to organizations and society's most pressing questions. An abundance of secondary data exists globally from reputable sources. Providing reliable data and accurate information to organizations and other consumers in making critical health care decision is a goal of the CMS (American Healthcare Association, 2016).

Research Questions and Hypotheses

Data analysis was conducted to answer the following research questions and hypothesis:

RQ1: Is there a correlation between cross-functional team collaboration and timely and effective ED care when measuring the QM score for the percentage of patients who left 548 national regional hospital EDs before being seen by an ED staff member against the percentage of all individuals who signed into an emergency department between 2020-2021?

H_0 1: There is no statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM scores for the percentage of patients who left the ED before being seen.

H_{a1} : There is a statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM score for the percentage of patients who left the ED before being seen.

RQ2: What impact does cross-functional team collaboration have on timely and effective emergency care when measuring the QM score average (median) time that patients spent in the ED from the time they arrived before leaving for the visit between 2020-2021?

H_0 : There is no statistical association between cross-functional team collaboration on timely and effective emergencies when measuring QM score for average (median) time patients spent in the ED before leaving the visit.

H_{a1} : There is a statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM score for the average (median) time patients spent in the ED before leaving the visit.

Interpretation of Results

Selecting an appropriate tool to help analyze the strength of evidence and embedded biases is critical to the study process. The Centers for Medicare and Medicaid Services (CMS, 2021) developed the database used for this research. In this study, the measures included under timely and effective care come from the data that hospitals receive from the medical records of their eligible patients. These datasets submitted to CMS include auditing procedures and edit checks that allow hospitals to determine if the data they are submitting is consistent with what CMS specified. CMS authenticates some of the submitted datasets to ensure accuracy.

The information provided on the CMS site allows confidence intervals to be calculated for each reported measure, based on sample size. The smaller the sample size, the greater the difference in rates must be for that difference to be statistically meaningful (CMS, 2021). Major differences between rates from individual hospitals may be significant, but small differences between hospitals are usually not significant. These tools have been validated by CMS, which is a reputable government agency. Hence, the tools have been considered appropriate to be utilized for this study. Researchers, health systems, and policy makers can utilize these data sets for various categories of populations in their prospective research. To acknowledge and account for types of bias within the appraisal, reference was made to the secondary data sets provided by CMS.

Threats to Validity

The threats to validity section in a quantitative study or dissertation is intended to acknowledge potential factors that may impact or influence the research or skew the data being collected. The research study process can only be as unbiased as the researcher and the circumstances that he or she is working with. Threats to validity are both internal and external. Internal validity considers the causality between an action that has been taken and the resulting change that can be observed. For example, this study sampled hospital data submitted by hospitals to Hospital Quality Reporting (HQR) Secure Portal through the CMS Abstraction and Reporting Tool (CART) or vendors. Attempts to ensure that the information supplied is valid, reliable, and accurate can be difficult. Researchers primarily assume that the process is accurate and not biased. Secondary data use in

research studies can be threatened because the methods for gathering and collecting the data cannot be controlled by the researcher.

External validity relates to the usability of the findings in a research study, which questions the applicability of the researcher's findings in a real-world setting. External validity identifies whether the study results can be implemented in other scenarios, different from the initial study's purpose. External validity addresses the limitations of using secondary data sets for the study. Any factor that may have affected the ability to generalize the results of this study is a threat to the study's validity.

This study dataset applies to any adult patients treated at hospitals participating in the Hospital Inpatient Quality Reporting (IQR) Program and Outpatient Quality Reporting (OQR) Program. These include people with Medicare, Medicare managed care patients, and non-Medicare patients. Hospitals with many discharges may provide data from a sample of eligible Medicare and non-Medicare patients, based on CMS sampling rules. For VHA and DoD hospitals, the measures apply to eligible adult patients treated at VHA or DoD hospitals in accordance with The Joint Commission (2022) guidelines. The selection of specific patients and hospitals used for the dataset may influence outcomes. There were also limitations to the variables used in the study.

In this study, the data used were submitted to CMS by hospitals as the measures included under timely and effective care. These measures come from the data that hospitals receive from the medical records of their eligible patients. Hence, I relied on the accuracy of the data submitted by hospitals to CMS to arrive at the study findings. The data reported to CMS by hospitals may contain potential sources of bias. CMS noted that

they do not perform tests of statistical significance in reporting hospital data on the measures of timely and effective care. However, the information provided on the site allows confidence intervals to be calculated for each reported measure, based on sample size. Another constraint of this study was limiting access to the literature reviewed to five years, which was between 2017-2023. However, this constraint did not prevent me from completing this study because I had access to several other related literature sources for review.

The study is limited to the way the variables were measured, because selecting an insignificant level may create room for a margin of error. There is a probability that significant information could be eroded in the process of collating and reporting data to CMS which may potentially impact the study findings. In this study, the correct dataset from CMS was used. Secondary datasets may be subject to issues of internal validity, such as the choice of using the wrong dataset accordingly (Creswell and Creswell, 2018). The threat to internal validity makes it difficult for researchers to accurately state the impact of independent and dependent variables in a study. For this study, hospitals selected the participants in the survey dataset from the medical records of their eligible patients. There was no issue of participant dropout to affect internal validity.

Ethical Procedures

The study accessed secondary data from CMS, a United States government institution. The data provided by CMS is available to the public, which is accessible by anyone. I also forwarded the request to use the secondary data to the University panel, and the datasets were approved and deemed suitable for use. The researchers ensured that

the anonymity of the human participants was maintained. In a research study process, researchers are required to anticipate the ethical issues that may arise during the study (Creswell and Creswell, 2018). This study involved collecting data from the CMS database submitted by hospitals which is gathered from the medical records of their eligible patients. Frankfort-Nachmias and Leon- Guerrero (2015) identified that both extrinsic and intrinsic factors could threaten the validity of a study.

In this study, the measures included under timely and effective care in the CMS database come from the data that hospitals receive from the medical records of their eligible patients, which was subject to self-reporting, recall and non-response bias. The secondary data that was obtained met all ethical requirements during data collection. These datasets are submitted to CMS, the authorized data collectors as part of QM to improve hospital performance and patient experience. The datasets met anonymity and security requirements, since no personally identifiable information was shared in the data for any human respondent; the data is to be used solely for this research.

The data reported to CMS by a hospital may contain potential sources of bias. Mitigating threats to the validity of the current study ensures that the independent variable being studied had an impact on the dependent variable. In this study, the measures of timely and effective care applied to any adult patient treated at hospitals participating in the Hospital Inpatient Quality Reporting (IQR) Program and Outpatient Quality Reporting (OQR) Program. The Hospital Inpatient Quality Reporting Program was originally mandated by Section 501(b) of the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003 (CMS, 2021). CMS pays hospitals

that successfully report designated quality measures. This was modified by the American Recovery and Reinvestment Act of 2009 and the Affordable Care Act of 2010.

Summary

In Section 2, I present details on the research design, rationale, methodology, and threats to validity for the study. In this section, I also provide details on ethical considerations for the study as well as data analysis plans. The study employed a Pearson correlation coefficient to determine the magnitude or impact of the independent variable on the dependent variable. The Pearson correlation is used to establish the cause effect relationships between the independent variable on the dependent variable with measurements. The Pearson coefficient represents the relationship between two variables that is measured on the same interval or ratio scale. The target population for this study involves sampling data from across the United States. The quality measures (QM) included under timely and effective ED care come from the data that hospitals gather from the medical records of their eligible patients. These datasets are submitted and warehoused by CMS, which is available to the public for accessibility.

Section 3: Presentation of the Results and Findings

Introduction

Delays and long stays in the ED may indicate that the ED is understaffed or overcrowded (CMS, 2021). This may result in delays in treatment, increased suffering for the patients who wait, and unpleasant treatment environments (CMS, 2021). The objective of this study was to evaluate whether a correlation exists between cross-functional team collaboration and timely and effective ED care for patients who left 548 national regional hospital EDs before being seen between 2020 and 2021. I compared QM score for these patients to that of all individuals who signed into an ED during this time frame. In addition, I evaluated the impact, if any, that cross-functional team collaboration has on timely and effective ED when measuring the QM score average (median) time that patients, between 2020 and 2021, spent in 548 national hospital EDs before leaving. I explored the following RQs and hypotheses:

RQ1: Is there a correlation between cross-functional team collaboration and timely and effective ED care when measuring the QM score for the percentage of patients who left 548 national regional hospital EDs before being seen by an ED staff member against the percentage of all individuals who signed into an emergency department between 2020-2021?

H_0 1: There is no statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM scores for the percentage of patients who left the ED before being seen.

H_{a1} : There is a statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM score for the percentage of patients who left the ED before being seen.

RQ2: What impact does cross-functional team collaboration have on timely and effective emergency care when measuring the QM score average (median) time that patients spent in the ED from the time they arrived before leaving for the visit between 2020-2021?

H_{01} : There is no statistical association between cross-functional team collaboration on timely and effective emergencies when measuring QM score for average (median) time patients spent in the ED before leaving the visit.

H_{a1} : There is a statistical correlation between cross-functional team collaboration on timely and effective emergency care when measuring QM score for the average (median) time patients spent in the ED before leaving the visit.

Data Collection of Secondary Data Set

I used raw CMS data sets from 2021 to 2022. The measures of timely and effective care show how quickly hospitals provide care to patients. Most of the measures of timely and effective care apply to any adult patients treated at hospitals participating in multiple quality programs. These include people with Medicare, Medicare managed care patients, and non-Medicare patients (CMS, 2020). Hospitals with many discharges may provide data from a sample of eligible Medicare and non-Medicare patients, based on CMS sampling rules. For VHA and DoD hospitals, the measures apply to eligible adult

patients treated at VHA or DoD hospitals in accordance with The Joint Commission (2022) guidelines.

CMS does not engage in tests of statistical significance in reporting hospital data on the measures of timely and effective care. However, the information provided on the CMS site allows confidence intervals to be calculated for each reported measure, based on sample size. The smaller the sample size, the greater the difference in rates must be for that difference to be statistically meaningful. Significant differences between individual hospitals' rates may be significant, but small differences between hospitals are usually not significant. CMS displays data on timely and effective care (hospital, state, and national) on its website.

Time Frame for Data Collection

I analyzed secondary data from the CMS for January 1 through December 31, 2021. The data submission process includes auditing procedures that allow hospitals to confirm if the data they are submitting is consistent with what CMS specified. Most of the measures included under timely and effective care are from the medical records of eligible patients, as reported by hospitals (CMS, 2021). CMS thereafter validates some of the submitted data to ensure accuracy and consistency. For this study, I examined relationship between cross-functional team collaboration and timely and effective ED care and the impact of this collaboration on timely and effective ED care. For RQ1, I compared the QM score for the percentage of patients who left 548 national hospital ED before being seen against the percentage of all individuals who signed into an ED

between 2020 and 2021. For RQ2, I measured the QM score average (median) time that patients spent in the ED before leaving.

Baseline Descriptive and Demographic Characteristics of the Sample

In the literature review of this study, the ED was a unique platform for connecting outpatient and inpatient care, existing mostly within healthcare systems. The Center for Medicare and Medicaid Services (CMS) (n.d.) describes the ED as a platform for providing acute care services to patients requiring emergency and urgent care. The CMS reports that there were nearly 139 million emergency room visits in the United States in 2017 (CMS, 2021). The provision of safe and quality healthcare to patients and communities is a priority to community leaders and the government. This study compares 548 national hospital EDs across the United States that submitted their data to CMS from 2020 to 2021.

Determination of the Basic Indicators of Quality of Each Independent Variable

Basic Amenities Indicators

The quality measures (QM) employed by CMS to measure timely and effective ED care include but are not limited to: Left before being seen, emergency department volume, and average (median) time patients spent in the ED before leaving from the visit. CMS (2021) asserts that lower numbers are better for these measures.

Results

The key findings revealed that there was statistical correlation between Cross-Functional Team Collaboration and Timely and Effective ED care when measuring QM Score for the percentage of patients who left the ED before being seen, and QM Score

Average (median) time patients spent in the ED before leaving from the visit.

A total number of 548 hospitals were selected using simple random sampling in SPSS from over seven thousand hospitals that CMS collected data from between January 2021 and December 2021. Since the variables from the dataset were in rows, I realigned the rows as columns to run the correlation analyses.

The sample was analyzed for research RQ1 using a bivariate correlation between the percentage of patients that left before being seen against the percentage of all individuals who signed into the emergency department between 2020-2021?

For research RQ2, a bivariate correlation analysis was conducted to measure the impact of cross-functional team collaboration on timely and effective ED care when measuring QM Score Average (median) time patients spent in 548 national hospital ED before leaving from the time they arrived for the visit between 2020-2021?

Research Question 1

RQ 1: Is there a correlation between Cross-Functional Team Collaboration and Timely and Effective ED care when measuring the QM Score for the percentage of patients who left 548 national hospital EDs before being seen against the percentage of all individuals who signed into an emergency department between 2020-2021?

The Results showed there was a weak positive correlation between the dependent and independent variables, and was statistically significant at the 1% level, $r(546) = .307, p < .001$. r is the correlation coefficient and 546 is the degrees of freedom for the test. Since the p-value of .000 was lower than the .05 significance level, the test was statistically significant. Therefore, we reject the null hypothesis. There is enough

evidence to suggest that there is a correlation between Cross-Functional Team Collaboration and Timely and Effective ED care.

Table 2

		Left	Wait_time
Left	Pearson Correlation	1	.307**
	Sig. (2-tailed)		.000
	N	491	491
Wait_time	Pearson Correlation	.307**	1
	Sig. (2-tailed)	.000	
	N	491	548

** . Correlation is significant at the 0.01 level (2-tailed).

Research Question 2

RQ 2: What impact does cross-functional team collaboration have on timely and effective ED care when measuring QM Score Average (median) time patients spent in 548 national hospital ED before leaving from the time they arrived for the visit between 2020-2021?

The results showed there was a weak positive correlation between the dependent and independent variables, and was statistically significant at the 1% level, $r(546) = .164$, $p < .001$. Since the p-value of .000 was lower than the .05 significance level, the test was statistically significant. Therefore, we reject the null hypothesis. The study findings revealed that there is enough evidence to suggest that Cross-Functional Team Collaboration has an impact on Timely and Effective ED care. when measuring QM

Score Average (median) time patients spent in 548 national hospital ED before leaving from the time they arrived for the visit between 2020-2021?

Table 3

		Left	Med_Wait
Left	Pearson Correlation	1	.164**
	Sig. (2-tailed)		.000
	N	491	491
Med_Wait	Pearson Correlation	.164**	1
	Sig. (2-tailed)	.000	
	N	491	548

** . Correlation is significant at the 0.01 level (2-tailed).

Summary

This study presented two research questions (RQs); 1) Is there a correlation between Cross-Functional Team Collaboration and Timely and Effective ED care when measuring the QM Score for the percentage of patients who left 548 national hospital EDs before being seen against the percentage of all individuals who signed into the emergency department between 2020-2021? In RQ2, I attempted to determine the impact of cross-functional team collaboration on timely and effective ED care when measuring the QM Score Average (median) time patients spent in 548 national hospital EDs before leaving from the time they arrived for the visit between 2020-2021?

The key findings revealed that there was statistical correlation between Cross-Functional Team Collaboration and Timely and Effective ED care when measuring QM Score for the percentage of patients who left the emergency department before being seen, and QM Score Average (median) time patients spent in the emergency department

before leaving from the visit. The study sample included 548 hospitals nationally selected, using simple random sampling in SPSS from over seven thousand hospitals that CMS collected data from between January 2021 and December 2021.

Section 4: Application to Professional Practice and Implications for Social Change

Introduction

The purpose of this quantitative study was to evaluate whether a correlation exists between cross-functional team collaboration and timely and effective ED care when measuring the QM score for the percentage of patients who left 548 national hospital EDs before being seen against the percentage of all individuals who signed into an ED between 2020 and 2021. In addition, I evaluated the impact, if any, that cross-functional team collaboration had on timely and effective ED when measuring the QM score average (median) time patients spent in 548 national hospital EDs before leaving.

Interpretation of the Findings

RQ1 probed whether a correlation exists between cross-functional team collaboration and timely and effective ED care when measuring the QM score for the percentage of patients who left 548 national hospital EDs before being seen against the percentage of all individuals who signed into an ED between 2020 and 2021 based on the data obtained from CMS. I established there was a weak positive correlation between the dependent and independent variables, and was statistically significant at the 1% level, $r(546) = .307$, $p < .001$. r is the correlation coefficient and 546 is the degrees of freedom for the test. Since the p-value of .000 was lower than the .05 significance level, the test was statistically significant. Therefore, we reject the null hypothesis. The results revealed that there is a correlation between Cross-Functional Team Collaboration and Timely and Effective ED care when measuring the QM score for the percentage of patients who left

548 national hospital EDs before being seen against the percentage of all individuals who signed into an ED between 2020 and 2021.

RQ2 probed what impact cross-functional team collaboration has on timely and effective ED care when measuring QM score average (median) time patients spent in 548 national hospital EDs before leaving. The period examined was 2020–2021. I analyzed data obtained from CMS. The results for RQ2 showed there was a weak positive correlation between the dependent and independent variable, and was statistically significant at the 1% level, $r(546) = .164$, $p < .001$. Since the p-value of .000 was lower than the .05 significance level, the test was statistically significant. Therefore, we reject the null hypothesis. I established from the result that Cross-Functional Team Collaboration has an impact on Timely and Effective ED care when measuring QM score average (median) time patients spent in 548 national hospital EDs before leaving.

Limitations of the Study

There were some credibility issues in verifying the accuracy of the sampled data submitted by hospitals to the Hospital Quality Reporting (HQR) Secure Portal through the CMS Abstraction and Reporting Tool (CART). Ensuring that the information supplied to CMS was valid, reliable, and accurate could have been difficult. However, I trusted the validity of the information because of CMS' credibility. Another limitation was that I did not consider all patients who visited the ED in the study hospitals. Most of the measures of timely and effective care applied to only adult patients treated at hospitals participating in multiple quality programs (CMS, 2022). These include people with Medicare, Medicare managed care patients, and non-Medicare patients.

Recommendations

Based on the findings, the results imply that both Research Questions are conclusive and are statistically significant at the 1% level, $r(546) = .307, p < .001$. for RQ 1 and 1% level, $r(546) = .164, p < .001$ (RQ2). The D'amour et al. (2009) assessed the effectiveness of interprofessional collaboration among healthcare teams and found that cross-functional healthcare team collaboration plays a key factor in initiatives designed to increase the effectiveness of health services offered to patients. Opper et al. (2019) also identified how poor communication among healthcare teams can interfere with timely, effective, and coordinated hospital ED Care. Thus, this study recommends that the management of hospitals EDs should support and promote multi-disciplinary team collaboration for enhancing timely and effective ED care. I also advise hospital administrators and managers to support teams to work collaboratively with a common purpose of providing effective healthcare to patients.

Implications for Professional Practice and Social Change

The empirical implication of this study implies that both Research Questions were conclusive and statistically significant at the 1% level, $r(546) = .307, p < .001$. for RQ 1 and 1% level, $r(546) = .164, p < .001$ (RQ2). The key findings revealed that there was statistical correlation between Cross-Functional Team Collaboration and Timely and Effective ED care when measuring QM Score for the percentage of patients who left the emergency department before being seen, and QM Score Average (median) time patients spent in the emergency department before leaving from the visit. This research has implications for healthcare administrators and health providers because it will create

awareness for healthcare administrators to create and support policies that enhance communication and inter-disciplinary collaboration. The Emergency Department (ED) benefits the community by serving as a resource for the ill and injured patients twenty-four hours a day, 7 days a week. The Accreditation Council for Graduate Medical Education (ACGME) (2021) requires employees to collaborate as part of the Common Program Requirements because the ED is a place where all specialties in healthcare convene and work as a team to provide care to patients (ACGME, 2021).

In the study conducted by Matzke et al. (2021), they found that seamless communication and coordinated teamwork is paramount in high stakes clinical practice settings, such as the ED to prevent medical errors and ensure high quality patient care delivery. Grover et al. (2017) also found that building a resilient team inclusive of strong leadership and communication skills is essential to being able to withstand the challenging demands of the ED.

Conclusion

By testing the correlation between Cross-Functional Team Collaboration and Timely and Effective ED care, I established that a correlation exists between Cross-Functional Team Collaboration and Timely and Effective ED care when measuring the QM Score for the percentage of patients who left 548 national hospital EDs before being seen against the percentage of all individuals who signed into an emergency department between 2020-2021 (RQ1). For RQ2, the impact of cross-functional team collaboration on timely and effective ED care when measuring QM Score Average (median) time patients spent in 548 national hospital EDs from the time they arrived before the left from

the visit between 2020-2021 was established. Communication among healthcare providers is affected by human factors, such as interprofessional relations. This research shows how the multi-disciplinary healthcare team members can communicate and collaborate for enhanced team performance in the ED. Researchers supported that multi-disciplinary team collaboration and communication improves care delivery in general (Matzke et al., 2021). This study findings provide a framework to hospital ED leaders and administrators on the need to support and explore cross-functional team collaboration for enhancing timely and effective ED care.

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