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Strategies to Increase Emergency Department Patient Flow

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This is to certify that the doctoral study by

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Abstract

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BA, The Ohio State University

MBA, Franklin University

Doctoral Study Submitted in Partial Fulfillment

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Doctor of Business Administration

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Abstract

Overcrowding in emergency departments (EDs) is a systemic issue, resulting in inefficiencies affecting patient care quality. Hospital leaders struggle with reducing bottlenecks in EDs and providing a better patient care experience. Grounded in the general systems theory, the purpose of this qualitative single case study was to explore strategies used to reduce inefficiencies in EDs. The participants included five directors, administrators, and clinical managers from a hospital ED in Idaho Falls, Idaho, who successfully used strategies to reduce inefficiencies in EDs. Data were analyzed from semistructured interviews and a review of organization documents and artifacts following Yin's five-step data analysis process. Three themes emerged: communication, triage and workflow, and staffing. A key recommendation for healthcare leaders is communicating, sharing information, and increasing collaboration between clinical staff and patients. The implications for positive social change include the potential to improve efficiencies in EDs, which could potentially benefit the care of citizens of local communities.

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Dedication

I give thanks and glory to God who helped maintained and preserve my physical and mental health. I dedicated this study to my late mother, Julia Mae Williams, who helped me to become this incredible strong and determined person.

Acknowledgments

I would like to thank my late mother, Julia Mae Williams, who taught me that persistence and determination are the key ingredients to success. My mother taught me to believe and love myself and never fall short of believing in my dreams and being the best of everything. I would also like to acknowledge my sister, Gala Scott-Walker who was my emotional support and cheerleader through this entire process. Special thanks to my Department Chair, Dr. Roger Mayer, who believed in me and always offered words of encouragement by telling me "We will get through this." Additional thanks to my success coaches, Sarah Hendrickson and Jill Kaspszak. I owe a debt of gratitude to my second committee member, Dr. John Hannon and my URR, Dr. Janie Hall.

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Section 1: Foundation of the Study

Emergency departments (EDs) within hospitals are a critical source of U.S.-provided health care. EDs account for half of the medical care delivered to patients with acute medical problems in the United States (Sharp & Fendrick, 2018). Non-urgent encounters represent 3% of the tens of millions of ED visits per year (Sharp & Fendrick, 2018). The role of the physicians and nurses in the ED is to assure that patients receive the highest level of care, resulting in positive outcomes, but inefficiencies have plagued EDs. Inefficiencies in the ED affect the patient flow, timeliness of treatment, and hospital profitability (P. McKenna et al., 2019). The ED is designed to treat patients in an acute or life-threatening situation in an outpatient setting. Unfortunately, many patients presenting themselves for medical treatment in the ED do not have acute care issues. Inefficiencies in the ED directly affect inpatient revenue because patients occupying ED beds for longer periods should be admitted as an inpatient status (Clark et al., 2014). The ED is the primary feeder for inpatient admissions (P. Mckenna et al., 2019). It is critical for directors, administrators, and clinical managers to develop strategies to increase the efficiency of the ED.

Background of the Study

EDs are a high-cost and inefficient means of providing care (P. McKenna et al., 2019). Patients continually use the ED for non-emergent medical situations that could potentially delay the treatment of patients who are more critically ill. The Emergency Medical Treatment and Labor Act (EMTALA) is an additional constraint to patient flow. EMTALA requires hospitals to thoroughly assess every patient that boards in the ED,

regardless of their medical condition or ability to pay (R. McKenna et al., 2018). To comply with EMTALA regulations, hospital care providers cannot deny treatment to patients entering the ED (P. McKenna et al., 2019). Directors, administrators, and clinical managers are required to follow federal regulations under this provision.

Problem Statement

ED overcrowding is a systemic issue and has resulted in inefficiencies affecting the standard of care (Habib & Khan, 2017). Hossam (2018) determined that over 32% of ED patients waited over 6 hours to be seen by clinicians, and around 52% of the time waiting was wasted wait time. The general business problem is uncontrolled ED inefficiencies. The specific business problem was that some directors, administrators, and clinical managers lack strategies to reduce inefficiencies in an ED.

Purpose Statement

The purpose of this qualitative single case study was to explore strategies directors, administrators, and clinical managers used to reduce inefficiencies in an ED. The population for this study included five directors, administrators, and clinical managers from a hospital ED in Idaho Falls, Idaho, who successfully used strategies to reduce inefficiencies in an ED. The contribution to social change may be through reduced inefficiencies in an ED, which will benefit the operation of EDs for hospitals and improve ED patient care for local communities.

Nature of the Study

Patten and Newhart (2018) outlined three research methods, including qualitative, quantitative, and mixed methods. Researchers must select the method that best facilitates

forming research objectives and collecting data (Ray, 2015; Yin, 2018). Researchers use a quantitative method to test a specific hypothesis by examining the relationship among variables through statistical analysis (Green & Salkind, 2016). Qualitative researchers gather and analyze data from the respondents' open-ended questions and identify major and minor themes (Patten & Newhart, 2018). Researchers use a mixed method to address a research question using quantitative and qualitative methods (Bernard, 2017). The purpose of my study was to explore a phenomenon, not measure the relationship among data, so I rejected both quantitative and mixed methods. A researcher will utilize a qualitative method to gather and analyze data (Yin, 2018). Therefore, a qualitative method was appropriate to address my research question.

Available qualitative research designs include phenomenology, ethnography, and case study (Bernard, 2017). Researchers using a phenomenological design collects data on the *lived experiences* of participants (Moustakas, 1994). Ethnographic researchers focus on an extended cultural examination and derivation of a group of people (Marshall & Rossman, 2016). Phenomenology and ethnography designs were not consistent with the purpose of my study because I did not intent to explore the lived experiences or culture of participants. Researchers using a case study design explores a *bounded system* using multiple data sources or collection techniques (Yin, 2018). A single case study is appropriate when the researcher is interested in a robust, holistic understanding of a single unit (Gaya & Smith, 2016). A single case study design was appropriate to address my research question because my goal was to gain a holistic understanding of a single

unit. Through a single case study, I explored strategies healthcare leaders use to reduce cost and increase patient flow in an ED.

Research Question

What strategies do some directors, administrators, and clinical managers lack to reduce inefficiencies in an ED?

Interview Questions

1. What strategies do you use to reduce inefficiencies in the ED?
2. What are some examples of inefficiencies in an ED?
3. What were the barriers to implementing strategies to reduce inefficiencies?
4. How did you overcome the challenges of introducing new efficiency strategies in the ED?
5. How did the hospital benefit from a reduction in inefficiencies in the ED?
6. How do you maintain EMTALA compliance while keeping an efficient patient flow?
7. What strategies do you use to reduce costs in the ED?
8. What additional information might you provide regarding strategies healthcare leaders use to reduce inefficiencies in an ED?

Conceptual Framework

The conceptual framework for my qualitative case study was the general systems approach as developed by Bertalanffy (1928). According to Bertalanffy (1972), organizations, workflows, and problems are living organisms. Bertalanffy believed a system is a complete and efficient operation that depends on the inner working and

collaboration of several parts working together. Additionally, Bertalanffy believed a hierarchy resides within a system and should be examined at each level. Bertalanffy's premise centered on every organism is part of a system, and understanding a system is rooted in exploring the parts and their relationship to that system (Bertalanffy, 1972). As a researcher, I used the general systems theory to help understand complex problems and phenomena. The general systems theory was an appropriate framework for my study because workflow processes potentially impede patient care when the dependency on ancillary departments within the hospital system has limited staff to render patient required services throughout the ED process.

Swanson et al. (2012) stated that in a systematic review of healthcare complexity theory, the United States, healthcare delivery is comprised of a multilayered, complex interrelationship between those who receive, provide, and finance the payment of services. Healthcare researchers contend healthcare quality taxonomy fails to adequately describe the U.S. healthcare system (Swanson et al., 2012). Healthcare managers seek an understanding of how to use the information for sustainable innovation. Clinical healthcare managers need to avoid a breakdown in quality with improved access for patients. I used general systems theory to add value to my study as a conceptual framework for understanding any system's relationships. Essentially the framework for system thinking is to seek interrelationships that show patterns. Advantages of using the system thinking approach include efficient management of complex situations and uncertainty when there is no simple situation exists (Swanson et al., 2012).

Operational Definitions

Accountable care organizations is a network of doctors and hospitals sharing financial and medical responsibility for providing coordinated care to patients (Cash, 2015).

Emergency department (ED): An ED is a facility that provides emergency care in an acute environment, such as a hospital (Sharp & Fendrick, 2018).

Inpatient: An inpatient, as defined by Medicare, is a patient who is formally admitted into the hospital by a doctor's order (Center for Medicare and Medicaid Services [CMS], 2020).

Length of stay (LOS): LOS is a measure of time of how long a patient remains hospitalized (Asha & Ajamu, 2014).

Outpatient: An outpatient is a patient who receives medical treatment without a doctor's order for hospitalization (CMS, 2020).

Primary care physician (PCP): The PCP is responsible for the patient's care throughout the care continuum (Loeb et al., 2015).

Throughput: Throughput is a measure of the number patients and time between triage and determining the patients' final outcome (Feizi et al., 2022).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are concepts that the researcher believes to be true but are not verifiable (Schoenung & Dikova, 2016). I identified two assumptions about data collection and analysis. The first assumption was that all participants in this study

provided comprehensive, up-to-date, and truthful answers to interview questions. A second assumption was that participants have successfully implemented innovative programs within their organizations.

Limitations

Limitations refer to the weaknesses or shortcomings of research studies (Marshall & Rossman, 2016). There were two limitations to this study. The first limitation was that participants may not always express best practices. The second limitation was that future regulation changes could impact the study.

Delimitations

Delimitations are constraints that researchers control in the research process (Marshall & Rossman, 2016). Researchers use delimitations to set boundaries within the research to create a central focus (Merriam, 2014). The delimitations of this study included (a) sample size, (b) geographical location, and (c) healthcare provided only in a hospital facility. This study on healthcare accessibility was limited to one hospital in Idaho Falls, Idaho. This geographical area included interviews with a limited number of participants in a single hospital.

Significance of the Study

Contribution to Business Practice

The findings of this study may be of value to healthcare business leaders. Insurance payers may be able to save money by not absorbing the high-level expenses to treat patients in the ED. Directors, administrators, and clinical managers could potentially find value in search of proven strategies to reduce inefficiencies in an ED by exploring

the issues surrounding ED boarding and the system of input and output. Directors, administrators, and clinical managers may develop additional strategies that could result in a better lean ED system. Directors, administrators, and clinical managers could implement new and effective strategies to apply to their own hospital's ED environment. They may also acquire the necessary knowledge to reduce ED utilization and improve quality of care while broadening access to healthcare services.

Implications for Social Change

Society may benefit from new ED efficiencies that improve the quality of care provided. The results from this qualitative study may allow a comprehensive exploration of patient flow in the ED, including the results of patient overcrowding. This study's results might impact social change by improving access and quality healthcare to local communities.

Review of Professional and Academic Literature

A literature review (a) builds the conceptual framework, (b) establishes a bibliography of sources, (c) evaluates results, (d) identifies contribution to the research, and (e) supports the topic (De Villiers et al., 2019). My literature review aims to compare, contrast, and extrapolate information from various sources related to patient flow in the ED. Therefore, I reviewed the literature as it related to patient flow in the ED.

The primary source of the literature reflected in the study was peer-reviewed journals. My search included the following key terms: *patient flow logistics*, *Patient Protection and Affordable Care Act (ACA)*, *EMTALA, inpatient flow management*, *patient flow in the emergency department*, *overcrowding, and throughput*. Furthermore, a

database search included the following repositories: MEDLINE, ProQuest, Sage Publications, Business Source Complete, the Open Library, including my local public library.

I begin the literature review with a discussion of my conceptual framework. I also include a discussion of alternative theories. Also, I provided a review of professional and academic literature related to the U.S. healthcare system, the structure of EDs in the healthcare system, and barriers to healthcare. The literature review structure supported my goal of reviewing, contrasting, and comparing literature related to my research question.

Conceptual Framework: Systems Theory

A researcher identifies a conceptual framework to explore a research question. To support the healthcare system's complexity, I chose the systems theory, as developed by Bertalanffy (1928; 1972), as my conceptual framework. The focus of general system(s) theory included the system structure and how it functions in terms of inputs, throughputs, and outputs. The core concepts of the general systems theory included (a) the whole system is more than the sum of parts of the system, (b) the system can be open, closed, or semipermeable to the environment, and (c) feedback is the mediator between system behavior, goals, and performance (Swanson et al., 2012). The use of systems thinking for problem-solving in the healthcare delivery system is a paradigm shift from conventional problem-framing approaches (Williams, 2015). Given the complexity of managing the patient flow of an ED, the systems theory is an appropriate framework.

The systems theory allows a researcher to explore different aspects of a complex problem. A systems theory approach has allowed researchers to understand the behavior of various interrelated processes from a system-wide perspective (Hughes et al., 2015; Paina & Peters, 2012). According to Marchal et al. (2012), researchers start with a conceptual framework to examine how variables relate to one another. In this section, I provide a review of the development of the framework and the application to my study.

Historical Development of Systems Theory

The intent of the development of a general systems theory as developed by Bertalanffy (1928; 1972) was to establish a unifying theory to be used by multiple disciplines. Hammond (2002) identified several goals of the theory development, including investigating concepts and laws from different disciples and promoting the unity of science. The lack of structure allowed various researchers to expand the theory to other disciplines (Adams et al., 2013). Adams et al. (2013) identified significant classifications that emerged from the systems theory, including living systems theory, mathematical systems theory, social systems theory, and philosophical systems theory. Each of these classifications helps frame the conceptual framework of systems theory to my study.

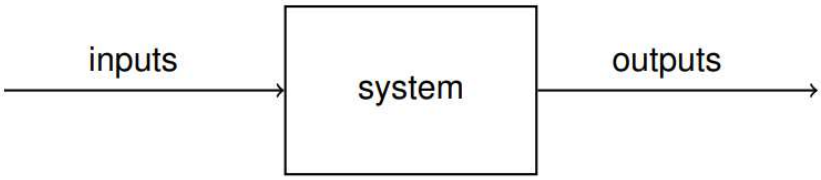
Systems include elements of interconnectivity found in biological and social systems. Miller (1978) framed the living systems theory to define how systems work, maintain themselves, and develop over time. Miller included a hierarchy structure including (a) cells, (b) organs, (c) organisms, (d) groups, (e) organizations, (f) communities, (g) societies, and (h) supranational systems where each level has a higher

level of complexity as compared to the one below. Each level interacts to produce complex behavior (Forrest, 2014). Living systems include structures and processes that relate at various levels to accomplish a goal (Duncan, 1972). The framework of living systems helps explain complex problems identified in this study related to ED patient flow.

Another classification of systems theory identified by Adams et al. (2013) is mathematical systems theory. Mesarovic (1964) described systems from the perspective of input-output or goal-seeking. Researchers use the mathematical modeling system to develop the interdependencies in a complex system (Miller, 1978). Awad (2017) applied the mathematical systems theory to develop a model explaining the complex systems in various settings, including hospital admissions. The input-output model (see Figure 1) can be applied to process flows fund in business, including the patient flow of an ED. In this model, the inputs and outputs are patients, and the system is the patient care and processing provided in the ED.

Figure 1

Input-Output System



Systems Theory Framework

A framework is a tool that helps clarify a concept and point to other concepts leading to a better understanding of underlying mechanisms. Marchal et al. (2012)

suggested that a theory-driven approach helps. Well-functioning health care systems facilitate good health with the efficient use of available resources (Swanson et al.,2012). Effective health care systems also enable responsiveness to legitimate expectations of citizens and fairness of financing (Devlin et al., 2016). A theory-driven evaluation focuses not only on the implementation of the intervention and its effectiveness but also on the causal mechanisms. Using a theoretical framework allows a researcher to understand the problems better and identify solutions.

The systems theory is an appropriate framework for understanding complex problems. Leaders use a systems approach to take a comprehensive approach to complex systems and focus on the interactions between entities and their environment (Squires et al., 2016). When leaders consider one aspect of a system in isolation, there may be unintended consequences, making a problem worse. A systems approach is likely to be appropriate for modeling these dynamically complex public health systems; the theory is yet to be standard practice for evaluating complex interventions (Squires et al., 2016). In contrast, a complex system consists of large populations of interacting agents that form a dynamic network, displaying emergence and self-organization.

Systems Theory and Health Care

Health care must adapt to changes in the internal and external environment. The organization of health systems is considered an operational and management problem and less a domain for research (Marchal et al., 2012). Some managers of healthcare systems globally recognize the need to adapt to changes in population demographics and increased rates of chronic diseases (Devlin et al., 2016). Interactive, person-centered

digital tools and services offer a vehicle to promote a more citizen-led, self-care, and preventative health and well-being agenda (Devlin et al., 2016). According to Swanson et al. (2012), healthcare systems play a crucial role in improving the health of diverse populations.

When community leaders develop a quality health care system, community members benefit. Several factors influence how a well-run efficient health care system can help health care leaders achieve better patient health (Swanson et al., 2012). There are factors that include a capacity for both individuals and institutions within a health care system, such as the continuity of stewardship and the ability to seize opportunities (M. Porter et al., 2013). Current approaches for public health economic modeling do not address all the factors. Leaders must consider processes when analyzing the complexity of a healthcare system to capture relevant aspects within a health care model (Squires et al., 2016).

Furthermore, an increase in patient care efficiency could potentially decrease waste and costs, as well as improve quality. Sturmberg et al. (2014) stated that within the system's thinking, there are implications that define the relationship between the physician and patient. A second thought is that physicians often think about the person and their illness in addition to the fact that physicians accept the concept of unique multilevel non-linear properties of living systems. Sturmberg et al. stated the system has the capacity to act independently and interconnected.

In a political decision-making model with more significant uncertainty and complexity, the actors will negotiate based on their agendas and goals, which can result

in conflicting decisions (Simon, 1997). Actors in a political decision-making model sometimes act freely and do not seek the approval of others (Simon, 1997). Political decision-makers in the public sector are guided towards decisions driven by power and influence, choosing alternatives that best serve the existing problem rather than considering the bigger picture or long-term consequences (Walter et al., 2012). Frey et al. (2013) cited the significant role that political climate plays in political decision making, validating Simon's (1997) four specific conditions that can influence decisions: (a) complex policies, (b) hierarchy of organizational structure, (c) the public stakeholders' influence, and (d) the unstable and unpredictable nature of the decision maker's power and authority.

Regardless of which model is followed, researchers utilizing decision-making theory identify five sequential steps for decisions: (a) identification of a problem and opportunity; (b) establish objectives; (c) collect data to inform alternatives; (d) select the best option based on an assessment of alternatives; and (e) execute the decision and assess its effectiveness (Simon, 1960, 1997). Private sector decision-makers in an administrative model may have motivations rooted in market forces, requiring more time spent on analysis and assessing available opportunities (Kivleniece & Quelin, 2012). A decision-maker following a classical model with fewer outside influences and actors will make assumptions at each of these stages, with more latitude to decide without analyzing political or other terrains (Thiel et al., 2012).

In healthcare, private sector institutions are different from the public-sector counterparts and thus employ different decision-making criteria. One study shows that

public sector organizations make decisions based on problems, whereas private sector institutions are primed to base their decisions on opportunities (Kuipers et al., 2014). Private sector leaders are more likely to root their decisions in analysis, while public sector organizational leaders are more apt to make decisions based on bargaining (Kivleniece & Quelin, 2012). For healthcare leaders assessing ED flow, their decision-making processes and ability will hinge mainly on the type of institution they lead (public versus private) and their own political climate.

Alternative Theories

By its very nature, the ED operates in a complex environment in which many actors have a wide variety of varied, sometimes conflicting goals and priorities. As a result, I consider complex adaptive systems theory and complexity theory to support my study, as both theories have elements that can help address the ED environment. In this section, I provide an overview of the two alternative theories.

Complex Adaptive Systems

Mallick (2016). suggested that when studying complex adaptive systems, researchers should ask a set of questions including (a) What are the components that make up a complex system?; (b) What are the properties that are an integral part of a complex system?; (c) What is the direct or indirect relationship between the elements in a complex system; (d) How do those elements evolve and move into a state of equilibrium? Specifically, the emergent behavior arises from the competition and cooperation among the elements, which act in parallel. The behavior of a complex system differs from the behavior of its isolated elements; instead, behavior emerges from the interactions

between isolated elements (Romero & Ruiz, 2013). A complex system is adaptive if the variables, as well as the system, strive to reach an equilibrium (Mallick, 2016).

Complex adaptive systems theory originated from earlier work on the scientific framework that examined and explained how agents adopt rules as they interact within a sensitive environment (Marion, 1999). Buckley (1967) described complex adaptive systems theory as hinging on the communication of information among agents, focusing on an organization's evolving parameters. Similarly, complex adaptive systems theory frames the relationships among decision-making agents in uncertain scenarios, particularly among business and management (Reiman et al., 2015).

Complex adaptive systems theory is characterized by continuing self-organization. A complex adaptive system should have the following characteristics: (a) be open in a state far from equilibrium, with ill-defined boundaries, (b) be sensitive to initial conditions, and (c) involve a large number of non-linear interactions and multiple feedback loops (Sturmberg et al., 2014). The dynamics of isolated elements are functions of both positive and negative feedback loops. Uncertainty and limited predictability are inherent consequences of these types of systems. In complex adaptive systems, managers not only interact with the environment but also learn autonomously from their experience and modify their behaviors to adapt to external changes.

The managers in such systems are adaptive if the consequences of their actions can lead to a specific value (e.g., performance, utility, payoff and fitness), causing their behavior is geared to increase this value over a period (Romero & Ruiz, 2013). The complex adaptive systems theory provided a contextual foundation for my study.

Complex adaptive systems phenomena provides a framework for why a small stimulus in a health sector can create significant or rapid change or why useful inputs and programs may lead to modest change or unintended consequences (Paina & Peters, 2012).

In an organization, people have the tendency to influence the type of changes and subsequently examine how potential changes may work in context with each organization while being cognizant of the organization's inherent complexity (Lawrence, 2015). Lawrence (2015) recommended that all organizations should be regarded as complex to protect against overlooking essential behaviors. Higgs and Rowland (2005) recommended applying an *emergent* approach, no matter the organization or scenario.

Decision-makers who are part of a complex adaptive systems theory should also closely monitor the outcomes that are the result of interactions with various agents, such as monitoring, and can identify emerging patterns and convergences enabling new systems to be enacted (Reiman et al., 2015). Researchers use this theory to examine and explain how rational individuals behave when faced with risk and uncertainty and are the framework to determine how leaders base their choices on various logical, rational, or optimal factors (Barnard, 1938). Decision-making theory seeks to use predetermined or distinct situations to make assumptions about potential courses of action, alternatives, outcomes, and their consequences (Betsch & Haberstroh, 2014). To effectively make decisions, leaders must attempt to use all available information to determine the appropriateness of possible alternatives, as well as predicted outcomes (Walter et al., 2012).

Additionally, there are three models that are part of decision making suggested by Simon (1960, 1997): (a) a classical decision-making model, (b) an administrative decision-making model, and (c) a political decision model. Within a classical decision-making model, Simon (1960, 1997) identified a process that includes goals, clear objectives, rationale, and considering all possible alternatives. Classical decision theory assumes that leaders gather relevant information before then rationally choosing the best possible alternative (Betsch & Haberstroh, 2014). Thus, actors must carefully consider the potential outcomes and consequences of each alternative action and strive to determine which action is best suited for the situation at hand (Walter et al., 2012). This process is ongoing throughout a classical decision model, as decision-makers continuously evaluate and reevaluate the alternatives as information becomes more available (Betsch & Haberstroh, 2014).

In contrast, in an administrative decision-making model, goals are not clear, and this model does not always employ a rational process, and there are boundaries that limit the possible alternatives and sway the decision-making process. In administrative situations, leaders are more constrained by resources or expectations. Simon (1997) stated the administrative model is widely used in both public and private sector scenarios in which a leader must appeal to a board, commission, or other restrictive, bureaucratic environment to which they are accountable (Jurisch et al., 2013; Thiel et al., 2012). Kivleniece and Quelin (2012) explored this contrast in the public and private sectors, finding that public sector actors are more likely to bargain, whereas private sector leaders are more apt to analysis-based decisions.

Complexity Theory

Within the literature of the past two decades, complexity theory challenges traditional management assumptions (Psychogios & Garev, 2012). Healthcare systems are complex; therefore, by not looking into the issues of complexity, efforts to achieve better outcomes are less favorable (Adam & de Savigny, 2012). Furthermore, understanding the inner workings of complexity theory requires a paradigm shift from a linear--reductionist approach to a more dynamic and holistic approach that focuses on the multifaceted and interconnected relationships among health system components, as well as the views, interests, and power of its different actors and stakeholders (Adam & de Savigny, 2012).

Lewin theorized that change is inevitable and is an excellent fit as it applies to healthcare. Lewin (2015) identified three stages in change theory, including the process of unfreezing, changing, and refreezing. Lewin stated change is identified during the unfreezing process. Therefore, leaders and managers should prepare employees for change. Force field analysis is part of this stage and is the step where the group should list the pros and cons of making the change. The second stage, changes, which is the implementation stage. Continuing education is provided to employees, and feedback is elicited to determine if the change plan needs to be altered.

Developing solutions for ER patient flow involves implementing a systems theory approach. Through a systems theory approach, leaders identify dependent and individual elements that perform in conjunction with the entire process (Pidd & Broadbent, 2015). Pidd and Broadbent (2015) included the culture within the organization as a factor that

influences the employees, process, and customer outcomes. Using a systems approach, ER leaders can improve the throughput and efficiency within the ER (White et al., 2014).

Researchers use the complex adaptive systems theory to explore the systematic interdependence as it adapts to a changing environment. By using the complex adaptive systems theory, researchers explore how agents make decisions on items that hinge on existing information within a structured network (Hammer et al., 2012). As interactions occur within and between systems, a change in the system is not always controlled (Lawrence, 2015).

Without this central controller, agents must rely on the information already contained within their existing environment (Hammer et al., 2012). Traditional theories change as discontinuous, episodic, and linear, while more contemporary theories view change as more continuous and emergent (Lawrence, 2015). Foster and Pyka (2014) noted that as scenarios co-evolve, agents on each side should evaluate how the existing systems come together in each situation. As equilibrium emerges, both agents will experience greater efficiency and effectiveness, empowering the agents to gain strength as they continue to evolve to fit within their scenarios, which in turn, may transform the situation itself (Foster & Pyka, 2014).

The U.S. Healthcare System

According to Barr (2016), the U.S. healthcare system is in a crisis, in part due to the rise in healthcare costs and the increasing number of uninsured patients. The U.S. health care per capita costs are approximately double in comparison to other industrialized countries and continues to have the highest costs in healthcare worldwide.

The projected costs will increase to 19.6% of the GDP by 2024 (Barr, 2016). The projects may change depending on the continuation of the ACA. President Barack Obama on March 23, 2010, signed this health care bill and Court on June 28, 2010, and it went into effect on January 1, 2014. The overall goal is to leverage a more significant proportion of national healthcare expenditures that are paid by the federal government. In the ACA framework, not everyone is eligible for healthcare insurance and will not be able to receive government subsidies, to reduce the costs of their insurance under the government's entitlement program. The benefits for the uninsured under the ACA required insurance companies to provide insurance coverage at an affordable rate in addition to the states expanding their eligibility requirements to provide coverage to a broader group. Therefore, thirty-two states decided to expand eligibility and extend coverage to other low-income populations who otherwise would not have been entitled to Medicaid (Andrews, 2014).

With the passage of the ACA, most Americans have greater access, but the shortage of PCP's in the United States needs to be examined (Lathrop & Hodnicki, 2014). The ACA addressed the delivery of healthcare and the obligation of the individual states, the U.S. Department of Health and Human Services (HHS), insurance companies, medical providers, and individuals, being involved in the healthcare insurance process (Fontugne, 2014). The ACA also contains other issues, such as cost containment. There seems to be a broad consensus that healthcare reform will be a significant factor in reducing federal healthcare expenditures. According to Barr (2016), there are fewer people who believe the ACA is not a long-term goal of constraining overall health care

costs in the United States (Barr, 2016). In fact, the healthcare forecast may lead to inadequate access to healthcare, with many people relying on the hospital ED to address the healthcare needs of the patients.

The ED in U.S. Healthcare

Patient visits to EDs have increased since the passage of the ACA. Boerner (2016) noted that an increase in ED visits occurred because of an increase in insured patients seeking care. In addition, these newly insured patients with pre-existing conditions needing a higher level of care were going to the ED for patient care (Boerner, 2016). These visits are expensive and unsustainable over time. Navratil-Strawn et al. (2014) found that approximately one-third of ED visits are not medically necessary, and those services in the ED could occur in a primary physician typesetting. Navratil-Strawn et al. stated the Institute of Medicine (IOM) issued a report stating costs in the ED for a minor issue is estimated to be between two to five times higher than the same type of treatment provided in an office visit encounter. Patients who also become frequent users of the ED comprise 4.5% to 8% of all ED patients and makeup 21% to 28% of all visits (Navratil-Strawn et al., 2014).

Greenwald et al. (2016) provided information on a study conducted comparing the admission rates of patients under and over 65years of age. The outcome of the study showed a significant number of patients in the ED are over the age of 65 and admitted from the ED at a far greater rate than patients under the age of 65. The information gathered from the study shows the ED is the primary means of inpatients admissions (Greenwald et al., 2016). According to Hsia et al. (2017), the residents in the state of

California were seeking care in the ED, which is not a service that they can receive in other parts of the healthcare system. In fact, minorities, older and lower-income patients, including patients with Medicaid, are most likely to utilize the ED (Hsia et al., 2017).

Medford-Davis et al. (2018) determined that a high number of duplicate ED visits occur. They concluded that up to 20% of patients seen initially in a public ED had visited another ED for the same complaint. Medford-Davis et al. collected data from 143 patients at a Texas hospital to determine if the patients who made duplicate visits were referred from the previous ED or if the patients referred themselves. About 94% of the patients seen in the ED were uninsured and 61% presented for fractures, and 27% of these patients were inpatient (Medford-Davis et al., 2018). In terms of self-ED referrals, 53% of the patients stated the staff at the initial ED referred them to the public ED, and 23% of the patients stated the physician from the initial ED made the referral.

Sharp and Fendrick (2018) added that there is a clear difference in the way providers and a patient define emergency care and is more evident among disadvantaged populations. This group experiences health care disparities and inequities that increase the level of distrust in the healthcare system. Research participants also indicate they prefer to establish a relationship and seek care from a PCP. However, difficulties in scheduling appointments to get health care increased ED and urgent care visits (Sharp & Fendrick, 2018).

Yarmohammadian et al. (2017) stated ED overcrowding is the result of an excessive number of patients who are waiting to be seen in the ED, the time it takes for triage assessment, or patients who are still in the ED and waiting to be discharged. This

issue becomes very frustrating to the ED staff and affects patient safety (Yarmohammadian et al., 2017). Increasing the resources in the ED will alleviate some of the issues of overcrowding if efforts were made to implement lean thinking, rapid assessment zones, redesigning the optimal pathways, and looking at putting into place 4-hour targets to decrease the L.O.S., (Yarmohammadian et al., 2017).

Routine visits to the ED have become part of the healthcare landscape with the increase in costs and a decrease in efficiency in the ED (Enard & Ganelin, 2013). According to the American College of Emergency Physicians (2014), high-impact initiatives may be underway to decrease overcrowding in the ED. Lui et al. (2013) studied a vertical flow, which is a concept of the evaluation and management of patients. The objective was to determine whether patients with a lower acuity would need to occupy a bed to a degree of a patient with higher acuity. (Lui et al., 2013). The purpose was also to evaluate if the high-turnover ED utility bed management program is effective in reducing crowding in the hospital and ambulance diversion.

Aside from that, the high-turnover ED utility bed intervention resulted in improved admission as well as lowered ED crowding. This process has improved efficiency, reduced ED length of stay and ambulance diversion hours. The ED and average waiting times resulted in a national waiting time of four hours (Madden et al., 2012). Statistics reflect that some ED visits are PCP related and often resolved in an office visit encounter (Enard & Ganelin, 2013). However, continued analysis is required to determine long-term effects on quality of care and patient care outcomes. Lee et al.

(2017) indicated that ED crowding also affects the quality of care and the inability of ED doctors to manage a patient's care.

There is also a higher risk of mortality and a high rate of admissions to the hospital (Lee et al., 2017). A three-basic approach would need to be developed similar to that of a demand-supply model. This approach should reduce medical care demands, increase resources, and make improvements in supply and demand (Lee et al., 2017). However, increasing beds would not be an option but, practical bed usage could be a more viable solution by implementing a 48-hour time limitation and looking at opportunities for early admissions (Lee et al., 2017).

The vast number of patients without a PCP or insurance to pay for healthcare insurance contributes significantly to ED overcrowding. The passage of the ACA in 2010 accelerated the shortage of PCPs. Over 10 years ago, 36 million Americans, which were 12% of the population, lack access to healthcare on a regular basis (Lui et al., 2013). The ED is the primary feeder and source of care for the growing population who do not have adequate access to care. With the shortage of PCPs around the country, there will not be enough physicians to meet the growing demand in the future.

According to the Association of American Medical College, by 2025, the United States will need 46,000 to 90,000 more physicians to meet patient demand, not including specialists (Whiteman, 2015). Aside from those facts, medical services in the ED incur the highest costs, as well as a loss of revenue for services rendered to patients who are uninsured. The unpredictability of patient flow in the ED compounds the problem of staffing the ED 24 hours a day, 365 days a year. Inefficiencies from other hospital

departments also affect the ED. Hospital leaders may benefit from the results of this study by identifying methods to increase the efficiency of an ED. Communities could experience a social impact by increasing the overall quality of patient care.

In general, high costs of services in the ED is one of the reasons why the United States has much higher health spending than other developed countries, whereas, within the United States, utilization explains why some areas spend more than others (Spiro et al., 2012). Thus, both prices and utilization increase the level of health care spending; Prices may also fuel utilization (Rosenbaum & Lamas, 2012). Prices are independent and an important driver of spending growth (Joynt et al., 2013; Spiro et al., 2012).

According to Hill et al. (2016), there were many reasons why various age groups and demographics utilize the ED. A study conducted shows patients of various ages, gender, and insurance types visited the ED for several reasons, and in a comparative analysis, Hill et al. shows a greater frequency of ED arrivals among those with public insurance versus private insurance, were much higher. The numbers included in the study shows18.5% of patients with public insurance as opposed to 7.5% of patients with private insurance showed up for treatment in the ED. Hill et al. were unable to determine if patients with private insurance are linked to the fact that providers are reimbursed more money for a privately insured patient visit.

Overcrowding in the ED has placed a real burden on hospitals throughout American cities, resulting in longer than usual wait times for patient care. When there all patients require inpatient admission, they may not always have a bed available and is boarded in the hallways or remain in the ED. Patients with actual emergencies may

remain in the ED until discharge and never reach the inpatient care units designed to specifically provide a more specialized level of care (Yarmohammadian et al., 2017).

A review of the literature from 1980-2018 shows how concern over ED overcrowding has continued to increase over the years. Today's ED is less reliable and potentially less safe than in previous eras. Today's physicians often lack the ability to onboard patients to inpatient status, hampered by regulations and other pressures. The severity of overcrowding in the ED in the 1980' is the current state of the ED in 2018. The types of patients who visit the ED are those who are uninsured, underinsured, Medicare, and Medicaid recipients.

Patient Flow in the ED

A large influx of patients flocking to the ED over the past 15 years has dramatically impacted the ED all over the world. It has slowed down workflow processes, and ED physicians are not able to admit their patients to the hospital in a timely manner. Whenever patients seek routine care in the ED, the increase in volume impacts wait times, the quality of time spent with the ED physician, and the level of care received.

The wait time in ancillary departments also increases the bottlenecks in the ED. These delays in processing laboratory and radiology orders can cause postponement of treatment (Ting, 2018). Another bottleneck issue occurs when physicians are waiting on test results and are not able to make an informed decision as to admit or discharge the patient. A backlog of patients in the ED creates a shortage of beds for new patients coming into the ED with a more acute issue. However, performance improvements in the

ED is a process improvement, which requires a systems theory approach (P. McKenna et al., 2019). Identifying over crowdedness in the ED involves implementing a systems theory approach and reviewing elements of the entire system.

Patients with one or more chronic and mostly preventable diseases spend more than 75% of all health care dollars (Chang, 2013). The rate of ED visits has increased in the United States (Gusmano et al., 2015), and EDs are providing treatment to the elderly at a much large number of the elderly and patients who are very ill (Skinner et al., 2014).

Healthcare costs have increased at double-digit rates for years. Consumer-driven healthcare seems to be the next evolutionary step for employers struggling with spiraling costs. The consumer-focused view of healthcare is the most current model that reflects healthcare trends (Creasy et al., 2012). This approach coupled with current plan offerings may be the first step in gaining control of a worrisome issue for most employers.

A concurrent approach is to emphasize prevention and education while encouraging employees to invest in their health. Streamlining healthcare costs will require reducing the need for care requires multiple strategies (Schoen et al., 2006). Mandating coverage for preventive services is a reasonable first step. Lastly, prudent managers should carefully consider all cost-reducing options, including modifying current plan offerings and incorporating different administrative methods for driving costs in the employer's and employee's favor (Creasy et al., 2012). Tang et al. (2014) described three interconnected phases of a patient stay in the ED: patient inflow (when patients are assessed and triaged), patient treatment (during which patients are stabilized and receive immediate care), and patient outflow (when patients are discharged, admitted

to an inpatient unit, or transferred to another facility). Tang et al. (2014) noted that while many studies have focused on inflow, the inefficient outflow is a more significant source of bottlenecks.

Whenever hospitals do not have the bed availability beds available for ED patients or beds for those requiring inpatient care, these patients wait longer and are often times boarded in the ED (Sharp & Fendrick, 2018). For example, in 2009, 78% of the patients waited in the hallways until an inpatient bed became available (Hing & Bhuiya, 2012). Since Medicare and other private payers will not pay hospitals the higher revenue unless the hospital has assigned the patient to a bed, hospitals must work to move patients to inpatient beds as efficiently as possible. Inpatient admissions are the primary revenue stream for most hospitals (Sharp & Fendrick, 2018).

Many EDs rely on a case management model to coordinate outflow with a wide variety of entities, both internal and external, including other hospital departments, nursing homes, social workers, insurance company representatives, and other physicians (Tang et al., 2014). Whenever a patient is sent as a direct admit to an inpatient unit, the House Supervisor must ensure that beds and staffs are available, as well as coordinating with the admitting staff to ensure they have transferred the patient in the computer system to the appropriate hospital floor. The transfer of patients to other hospital facilities can further complicate the process and increase the patient movement for the in-house supervisor, who may be coordinating multiple discharges in each time frame. This results in bottlenecks, and a patient's stay may be extending, preventing other, more emergent patients from accessing beds and staff (Tang et al., 2014).

EDs used various strategies to decrease the wait times for incoming patients. Lin et al. (2014) suggested that using the ED as a holding bay for inpatient transfers strains hospital resources. Using queuing theory, Lin et al. (2014) analyzed the optimal mix of ED and inpatient beds, determining that carrying additional inpatient capacity is a better use of resources than expanding ED capacity. Another would be fast- track models, which will also reduce the number of "access blocks" in an ED. Several studies have investigated how visual analytics and other methodologies can help hospitals better understand and optimize patient flow through their EDs.

Additionally, hospitals are increasingly using data mining to access the growing volume of healthcare data (both in types and quantities) and applying a visual aide to synthesize the information and gain insights into complex situations (Fitzgerald & Dadich, 2009). Tang et al. (2014) found that visual analytics can better facilitate and coordinate these patient outflows, as well as giving hospital leadership a low-stakes way to test and assess several potential scenarios. Tang et al. (2014) suggested visual analytics could help facilitate and coordinate the crucial patient outflows by giving case managers a clear picture of the needs of the patient. Additionally, organizational factors increase the length of stay (LOS) in the ED. As a component of the ED throughput, patients perceive the ED as a measure of healthcare quality (Bashkin et al., 2015). Over a three-month period, 105 patients were monitored from the time they entered the ED until the patients were discharged or admitted to the hospital ward. An Ishikawa causal diagram was used to explore various latent organizational factors that may prolong the waiting time in the ED (Bashkin et al., 2015). The analysis showed that a high LOS might lead to

increases in expenditures and implications for patient safety. Simultaneously, specific organizational changes, improvement in communication, and time management may have more of a positive effect on bottlenecks in the ED. An interdisciplinary approach can be used to explore factors causing prolonged ED stay time (Bashkin et al., 2015).

In comparison, Sullivan et al. (2016) provided information on the ED compliance rule, which requires the EDs to control the patient flow in and out within 4 hours. Under the NEAT rule, the doctors must admit or discharge the patients. Retrospective studies in the larger hospitals in Brisbane, Melbourne, and Perth, clinical restructuring and designing an ED timeframe has reduced ED crowding, improved patient flows through the ED, and reduced hospital mortality (Sullivan et al., 2016). Thiel et al. (2012) also used visual analytics to visualize how patients flow through an ED, finding that patients are *batched* in groups rather than entering rooms as they become available. Thiel et al. noted that a three-step intake process (a logbook, registration, and then a formal triage process) could be consolidated into a single step, decreasing patient wait times and improving utilization while improving overall patient experience and satisfaction.

Fast-track systems may also improve patient flow through the ED. A fast-track system divides patients into two queues: the standard queue for high priority emergent patients with acute needs and a second queue for less urgent patients who require less urgent care (Lin et al., 2014). A study was conducted to determine the bottlenecks and issues with the ED system. The conclusion was the inability to move patients from the ED to an inpatient bed (Habib & Khan, 2017). The study consisted of 6,505 patients who stayed in the ED for more than 4 hours before being admitted or discharged. For

example, the lab would take anywhere from 4-6 hours to generate information on the lab results. Adopting a fast-track system in which a patient is quickly triaged and queued appropriately may reduce ED wait times by 0.3 to 1.0 hours, improving patient satisfaction while better-using resources (Lin et al., 2014).

For example, one urban academic medical center ED developed a Physician-Directed Queuing (PDQ) model to more effectively triage patients and better match available resources to the patients' needs (De Flitch et al., 2015). One year after implementing the PDQ model, the ED was managing more significant patient volumes more efficiently: average wait times dropped 83 percent to 12 minutes, door-to-provider time dropped by 62 percent, length of stay dropped by 23 percent, and the proportion of patients who left without being seen fell from 5.7 to 0.6 percent (De Flitch et al., 2015). Bordoloi and Beach (2007) utilized a queuing model to examine the most efficient use of staffing resources, comparing the relative wages of attending physicians to senior residents. With experience, attending physicians are sometimes- compensated more and can treat patients more effectively in a short period. Bordoloi and Beach found that to improve patient flow, EDs are best suited by staffing more senior residents during a shift, and fewer attending physicians, as doing so will allow more patients to be treated with shorter waiting times.

The systemic issues of ED overcrowding affect the quality of care and increase adverse patient events. Kaul et al. (2016) indicated that patients experiencing longer ED waiting times increase the risk of safety and the quality of care. The Joint Commission tracks sentinel events, such as treating the wrong patient for the wrong condition, wrong

medication, operating on the wrong site, amongst others. Kaul et al., 2016 said according to the Joint Commission, 50% of sentinel events occur in the ED, and approximately one-third of these issues are a direct result of overcrowding in the ED. Because of these conditions, patients express a higher level of dissatisfaction.

The issue with overcrowding in the ED has influenced the leadership to design the ED in a manner designed as a split flow and sub-waiting area model that would result in more efficient patient-centered care (Easter et al., 2015). There was a study conducted to determine the merit of an ED design and flow to optimize split-flow patient care systems that would be useful in reducing overcrowding in the ED. In this two-factor analysis study. There was an examination of the interaction of a 3-flow model, which comprises three types of patient flow split, by emergency severity index score, split by a physician, and no split (Easter et al.,2015). The goal is to design an ED with different categories, patients with a sub waiting area, no sub waiting, one-sub waiting, and two-sub waiting (Easter et al., 2015). The metrics included operational metrics, length of stay (LOS), room utilization, and patient-centered metrics, which is the door to provider time (D2P; Easter et al., 2015). Other points of interest were the number of patients who left without a doctor's examination.

A research study conducted by Mackinney et al. (2013) found that when patients have access to PCP's, there is a large decline in the number of routine visits to the ED. On the other hand, other research reflected there is a trend reflecting a large influx of patients are flocking to the ED because they perceive the seriousness of their medical condition to be more urgent than the perception of the PCP (Sharp & Fendrick, 2018).

Al-Refaie et al. (2014) wrote that Jordanian hospitals face serious issues that affect the delivery of timely and quality of care when there is overcrowding. According to this research team, there was a study conducted on using simulation and Data envelopment analysis (DEA). DEA is an efficient optimization procedure designed to improve process performance. It is a fractional mathematical programming technique to measure the relative efficiency of homogeneous decision-making units with multiple inputs and outputs using a single performance measure referred to as relative efficiency.

Al-Refaie et al. (2014) provided another model referred to as cellular manufacturing (CM), which is a workplace design system. In the CM model, the synchronization of equipment and workstations allows for a continuous and flawless movement. Al-Refaie et al. provided an account of the cellular service system (CSS). The nurses are part of a system as operators in this process, and the departments are referred to as machines. Simulations are useful in evaluating each nurse assignment, which is part of the decision-making unit and is part of a design that would improve performance and identify the bottlenecks. In the final analysis of the study, Al-Refaie et al. stated the mathematical model that calculates the optimal number of nurses and doctors necessary at a given time to provide care in the ED to address overcrowding. Henceforth, there are issues that continue to inflate the ED patient crisis. For example, Moskovitz and Ginsberg (2014) described a theory called the ED bounce back rate effect as patients who return to the ED within 30 days from the last ED discharge. The back bounce rate is as high as 26% in the United States. There is a correlation between back bounce rate of returns to an increase in morbidity and mortality among the elderly population (Moskovitz &

Ginsberg, 2014). The argument is that if patients had access to a PCP, it would reduce the bounce-back rate to the ED.

Another group of people compelled to utilize the ED is the homeless population, who has a growing need for health care services, and they frequently need access to health care due to their lifestyle, which subjects them to additional illnesses and diseases than other non-homeless societies. The results of a study show a higher utilization of care by this group. The study found that homeless individuals experienced a longer length of stay, higher report percentages of behavioral health issues, and were more likely to have return visits to the ER (Bharel, 2016). The ED utilization from this group also increases the costs to deliver healthcare services in this country.

Health care costs are partially due to inflation and population increases. The number of people receiving treatment for a specific illness and the cost of treating a specific illness impacts health care cost. Another cost variable is the advancement of medicine and the discovery of more high-tech treatments that have replaced outdated treatment methods. Barr (2016) stated the rising costs of treatment accounted for about 70% of growth in actual health care spending from 1980 to 2006. Healthcare spending has exceeded the economy's rate of growth by two percentage points per year (Holahan & McMorrow, 2012). Officials at the CMS (2020) stated that healthcare spending is projected to grow at an average rate of 5.6% annually within the next ten years and reach 5.7 trillion dollars by 2026(CMS.gov, 2017). The rate of healthcare spending will account for 20% of the gross domestic product (GDP) by the year 2025. Figueroa et al. (2017) stated that 75% of healthcare spending is for conditions that are preventable. The costs of

the high level of services in the ED only compound the problem. ED overcrowding and long waiting times most often will result in patients leaving without receiving care. Of course, many insurance companies will not pay the hospitals when patients in the ED and leave against medical advice (AMA). Patient satisfaction surveys also determine the amount of revenue a hospital will receive. In 2015, the Medicare Hospital Value-Based Purchasing program paid hospitals 1.4 billion dollars (Elliott et al., 2016), and 30% of the hospital's VBP total performance was based on the Hospital consumer assessment of healthcare providers and systems (HCAHPS), which measures the patient's experience (Elliott et al., 2016).

Mandavia et al. (2016) stated that 56% of the patient mix in the ED came from Medicaid patients, the group that the federal government insures, and 28% of the remaining influx was across other insurance payment types. The ACA also mandated small business employers to provide insurance benefits and that the uninsured be provided with an opportunity to purchase healthcare insurance at a reasonable cost. According to Barr (2016), the continued rise in healthcare costs is the most significant part of the GDP and, based on past expenditures, is a determining factor in the solvency of federal and state governments in the United States. Government entitlement programs, Medicaid, and Medicare also make up the vast majority of healthcare spending in this country (Rogers et al., 2016).

There are very few individuals who can afford to pay for their healthcare in the event there is a significant injury or illness (CMS, 2015). Therefore, the government cannot solve this problem alone or afford to provide unlimited benefits for all its citizens

without shifting the costs to future taxpayers (Sisko et al., 2014). With the readmission rates, patients bouncing back to the ED in a short time frame, and continuous overcrowding alone will impact the Medicare reimbursement to the hospital (Moskovitz & Ginsberg, 2014).

The lack of access to healthcare has created a national crisis and has placed a tremendous burden on the ED. Connecting these concepts reveals a responsibility to examine the inefficiencies of the U.S. healthcare system. There are too many loopholes in the healthcare system, which is responsible for a patient's inability to access traditional healthcare through a PCP. This study will aim to explore strategies that managers use to improve access to healthcare services for individuals who are underinsured or without insurance. As mentioned, access issues are due to a lack of access to a PCP for newly insured patients in states that expanded Medicaid under the ACA. Eligibility increased to include people who otherwise did not qualify for the government health insurance. Because of the inadequate number of PCP, patients end up going to ED for Medicare care; These Medicaid patients account for the largest group visiting the ED for non-urgent care (Gusmano et al., 2015).

An increasing amount of healthcare expenditures are spent on the less healthy elderly population as opposed to their counterparts who are healthier. The health status of the elderly is reported at 49% fair or poor, compared to 15% of the general adult population (Davis & Weeks, 2012). Such findings have important implications for addressing national healthcare spending because interventions targeting those people who

are in ill health could theoretically generate dramatic cost savings (Davis & Weeks, 2012; Thompson & Nichter, 2014).

The ability to formulate appropriate policies to reduce health spending growth requires understanding the primary factors driving growth. Reducing health spending is urgent, significantly if healthcare dollars decline over time (Davis & Weeks, 2012). Resolving any conflict of interest in the healthcare delivery system is a goal shared by all stakeholders (Phillips et al., 2014). Healthcare providers can also leverage different strategies related to efforts designed to control cost containment, and their perceived responsibilities as stewards of healthcare resources, in general, are increasingly relevant to recent pending and proposed policy reforms (Tilburt et al., 2013). In order to reach the goal of improving healthcare, there should be more involvement from the public and private sectors (Collier et al., 2019). The increasing costs of U.S. healthcare are due to fraud, waste, and abuse (Tilburt et al., 2013). Therefore physicians have been called upon to reduce waste and the higher utilization of resources.

One of the ways to slow the rate of healthcare expenditure is from the prevention of diseases, environmental, social, and behavioral health risks. The most immediate progress is likely to come downstream from innovations safely and compassionately lower health spending by reducing the cost of hospitalization for all patients. The targeted number should be 5% of individuals who incur half of health care expenditures in the United States (Milstein & Shortell, 2012). There are many opportunities available to reach this goal, such as preventing expensive health crises among medically fragile patients and helping patients in the late stages of serious illness avoid dying in a hospital

(Milstein & Shortell, 2012). Healthcare professionals should enhance patient flow through hospitals to lower the average fixed cost per hospitalization and reduce hospital readmissions (Milstein & Shortell, 2012). Another initiative to reduce healthcare expenditures is to transition pediatric to adult care and carve out a plan that includes early intervention to ensure that care is timely and provided at the right time.

The ACA also brought drastic changes to our healthcare system. The program provided health insurance to an additional 11 million uninsured people (Barr, 2016) and extended Medicaid coverage to over 10 million people who were not eligible prior to the passage of the ACA. However, not every State was able to extend its Medicaid program due to the lack of funding to provide coverage to young adults and other age groups (Webb et al., 2015). These individual states decided not to participate in the Medicaid expansion program and did not receive additional federal dollars to extend eligibility to those with incomes under the federal poverty line. Stakeholders and healthcare professionals utilized a broad range of other methods and tools to promote quality improvement. During the past decade, the development and implementation of quality indicators have been primarily driven by the arrival of computerized administrative and clinical databases and the desire to make performance data available publicly (Weiner et al., 2012).

PCP's who work for the Pioneer Accountable Care organization are incentivized by improving the quality of care in order to maintain compensation. However, they find there is a lack of patient engagement. Transforming the U.S. healthcare system involves the two elements of payment reform and patient engagement (Hibbard et al., 2015). The

group conducted a mixed-methods study to examine the results of PCP's salaries based on a compensation- based quality of care model. The group stated that PCPs are not happy with their salary being contingent on the quality-of-care efforts due to the fact, patients are not equally involved in their own outcome of their care. Hibbard et al. (2015) also stated that most PCP's find that a patient's behavior is the major obstacle that impacts the quality of care.

Frolkis (2013) stated that until reimbursement changes in favor of prevention, care coordination, and more efficient and evidence-based resource utilization, the U.S. healthcare system would remain a volume-driven system. The healthcare business must incorporate quality and safety, patient satisfaction, quality service, and efficient management of resources. There is a dual goal of reducing costs while increasing quality (Metcalf et al., 2018). Healthcare systems continually develop new strategies to increase quality while managing costs (Metcalf et al., 2018).

Barriers to Healthcare Access

Gallois et al. (2015) stated effective communication between healthcare professionals and patients improves patient satisfaction and adherence to treatment. Language barriers in the ED negatively affect patient satisfaction and level of care (Gallois et al., 2015). Cultural and language barriers create communication issues and misrepresentation of facts when patients are unable to communicate signs and symptoms effectively. There has been significant effort placed on how to remove financial barriers from those without insurance and look at cost-sharing medical expenses (Holahan &

McMorrow, 2012). Furthermore, besides financial barriers, patients also must contend with other obstacles to access, such as regulatory barriers (Myers & Sheehan, 2020).

Another access issue is the inability of healthcare professionals to communicate risk factors, treatment options, and discharge instruction. Language barriers also create delays in treatment, creating additional bottlenecks in the ED (Gallois et al., 2015). Francescutti and Rondeau (2005) stated another issue affecting the length of time for patient encounters in the ED is bed availability and access to medical technology. The ED may not always have adequate staffing in areas where specific specialized tests are necessary for the ED physician to rule out a medical condition.

Therefore, hospital leaders continue to see an influx of patients who enter the ED and require admission to the hospital and have observed the delay due to the availability of beds. According to the report from the Center for Disease Control (2017), 79.7% of adults who visited the ED did not have access to a PCP while. 48% of the patients stated their doctor's office had already closed. This problem increases the burden and demand on the ED departments throughout the country. Services in the ED are expensive, and the scheduling of tests to rule out certain medical conditions is not always necessary but a requirement as part of a medical assessment in the ED. These inefficiencies in the ED affect the overall financial performance of a hospital.

Achieving the triple purposes of quality, cost savings, and accessibility depends on implementing efficient integrators in healthcare systems (Katon & Unützer, 2013). Integrators are managers in healthcare organizations that can orchestrate various levers (e.g., incentives, coordination mechanisms, and information infrastructure) to support the

delivery of high-quality care to predefined populations (Denis & Forest, 2012). The future of healthcare in the United States depends on creating a system capable of delivering dramatically higher value and eliminating the rampant behavioral, clinical, and administrative waste within the current system (R. Porter & Tosto, 2012). Value is the fact of achieving high-quality outcomes with the highest efficiency at the lowest cost over time and across the continuum. Achieving higher value requires a significant philosophical, cultural, and operational change from a focus on volume and the treatment of sick patients. The system should concentrate on the active engagement of individuals, with the support of healthcare resources, to manage their health (R. Porter & Tosto, 2012).

Healthcare systems are under pressure to control the rising costs and to better adapt to evolving demands that will improve the quality and safety of care and the health of the communities (Denis & Forest, 2012; Gostin & Friedman, 2013). As costs continued to increase, there will be an increasing number of people in America who were left without health insurance as well as other access issues that prevented them from accessing care (Barr, 2016). Policymakers rely on two organizational resources, healthcare reform, and the use of organizational levers: potential development, team-based organizations, evidence-informed practices, to achieve specific policy goals (Denis & Forest, 2012). In both cases, organizational assets mobilize to create total healthcare companies, which can function as high- performing systems. The challenges confronting the development of complete healthcare companies are significant (Denis & Forest, 2012).

Current trends in the rising costs of healthcare are of concern and will remain an ongoing debate on public policy and the necessity to review any ongoing legislation. ACA has changed the landscape of our healthcare system, and there has been a substantial improvement in the overall assessment and quality of the government's Medicare insurance entitlement system (Barr, 2016). A paradigm shift has occurred in Medicare, which shifted from paying providers for patient volume to paying them for value and patient quality of care in addition to Medicare reviewing appropriate care for the conditions being treated (Barr, 2016). The ACA increased access to low-income people who otherwise did not qualify for Medicaid by allowing states to expand their eligibility requirements and allow dependent children to remain on their parent's plan until 26 (Barr, 2016). The passing of the ACA increased access to healthcare by allowing people to purchase insurance through healthcare exchanges.

These are some of the many ways the ACA addressed the broken issues in the U.S. healthcare system. The costs of healthcare have become cost prohibitive. Therefore, a new payment system, such as the Medicare Incentive payment system (MIPS) and bundling payments, may reinforce the value and not volume in payment reimbursements (Barr, 2016). Another consideration is cost containment, which is necessary for reducing costs in the ED and other settings.

Transition

Section 1 examines the study's purpose and goals, presenting the growing burden on EDs throughout the country, including how ED inefficiencies interfere with the quality of care outcomes, patient safety, and financial management. The problem

statement summarized the situation of increasing ED visits, while the purpose statement identified this qualitative single case study's goals. Section 1 also defines the nature of the study and the rationale for the research method, research design, interview questions, and population. I examined various conceptual frameworks and decided I would use the systems theory approach as the basis of my primary framework. Finally, in Section 1, I examined the research question in depth and provided a literature review with detailed information about patient flow in the ED and related topics. In Section 2, I established the study's purpose, describe my role as a researcher in the data collection process, examine ethical considerations, detail the research method and design, and explain the recruiting process. Section 2 will explain how the source of information in the study is complete, accurate, and reliable.

Section 2: The Project

In Section 2, I detail the mechanics and considerations of this qualitative single case study. In this section, I describe my role and the method I used as a researcher, including the study's design and the recruitment of the participants. In Section 2, I also provide strategies to increase the reliability and validity of the study. Finally, Section 3 of the study includes a presentation of the findings and how the results could affect social change and business practice

Purpose Statement

The purpose of this qualitative single case study was to explore why some directors, administrators, and clinical managers lacked strategies to reduce inefficiencies in an ED. The population for this study included five, administrators, or clinical managers from a hospital ED in Idaho Falls, Idaho, who have successfully used strategies to reduce inefficiencies in an ED. The contribution to social change may be through reduced inefficiencies in an ED, which will benefit the operation of EDs for hospitals and improve ED patient care for local communities.

Role of the Researcher

A qualitative researcher's role includes screening participants, conducting interviews, and collecting data before interpreting the data and drawing conclusions (Marshall & Rossman, 2016). In a qualitative study, the researcher is the primary collection instrument and facilitates the flow of information. A researcher must be aware of how they communicate with participants and what is going on in the research environment. Olin et al. (2015) indicated that researchers need to be knowledgeable about

the subject matter so that participants do not deviate from the research topic. I have over 20 years in the health care industry, which gives me an in-depth understanding of the research topic.

As I interacted with participants, I adhered to the principles of *The Belmont Report*, which consists of three basic principles, including beneficence, justice, and respect for persons (U.S. Department of Health & Human Services, 1979). *The Belmont Report* defined the boundaries between biomedical and behavioral research and the role of risk-benefit criteria in determining the appropriateness of research involving human subjects.

To mitigate personal bias, I utilized the tool bracketing to reject biases. Bracketing is a method used to establish legitimacy between the data collection and analysis of the participants' information (Sorsa et al., 2015). I remained non-judgmental and neutral and sought clarification on information collected to validate or conclude a response from the participant. Researchers must be very aware of personal biases and strive to minimize bias at every phase of the study so that it does not interfere with the researcher's ability to collect the information (Silver & Rivers, 2016). Therefore, I identified any personal biases that might interfere with the questions in advance as it relates to this research study. I made sure my thoughts and viewpoint did not reflect any opinions that might be embedded in the data collection process.

Castillo-Montoya (2016) defined four phases of an interview protocol framework. Researchers should first create an interview protocol matrix that serves to map the interview question to the research question to ensure proper alignment. Second,

researchers should reword and organize questions that are clear, precise, and conversational. Third, researchers should obtain feedback on the interview protocol. Finally, the researcher should develop a small sample of people who can help assimilate the interview process (Castillo-Montoya, 2016). As recommended by Castillo-Montoya, I used an interview protocol (see Appendix A). In general, researchers use the interview protocol to conduct similar research (Houghton et al., 2016; McCrae & Purssell, 2016). Therefore, I developed exact and structural interview questions based on the information obtained from the literature review and guidance from my department chair.

Participants

Researchers who conduct a qualitative case study should validate whether the participants are eligible (Yin, 2018). To be eligible for this study, participants had to have a minimum of 2 years of experience in successfully improving the efficiencies in the ED. These participants needed to be managers who are responsible for the day-to-day operations in the ED, and the gatekeeper helped me identify appropriate participants for this research study.

Private sector gatekeepers control healthcare knowledge (Collyer et al., 2017). In my research study, the director of the ED was the gatekeeper and allowed me to observe workflows and access participants. Prior to beginning my research, the gatekeeper signed a letter of cooperation indicating their role as a research partner.

After receiving the signed letter of cooperation and institutional review board (IRB) approval, I worked with the gatekeeper to identify participants who met my abovementioned inclusion criteria (Collyer et al., 2017). The potential participants that

expressed interest in my study signed an informed consent. Informed consent is part of the research process by creating a positive relationship between the researcher and participant (Collyer et al., 2017).

Hart-Johnson (2017) outlined several strategies that will result in a positive working relationship between researcher and participant, including transparency, flexibility, avoiding microaggressions, refraining from claiming insider status, and utilizing ethical mindfulness. To achieve these elements, researchers ensure that participants understand the study's goals and their expected role while also ensuring participants' experience comfort and undue stress throughout the interviewing process (Hart-Johnson, 2017). Researchers should establish a safe space for participants to be honest and accepted (Hart-Johnson, 2017). To maintain a positive working relationship, I provided information on the progress of the study and allowed the participants to share their thoughts and ideas regarding my research study.

Research Method and Design

Research Method

McCusker and Gunaydin (2015) indicated that researchers chose from three primary research methods, including quantitative, qualitative, and mixed methods. Research studies are either quantitative, qualitative, or mixed methodologies, with quantitative and qualitative the most pervasive (Yin, 2018). Researchers must select the method that best facilitates forming research objectives and collecting data (Ray, 2015; Yin, 2018). A mixed methods study contains both quantitative and qualitative aspects (Bernard, 2017). For purposes of this study, the application of quantitative or mixed

methods is not suitable to address my research question because it is not my intention to test hypotheses. In my study, I explored a phenomenon; I did not measure the relationship among data. A qualitative method was appropriate for my study.

To explore my research question, I selected a qualitative research method to explore how hospital leaders use strategies to mitigate the overcrowding at a hospital ED in Idaho Falls, Idaho (Creswell & Poth, 2017). In contrast, a quantitative study would require the testing of variables and the use of statistical analysis (Plotnikov & Vertakova, 2014). Since this study did not test data-driven hypotheses, a qualitative framework was the most appropriate. A qualitative methodology enables a researcher to investigate experiences and social behaviors, which serve to investigate and analyze a phenomenon (Wolgemuth et al., 2015). I conducted a qualitative case study to explore social experiences in a bounded system through five virtual videoconference interviews of hospital leaders.

Research Design

After choosing a qualitative research method, the researcher must decide on an appropriate design. Among the available qualitative research designs are (a) phenomenology, (b) ethnography, and (c) case study (Kisely, 2015). I determined that a phenomenological design would be limited for my purposes. Researchers use a phenomenological design to explore participants' lived experiences (Olasina, 2016; Serban & Roberts, 2016). It was not my intention to explore the lived experiences of participants. Thus, a phenomenology design would not have been sufficient for me to address my research question. Researchers use an ethnographic research design to

explore cultural groups' belief systems (Olasina, 2016; Serban & Roberts, 2016). I did not explore the beliefs of the culture of a group. Thus, I rejected an ethnographic design, which did not support my study's objective of in-depth case exploration and analysis.

The most effective design for my study was a case study design. Through a case study design, I explored my research question regarding what strategies managers utilize to address inefficiencies in the ED. In a case study, researchers explore the "how," "why," and "what" of bounded systems using multiple data sources (Kruth, 2015). I determined a qualitative single case study is an appropriate design for the study because my goal was to conduct an in-depth exploration of a single organization. A single case study is a focused review and involves various sources of information, such as the review of documents and interviews to describe the problem (Yin, 2018). My goal was to explore organizational and individual experiences by hospital leaders to determine ways to address inefficiencies in an ED. Gathering in-depth data from a variety of research participants at a single hospital site may yield these results.

According to Fusch and Ness (2015), data saturation occurs at a point when additional data collection results in no new themes, coding, or a minimal chance of gaining additional insights. Data saturation is achieved through the sampling process due to the fact; qualitative samples are small. Saturation cannot happen if the data collected are inadequate (Morse, 2015). I reached data saturation with my sample. However, if I had not reached a point of data saturation with my sample size, I would have extended the data collection.

Population and Sampling

I used purposeful sampling in this study. Purposeful sampling is a way of identifying participants who have sufficient knowledge to provide information regarding the subject (Bernard, 2017). Directors, administrators, and clinical directors are a part of this knowledge base that I chose to select my participants. Researchers use purposeful sampling with the sole intent of gathering data from specific and targeted individuals who are highly knowledgeable about the topic (Bernard, 2017). Purposeful sampling helps researchers collect relevant data related to the research question (Solomon & Casey, 2017).

According to Palinkas et al. (2015), a qualitative study should include a sample supporting data saturation. Conducting as few as five or six interviews can provide sufficient information to achieve data saturation (O'Reilly & Parker, 2013). I started with a sample size of five participants and was able to reach data saturation at the conclusion of the interviews. Bernard (2017) indicated that small sample sizes are acceptable when researchers use purposeful sampling to identify and recruit participants. Gentles et al. (2015) recommended using no fewer than four cases for a multiple case study and including 25-50 units or data sources. According to Boddy (2016), eight to ten is an optimal sample size. O'Reilly and Parker (2013) observed that several factors determine the size of an adequate sample population for a qualitative study, including the participant's study topic and participant availability. The sample population for this study consisted of five directors, administrators, and clinical managers who work at an acute hospital facility in Idaho Falls, Idaho.

Ethical Research

As the researcher in this study, I reviewed the Walden University checklist to understand the approval process. The Walden IRB approval number is 12-07-21-0433488. Ethics also play an essential role in a qualitative study (Cope, 2014). *The Belmont Report* established guidelines and protocol for researchers who utilize human subjects. I had a responsibility to ensure there would be no harm to participants during the interview data collection process. To mitigate any potential harm to participants, I conducted virtual interviews via the Zoom videoconferencing platform (https://zoom.us), scheduled conveniently for the participant. The questions that asked were short and concise to reduce mental fatigue and long sitting periods. All personal information was redacted from any record of information obtained from the participant. Participants' confidentiality was protected by using an alphanumeric code for each participant named in my research notes. To add further protection to participants' confidentiality, I will store all notes in a secured file folder and destroy electronic files after 5 years in a secure location.

I adhered to the three basic ethical standards outlined in *The Belmont Report*, including ethical principles, beneficence, respect for individuals, and justice. *The Belmont Report* governed protocol for conducting Biomedical and Behavioral Research to ensure the protection of human subjects (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Participants in this study agreed to participate and acknowledged that no incentives or rewards would be provided to participate in this research study.

Data Collection Instruments

The primary data collection instrument in a qualitative study is the researcher. Qualitative researchers may utilize semistructured interviews to collect data (Weiner et al., 2012). Cope (2014) stated that qualitative researchers need to use more than a single source of data in a study. Carter et al. (2014) stated that the study's validity would increase by using multiple sources of data. Data collection for qualitative studies entails carefully collecting data from various sources, including primary interviews, observation, focus groups, and existing records (Rimando et al., 2015). I collected data using semistructured interviews using open-ended questions (see Appendix B) and a review of organizational documents. The organizational documents I reviewed consisted of (a) sign-in time logs (designated as SITL), which reflected the time of each arrival; (b) discharged time logs (DGTL), which show when a patient's care has been completed and are being discharged to home; (c) the internal house supervisor's report (designated as IHSR), which reflect the number of ED patients admitted as inpatients to the hospital; and the (d) hospital's mission and value statement (designated as VALUE). Participants mentioned specific documents they use during their daily activity. After an interview where a participant identified a document, I requested and received representative copies from the gatekeeper. The mission and value statements were available at the organization's website.

Unlike a quantitative researcher, who uses instruments to gather data, the qualitative researcher is the data collection instrument (Castillo-Montoya, 2016). In a qualitative study, face-to-face interviews are an essential means of gathering information,

regardless of whether they are conducted individually or in a group setting (Wan et al., 2016). I conducted virtual Zoom interviews. A researcher who seeks the interviewing route explores a participant's experiences and opinions related to the research topic.

Interviews may take on many forms, with varying degrees of structure (Wan et al., 2016). Interviewers who incorporate in-depth interviews that contain rich complex information (Wan et al., 2016) strive to understand the interviewees' experience and the meaning of that experience (Castillo-Montoya, 2016). In-depth interviews with several individuals help researchers understand similarities and differences in responses, which can be valuable when researching a complex topic (Green et al., 2015).

Researchers may exercise various options when they are structuring their interviews, from strictly structured to informal. Many researchers typically choose a semistructured format, which is a more exploratory option that balances the need for standardization (Green et al., 2015). Wan et al. (2016) suggested that conducting in-depth interviews enables researchers to gain relevant information directly from those who are more suitable to answer the research question. The interviewer uses in-depth, face-to-face interviews to explore complex issues through a conversational rapport that can include follow-up questions (Wan et al., 2016).

Castillo-Montoya (2016) established four steps in systematically designing an interview protocol: (a) align interview questions with the research question; (b) develop an inquiry-based conversation; (c) gather feedback on interview protocols; and (d) pilot the interview protocol. Therefore, I ensured participants understood the questions, especially since my job is to determine that they address the research question. Castillo-

Montoya argued that this phase of the research is essential to improving both the protocol's reliability and trustworthiness as a research instrument. I sought and obtained Walden IRB approval. After IRB approval, I began collecting data by contacting potential participants in leadership at the hospital. After each interview, Yin (2018) highlighted the importance of taking thorough notes while compiling information for a case study and says it ensures that researchers have obtained the correct information and the information is accurate. I took notes to reflect how the flow begins the moment a patient arrives in the ED. During the review of collected documents and immediately following the interviews to capture any casual observations. By using a unique number for each participant (P1, P2, P3, P4, and P5) I ensured that participants' comments and identity will remain confidential. I summarized these findings and conduct member checking. Member checking is a process where each participant will confirm or deny the participant's voice on the recording and validate by verifying and asking each question a second time for confirmation purposes (Simpson & Quigley, 2016).

Data Collection Technique

This study is a qualitative single case study. A question I examined is what strategies healthcare leaders utilize to reduce inefficiencies in an ED. Researchers are the primary instrument in qualitative case studies (Bellamy et al., 2016). My approach was to use face-to-face virtual interviews with directors, administrators, or clinical managers in the Idaho Falls, Idaho area who have successfully addressed inefficiencies in the ED. I also reviewed and utilized the information contained on the company's website, along with the organization documents. The organizational documents I reviewed consisted of

(a) sign in time logs (designated as SITL), which reflected the time of each arrival; (b) discharged time logs (DGTL), which show when a patient's care has been completed and are being discharged to home; (c) the internal house supervisor's report (designated as IHSR), which reflect the number of ED patients admitted as inpatients to the hospital; and the (d) hospital's mission and value statement (designated as VALUE).

For my study, I ensured reliability by collecting data in a systematic order through member checking by providing participants with the set of questions along with their responses to ensure accuracy. I interviewed participants by following the interview protocol that I have developed (see Appendix A). I conducted face-to-face virtual Zoom interviews to achieve what Yin (2018) defined as *meaningful parallelism* through detailed documentation, ensuring consistency across the interview process. Member checking is essential to a qualitative case study to ensure consistency and accuracy (Simpson & Quigley, 2016). Castillo-Montoya (2016) noted that structured and semistructured interviews and could help improve reliability and research results. According to Rubin and Rubin (2012), semistructured interviews involve both prepared and follow-up questions to learn more about a particular topic.

My approach was to incorporate semistructured interviews to gather the information that will help me learn how Directors, administrators, and clinical managers implement strategies to reduce ED inefficiencies. The step-by-step process of data collection included the following steps:

- Communicate with the gatekeeper to gain an understanding of the organization relevant to my study.

- Work with gatekeeper to identify and communicate with appropriate potential participants.
- After the participant signed the informed consent conduct interview using my interview protocol (see appendix A).
- Immediately at the conclusion of an interview and documented my impressions of the interview in my field notes.
- If the participant identified a specific document, I requested that document from the gatekeeper.
- Transcribe the interview and summarize the findings. I reviewed my field notes when completing the field not summary to make sure my summary was complete.
- Review the summary with the participant and ask for any clarifications.
- Repeat the interview, transcription, note taking, and member checking for each participant.
- Accumulate organization documents, review, highlight relevant components and summarize in my field notes.

My goal in the data collection phase focused on the quantity and quality of data. Fusch and Ness (2015) related quality of data as thick, and the quantity of the data as rich. Embedded in the process was my goal of reaching data saturation. Through the process of member checking, triangulating interview data with additional documents, and using my field notes to enhance the organization the data, I was able to meet my goal of rich and think data.

Data Organization Technique

Researchers analyze qualitative data to organize data, find patterns and develop themes in their work (Houghton et al., 2015). Organizing data requires various techniques to ensure the integrity of audio recordings, transcribed recorded interviews, and documents (Anyan, 2013). The starting point of my data organization process was setting up a secured folder on my commuter with subfolders named (a) Interviews Data, (b) Organization Documents, and (c) Field Notes. Any files I uploaded included the source, document type, and collection date. For example, a transcript was named P1_Transcript_XXXX2022.Docx. Having a highly organized system assisted me when I began to analyze my data

I transcribed the notes from my journal that I created during the interview process and the ED documents review. My field notes contain my immediate reflections during the data collection process and was used to help organize and analyze my data. Proper field notes ensured accuracy and completeness of the data. Yin (2018) stated it is essential that all of the correct information is captured. During this process, organizing and coding data will help establish and interpret patterns (Houghton et al., 2015). Yin recommended note taking as an integral part of a case study. Researcher notes ensure the accuracy of what is being observed and discussed in the field during and immediately following the data collection process. Researchers subsequently used these notes to support the data analysis process (Yin, 2018). For enhanced security, an encrypted password will be added to retrieve any data gathered during this research, such as interview recordings, interview transcripts, coded data files, and field notes). To ensure

that my research data is safe and secure, I used a cloud data storage system. I also maintained all hard copies of research data and interview transcripts, particularly useful during the coding and analysis process. I scanned all handwritten notes taken during the review of documents, and this data will also be stored away and saved for over 5 years.

Data Analysis

Researchers understand phenomena by identifying emergent themes (Leedy & Ormrod, 2013). In a qualitative study, data analysis begins with theme discovery linking themes to the studied phenomenon (Silverman, 2013). To begin the analysis, a researcher should develop interview questions that establish patterns and themes and include triangulation to test the validity of those patterns and themes as information converges from various sources (Yin, 2018). I followed Yin's 5-step data analysis that includes (a) acquiring data and related sources, (b) extracting, coding, and formatting information in an orderly manner, (c) grouping data into the subject matter, and (e) interpreting results and formulation a conclusion. Once I uploaded my data into NVivo, I read through the data files from interviews, organizational documents, and field notes to identify patterns. From this pattern, I grouped the narrative segments into specific themes. Finley et al. (2020) recommended conducting the second round of review and coding to refine the themes. Thus, I read all data a second time to refine the first step's themes.

According to Yin (2018) and Carter et al. (2014), case study data analysis may entail four triangulation methods, including data triangulation, investigator triangulation, theory triangulation, and methodological triangulation. Methodological triangulation is when a researcher uses multiple methods to collect data (Yin, 2018). Through

methodological triangulation, researchers leverage several data sources and methods to develop a more robust understanding of a phenomenon (Bellamy et al., 2016; Carter et al., 2014). For my study, methodological triangulation was the most appropriate data analysis strategy. The methods I used included interviews and document reviews. I conducted semistructured interviewed using open ended questions with five participants who had an in depth understanding of my research question. In addition, I reviewed several documents. The organizational documents I reviewed consisted of (a) sign in time logs (designated as SITL), which reflected the time of each arrival; (b) discharged time logs (designated as DGTL), which show when a patient's care has been completed and are being discharged to home; (c) the internal house supervisor's report (designated as IHSR), which reflect the number of ED patients admitted as inpatients to the hospital; and the (d) hospital's mission and value statement (designated as VALUE). The documents I reviewed supported the comments from participants by providing practical examples of the activities of ED staff.

To enhance the reliability of the analysis process I continually referred to my field notes. The field notes provided an ongoing narrative of my impressions gained through the data collection process. As suggested by Phillippi et al. (2018) field notes are an extension of data and aids in constructing thick rich descriptions of the emergent themes. In addition, I reviewed articles published after the completion of my proposal. Therefore, throughout the data analysis process, my field notes were a part of each of the five-step process I used to extract themes. Through new literature I became aware of research that might impact my research.

Reliability and Validity

Lincoln and Guba (1985) established four criteria to judge qualitative research, including credibility, transferability, dependability, and confirmability. Yin (2018) established similar criteria: credibility, transferability, confirmability, and data saturation. A researcher should establish the reliability and validity to reduce biases and ensure quality (Yin, 2018). Additionally, reliability is a test that sets the standard for quality in social science research (Yin, 2018). Reliability happens when another investigator can follow the thought process and analysis used by another researcher. Ang et al. (2016) stated reliability and validity are parallel concepts that include credibility, transferability, dependability, confirmability, and authenticity.

Reliability

In qualitative research, researchers use dependability to frame the research process's reliability (Poortman & Schildkamp, 2012). Dependability occurs when other researchers conducting similar observations and analysis draw similar conclusions as the original researcher (Sinkovics & Alfoldi, 2012). Dependability increases when a researcher uses careful documentation, provides an audit trail and conducts member checking (Yin, 2018). A strategy to increase dependability is member checking (Wood et al., 2019). Member checking occurs when researchers allow participants to review the researcher's interpretation of the interview data (Bellamy et al., 2016). After each interview, I summarized my interpretation of the interview and allowed each participant to review and provide any necessary corrections to my interpretation.

Validity

Validity and credibility enhance a study by ensuring that the phenomena described are accurate (Noble & Smith, 2015). According to Yin (2018), validity is the primary strength of qualitative research. The main goal of qualitative research is to convey a comprehensive understanding of a phenomenon by relaying credible descriptions, details, triangulations, and reflections (Yin, 2018).

Credibility

According to Cuthert and Moules (2014), researchers establish credibility by focusing on the research's relevance. Hayashi et al. (2019) suggested that researchers verify findings to add to credibility. I used two methods to verify my findings, including triangulation and member checking. Triangulation is essential for developing credible findings (Bellamy et al., 2016). Also, as identified by Boddy (2016), member checking can enhance credibility. I conducted member checking by asking each participant to review and provide comments on my interview interpretation. I also use multiple data collection methods through methodological triangulate to add credibility to the research findings.

Transferability

A measure of transferability is when current research findings create value for future researchers who explore another similar research setting (Thomas, 2017). Daniel (2018) suggested that research is transferable when the results apply to multiple settings. Future researchers will benefit from my research if the results are transferable to other

similar situations. To increase transferability, I provided a detailed description of data that will enable future researchers to benefit from my academic research results.

Confirmability

Confirmability in the research study occurs when the investigation is grounded in data and not an expression of the researcher's viewpoint (Cuthert & Moules, 2014). To enhance confirmability, I refrained from embedding my personal biases in the final theme development. To reduce bias, I bracketed my personal ideas to reduce biases. Bracketing is a method used to establish legitimacy between the data collection and analysis of the participants' information (Sorsa et al., 2015). To limit potential bias, I asked participants to review my interpretation of interview data. Also, by triangulating interview data with data collected from observations and a review of internal policies and procedures I confirmed the data collected from interviews. Ang et al. (2016) defined triangulation as an effective means of establishing confirmability. Researchers reach data saturation when there is no new data or additional themes that need to be further coded.

Data Saturation

A researcher reaches a point of data saturation when additional data collection does not lead to new themes (Fusch & Ness, 2015). Data saturation might take longer, especially if additional participants are interviewed (Gentles et al., 2015). I conducted five virtual Zoom interviews and continued collecting data until I reached data saturation.

Transition and Summary

In Section 2, I reconfirmed the study's purpose and my role as a researcher in the data collection process. I closely examined the ethical considerations, articulated the

research method and design, and explained how I would recruit participants. I also discussed how I would support the study's validity and reliability. I included specific details about this qualitative single case study, which explores the various strategies that healthcare leaders use to improve patient flow in an ED while reducing costs. I also determined that in-depth, face-to-face virtual interviews allowed me to achieve my study goals.

Finally, I analyzed and interpret these results. During this process, I documented the collecting, analyzing, and triangulation of the data to help support if the study meets the reliability and validity test while enabling future researchers to transfer the results into future studies for confirmability. In Section 3, I present the research results, including implications for change in professional practice. My goal is to present various strategies that directors, administrators, and clinical managers use to improve patient flow in an ED while reducing costs.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative single case study was to explore why some directors, administrators, and clinical managers lacked strategies to reduce inefficiencies in an ED. In Section 3 of my study, I analyze data collected from five participants at a hospital in Idaho Falls, Idaho. Participants provided information regarding how they implemented their strategies in the ED to resolve a systemic issue of overcrowding in the ED. In individual Zoom session, I asked a series of open-ended questions and continued to collect data until I reached data saturation. After recording the collected information in a journal, I engaged the participants in a member-checking process to verify that the interpretation of their responses was accurate. By triangulating interview data with a review of organizational documents and observations, the reliability and validity of the study increased. I analyzed data using Yin's (2018) five-step process, including (a) compiling, (b) disassembling, (c) reassembling, (d) interpreting, and (e) concluding. The themes that emerged from data analysis related to strategies to reduce inefficiencies in an ED, including (a) communication, (b) triage and workflow, and (c) staffing.

Presentation of Findings

An ED has unique workflow issues that have increased in the COVID-19 environment. Based on data collected from participants and a review of supporting documents, three themes emerged. Table 1 provides a summary of thematic comments from participants supporting each theme.

Table 1

Summary of Number of Thematic Comments

Participant	Communication	Triage and workflow	Staffing
P1	3	4	2
P2	1	3	1
P3	2	3	3
P4	2	3	2
P5	3	3	3

Triangulating interview data with a review of organizational documents was a strategy to increase the reliability of the results. The organizational documents reviewed in the analysis process consisted of (a) sign-in time logs (designated as SITL), which reflected the time of each arrival, (b) discharged time logs (DGTL), which show when a patient's care has been completed and are being discharged to home, (c) the internal house supervisor's report (designated as IHSR), which reflect the number of ED patients admitted as inpatients to the hospital and the (d) hospital's mission and value statement (designated as VALUE). To help me organize interview data and organization documents, I maintained field notes. After each interview, I summarized key impressions from each interview. In addition, as I reviewed documents, I highlighted and noted in my journal relevant elements from the documents. The notes formed the framework of my data organization and analysis. As I analyzed the data with the goal of identifying emergent themes, I referred to my notes to increase my assurance that I did not miss key elements from the data. As suggested by Phillippi et al. (2018), field notes are an extension of data and aid in constructing thick, rich descriptions of the emergent themes. Therefore, throughout the data analysis process, my field notes were a part of each of the

five-step process I used to extract themes. Based on the interview data and triangulated organization data, three themes emerged, including (a) communication, (b) triage and workflow, and (c) staffing represent strategies participants used to reduce inefficiencies in the ED.

Communication

The first emergent theme was communication. Communication strategies, such as sharing information, and collaboration among clinical staff emerged as key factors in care delivery and reducing bottlenecks in EDs. The organization's value statement (VALUE) explicitly stated that a key organization value embedded in the mission statement is "efficiency in our actions and communication." P3 explained that in order to reduce inefficiencies in the ED there has to be "clear communication and expectations." All team members should be responsible for department outcomes. For example, P3 stated, "All members of the team are required to be aware of their assignment for the day." P3 also added,

> We must communicate to staff whenever there is a staff shortage so that the staff understands what additional duties may be assigned to help maintain the flow of the department. Open lines of communication help the staff keep abreast of assignments, shortages, additional duties, and gaps in training patient flow.

P2 added to the theme: "there has to be ongoing communication so that all ED staff is aware of any impromptu changes that may increase their job role in the ED." P4 also stated, "When the ancillary departments, such as the lab department is short-handed, we have to find our other nurse colleagues who can draw the blood or render other lab

type services necessary to rule out certain medical conditions." Stucky et al. (2022) supported the need for skillful collaboration between departments. Supporting the collaboration of clinical staff was the IHSR report generated by the nursing supervisor, which gave specific examples of coordination between clinical and ancillary services.

P1 also gave examples of inefficiencies, stating, "The layout of the department is not conducive to the flow of patients moving in and out of the ER." According to P1, "We have built in some communication tools, which allowed my colleagues and me to review the shift report created by the house Supervisor to see the bed availability." In a review of the DGTL, the report displays the number of patients on the floor and the number of projected discharges. The participants explained how this report supports their communication.

Communication, sharing information, and collaboration among clinical staff are key factors in care delivery and effectiveness. P4 agreed that the communication of information has to be timely and all "ED staff needs to be provided the information at the same time". Communication and sharing of information are strategies supported by current research. Therefore, ongoing team collaboration is essential and effects the performance of the organization (Musheke & Phiri, 2021). For communication to be effective it must be ongoing and open. For example, there are times when only a handful of nurses are aware that they should stop sending patients to the telemetry units. However, without constant communication, nurses who are unaware of the hold will continue to send patients rather than diverting them to another unit. Teamwork and relaying information are particularly important in ED service delivery; developing and

maintained consistent, open, and effective lines of communication among clinical staff may be difficult. Challenges identified by participants included ED volume and how the variance in volume affects workloads and the impact on employee stress. P5 mentioned that bottlenecks occur whenever there is an interruption in communication with the comment:

> There have been a few instances when an entire shift leaves at the change of shifts without regard to the fact that the last shift of the day is short and is not able to keep up with the normal workflow.

ED patient flow that is not consistent reflects poorly in patient assessment and outcomes (Hettinger et al., 2020). Clinical staff providers and patient relationships are also critical to triage, diagnosis, and treatment (Hettinger et al., 2020). Moreover, the transition to electronic health records (EHRs), has affected interpersonal communication and face-to-face interactions with patients. Relaying information regarding data detailed in EHR is helpful in getting patient input to providing bedside care.

Communication between physician's nurses and patients is a requirement to achieve successful ED outcomes. P1 recommended using specialized training for clinical staff that includes effective communications skills and information sharing techniques strategies for communicating. P1 commented, "Clinicians must remain mindful that sharing information is essential to optimizing favorable outcome and reducing patient safety issues."

Researchers supported the conceptual framework of systems theory because it increased communication and enhanced the understanding human interconnectedness

through communication (Musheke et al., 2021). In addition, Buckley (1967) described complex adaptive systems theory as hinging on the communication of information among agents, focusing on an organization's evolving parameters. Similarly, researchers used complex adaptive systems theory to frame the relationships among decision-making agents in uncertain scenarios when communication increases (Reiman et al., 2015).

Overcoming barriers begin with communication to communication in Eds (Al-Kalaldeh, 2022). Whenever there is a breakdown in communications, there is a lack a trust between the nursing staff (Al-Kalalden et al., 2022). Al-Kalalden et al. (2022) provided six examples of the barriers, demographic, job knowledge, environmental, social, economic, and psychological factors.

Triage and Workflow

Embedded in the mission of the hospital (VALUE) is relationship building. The mission encourages collaboration between clinical units. By focusing on workflow bottlenecks, ED administrators are able to increase efficiencies (Al-Yousif et al., 2021). According to P1, "inefficient workflow and the triage process contribute to ER bottlenecks." All participants provided insights related to reducing inefficiencies through a focus on workflow. P2 stated, "Patient flow is key to an effective ED. and patient satisfaction." The comment from P1 of "all participants" reinforces the mission to collaborate.

Factors affecting ED access include wait time, population of patients, and the patients' medical needs. Throughput is a measure of the number of patients and time between triage and determining the patients' outcome (Feizi et al., 2022). The relation

between input, throughput, and output determines the level ED overcrowding. P3 suggested that "utilizing a physician to help triage would decrease the patient wait time, a physician would be able to rule out medical conditions and order the necessary lab work in a timelier manner." P4 agreed and stated:

> There needs to be a higher level of clinical staff who are able to quickly identify how to resolve the patient's condition so that lab work is ordered right away reducing the need for patients to have longer wait times.

P5 concluded by emphasizing the need for staff pairing: "there should be a nurse, physician, radiologist, and lab tech in the triage area to decrease the patient waiting times". All five participants indicated that an efficient triage system would get the patients to the ED sooner and that it would decrease the door-to-door provider time. The length of time between triage and determining patient outcome is defined as throughput. A more effective way of triaging that has resulted in positive outcomes involved a nurse pairing with a family physician or a pairing involving a non-clinical person with a physician (Al-Yousif et al., 2021). The three forms, including the SITL, DGTL and IHSR shows the collaboration between departments to follow patient care from the point of entry to the point of discharge or transfer to an inpatient status. This new way of triaging has been a successful strategy supported by current research.

A final issue affecting the workflow in the ED is a substantial number of lower acuity patients that interrupt the flow of medical emergencies (Al-Yousif et al., 2021). The goal of a well-functioning triage process is to allow the medical staff to separate

nonemergency situations from life-threatening emergencies. The goal of the triage process is to reduce the impact of lower acuity visits in the ED (Al-Yousif et al., 2021).

Reviewing workflow patterns can help to improve front-end processes (i.e., triage, bedside registration, and door to bed, shorter wait times) and back-end processes (i.e., discharges, admissions, and door to admit time). A process review is a critical step for implementing strategies of reducing length of stay in the ED (Popvich et al., 2012). P1 stated, "Decreasing inefficiencies starts with increasing the knowledge of triage nurses who are able to triage the patients in a timely manner so that the door-to-door provider time decreases." Salwei et al. (2021) showed that by making clinical decisions based on evidence-based information could aid in implementing the improvement in workflow. Improvement of existing policies can help to improve patient flow and reduce negative outcomes. Each of the five of the participants indicated that they adopted a COVID-19 strategy as way of moving patients in and out of the hospital. For example, P4 stated, "we work with the neighboring hospitals that involves the transferring of patients from the larger tertiary hospitals to critical access hospitals." P1 added "this process frees up resources by allowing the nurses at the critical access hospitals to take post-acute, COVID-19, swing bed, and lower acuity patients."

During the COVID-19 crisis, a high influx of patients came through the EDs, which forced a change in the ED processes. P1 stated: "We formed a multi-disciplinary team across the hospital organization to help determine what other departments were struggling with or where bottlenecks and other glitches that delayed patient care." The reports, such as the SITL, provide time stamps, which allows clinical staff to identify

these bottlenecks. The emergency teams in these EDs had to change their practices regarding how patients navigated through the healthcare system to improve the quality of patient care. For example, P3 stated that the ED had to shift the attitude away from "the way things have always been done." Sonis et al. (2020) recommended incorporating videos messages that trigger discussions on ED management, rapid decision making, and updates on current clinical recommendation. An effective strategy needs to be in place in to address disruptions, such as COVID-19.

Several participants emphasized moving away from old workflow models to innovate and develop a new way of business practice. P1 also believed that one of the biggest hurdles is "with the leadership who still have the bean counter mentality to find new ways of doing things." Kotter (2014) outlined a change management process that creates a sense of urgency needed to increase throughput and output. The last step in the change management platform step in Kotter's change is to achieve quality initiatives (Hall, 2021). Supporting this, P2 stated, "Our ED processes started by implementing a transitional care unit (TCU) to address the necessary backlogs." P2 added:

> Our hospital administration felt that this unit was necessary in order to address what is called the downstream. The downstream process exists whenever there is a backlog in the ED, because of a lack of nurses on the floor not being able to discharge the patient to home, rehabilitation, or a skilled nursing facility in a timely manner.

All five of the participants felt that moving patients to the TCU within the same day alleviates bottlenecks in the ED. The participants indicated that the ED operational

processes improved during the COVID-19 outbreak. The general systems theory and current research support these comments. According to Bertalanffy (1972), finding an efficient workflow is an example of organizational problems. Bertalanffy believed a system is a complete and efficient operation that depends on collaboration of groups working together. Ahmadpour et al. (2021) supported the recommendation to implement a fast-track triage process. Fast-track systems may also improve patient flow through the ED. A fast-track system diverts patients with non-urgent medical needs into a separate path (et al., 2022). To develop an effective triage, the ED may consider developing an appropriate workflow and physical layout to support the newly developed efficiencies.

Staffing

As part of the mission (VALUE), leadership places an emphasis on professional development. The mission statement described the relationship between professionalism and education. The VALUE document supported the third theme, which is defined as staffing. Staffing related to strategies in which the ED leaders used to overcoming barriers caused by staffing issues. ED staffing shortages compounds the problem and increases the unpredictability of patient flow. Given that an ED is open 24 hours a day, 365 days a year, planning staffing needs is difficult. P1stated, “Ongoing barriers include staffing shortage, training, and onboarding issues.” P4 further stated, “There is more of a financial incentive for nurses to stay in school to pursue a graduate degree, therefore, these nurses are only available to work part time and not available to immediately serve the patient population.” Recent nursing graduates have limitations when entering the workforce, due to a lack of clinical experience (Nodine et al., 2022). Incorporating

training to new graduates is a significant part of the onboarding process, which is in support of the value statement of the hospital to “improve our knowledge skills.”

Supporting this value statement is embedded in participants’ comments. According to P2, “New nurses lack experience and clinical training, and this issue puts pressure on other departments.” P3 also commented, “Nurses with limited experience and clinical skills creates bottlenecks in the ED and other ancillary departments.” P5 added, “New graduate nurses are coming out of school post COVID-19 without having actual in-hospital time and have never really even touched a human patient.” Current research supports the comments from participants. For example, Nodine et al. (2022) noted that the COVID-19 pandemic negatively affects the delivery of care and has added additional stress to new and student nurses.

P3 added, “The more seasoned nurses have to teach these new nurses before they are able to train or orient then to the units. A lack of experienced staff significantly prolongs onboarding time.” P1 noted an increase the dropout rate for new nurses who had no idea what actual nursing looked and emphasized the need for training with the statement: “In order to perform essential job duties ED staff must be equipped with proper education and training.” Participants confirmed that hospital leadership should encourage all ER staff members have received adequate training to maximize favorable outcomes, treatment effectiveness and efficiency. Without appropriate training of staff, EDs can become backlogged, which impacts ancillary the unit’s workflow and be potentially dangerous for patients and staff. Current research supports comments of participants related to an increase in training. Moslehi et al. (2022) recommended ED

training programs to upgrade staff knowledge and performance and to acquire practical skills.

ED management is responsible for recruiting and grooming qualified staff. Training on ED policies and procedures must be reviewed in depth for all staff. Healthcare personnel must have appropriate degrees, credentials, state licenses, and the necessary skills to do the job. However, P3 commented on ways the hospital has improved staffing shortages by overlapping work schedules: "We have implemented core and bridge shifters." P3 explained that the core shifters work from 7 p.m. to 7 a.m. and 7 a.m. to 3 p.m., whereas an employee working in a timeslot that is classified as a bridge shifter who has worked from 11:00 a.m. to 11 p.m., noon to midnight and 1 a.m. to 1 p.m. This supports current research that reflected the stability in nursing staff is critical to healthcare organization and is the result of positive outcomes, such as reducing falls, reducing the rate of medication errors and mortality (Shin et al., 2020).

The benefits of proper staffing extended beyond patient care and may increase employee satisfaction, retention, as well as improve the safety of patients and employees (Shin et al., 2020). Addressing the complexity related to optimizing staff levels is a theme that is supported by the general systems theory. Swanson et al. (2012) stated that in a systematic review of healthcare complexity, healthcare delivery is comprised of a multilayered, complex interrelationship between those who receive and provide services. Researchers use the general system theory to understand the interactive and dynamic nature of social organizations (Braithwaite et al., 2018).

Applications to Professional Practice

Healthcare practitioners strive to find ways to develop higher standards in communication, staff training, workforce forecast, and staffing, The healthcare system in the United States is multifaceted and requires the collaboration from many entities working together to achieve personalized patient treatment plans and more effective triage alternatives (World Health Organization, 2018). Some hospital leaders struggled with prolonged throughput because of staffing and inconsistent flow in the ED (P. Mckenna et al., 2019). A poorly designed ED is an impediment of the flow of moving patients in and out of the ED.

Healthcare leaders may need to consider interactive factors that aide in improving patient flow in the ED. The performance of ancillary services resulted in a time delay with patients boarding for a longer period of time. For example, patients may not obtain the necessary lab or radiology services whenever those departments experience staff shortages and other challenges (P. Mckenna et al., 2019). Patients being admitted from the ED to the hospital often times have no beds, which results in long boarding times in the ED (P. Mckenna et al., 2019). Historically, the ED staffs have experienced increasing patient volumes, which has led to compromised care outcomes staffing burnout (Carmassi et al., 2022). ED overcrowding also results in an increase in mortality, morbidity, and a decrease in the quality of care. Patients who leave prior to seeing a medical provider has also become a significant indicator of overcrowding and can contribute to a healthcare crisis (Sartini et al., 2022).

The goal of my research was to increase an understanding of strategies that could increase efficiencies in the delivery of healthcare. My emergent themes related to service delivery strategies, including (a) communication, (b) workflow and triage, and (c) staffing. The strategies embedded in the themes could aide in improving the timeliness of the ED medical care. The strategies embedded in my themes may aid in implementation of precise and accurate information include better communication and collaboration between healthcare staff. These findings are relevant to improving consistency in patient care along with ED service throughput and output.

Implications for Social Change

The implications of social change from the emergent themes may come through an increased efficiencies in the ED. According to Creswick et al. (2009), communication is important throughout all channels of the ED team. ED collaboration is essential, and all colleagues must be intricately connected in an effort to solve complex and emergent medical issues. ED staffing levels must be optimal to manage effectively an ED's patients load (Shin et al., 2020). However, there may be a positive change by implementing a new process to change the current method of how patients are triaged through the ED system. Patients do not necessarily require a nurse to provide triaging when a non-clinical person can provide a baseline screening of a medical condition (Hall, 2021).

Another outcome from the emergent themes include implementing process improvement that may aid in patient triage, workflow, and staff training. The strategies outlined in my themes may improve patient triage and care outcomes. The findings of my study outline key factors that aide in developing policies and procedures to increase

patient flow in the ED more efficient and effective. Successful transformation of patient care delivery in the ED, include the exploration of the following topics: (a) ED changing performance expectations of professional staff, (b) establishing the right expectations, and (c) improving the patient experience.

Recommendations for Action

An ED is a system and to work properly involves every department within the hospital to work. A system's thinking approach allows managers to assess the interrelation of numerous factors (Marchal et al., 2012). There is an interrelation of many factors that must be considered when making changes in the ED. Hospital organizations could address the following areas to ensure successful strategies are put in place to increase inefficiencies in the ED: (a) identify workflow challenges that involve lack of knowledge and training; (b) communication plan that is clear and contains the most up-to-date accurate information on changes occurring within and during a shift; and (c) a staffing model that consists of adding new nursing graduates to increase their knowledge and skill so that the nurse-to-patient ratio increases allowing the floors to accept patients at a much faster pace. These findings from my study could serve as guide for hospital leadership as they systematically make changes to increase patient flow in the ED. I will work with my chair to disseminate the results of my study through presentations at academic conferences and peer-reviewed journals.

Recommendations for Further Research

Further research on how to improve efficiencies in the ED, should include training of all of the nursing staff to ensure they have the capacity to exceed and achieve

maximum performance. Ongoing training and development should be part of the normal practices inside of all EDs in the United States and around the world. Additionally, the triage process would need to become part of that change. For example, rather than have nurses help with the triage process, medical assistants could be used to perform a baseline assessment paired with an ED physician as an initiative to decrease the door-to-door time it takes for a patient to see a doctor. Finally, a change in the workflow could improve on the throughput time.

Reflections

My objective was to explore strategies to increase patient flow in the ED. The overreaching study goal was to create a positive change. Strategies embedded in my findings may provide healthcare leaders and managers strategies to increase ED efficiency. By improving operational flaws in the design of a more functional ED, hospital leaders may identify successful strategies to increase patient flow in the ED.

My experience with working in the participants provided me with insights into the issues with ED patient flow. All participants provided strategies to improve ED processes. Participants provided me with specific strategies leaders can use to increase the overall efficiency in the ED. The emergent themes were consistent with my conceptual framework. Each theme supports the concept that all stakeholders need to work together for a common goal. Conducting this scholarly study increased my knowledge and helped me understand the type of necessary research to obtain the results to answer the question of why some directors, administrators, and clinical managers lack

strategies to reduce ED inefficiencies. The findings from this study may contribute to improvements EDs, which is a critical component of the healthcare infrastructure.

Conclusion

ED overcrowding continues to be a major concern in many countries, including the US. Poor communication, staffing shortages, lack of training and workflow triages problems contribute ED overcrowding. ED overcrowding presents issues for patients and staff, including increased waiting times, increased ambulance reroutes, length of stay, errors, patient mortality, and financial losses.

Other areas of focus included mandatory comprehensive training for ED staff, enhanced workflow, and triage models, transitioning to customized staffing and workforce forecast models, and setting clear expectations for communication and documentation. Healthcare leaders need to find solutions to address ED patient flow and overcrowding. Emergent themes from this study may help leaders as they develop strategies to improve the efficiency of EDs.

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Appendix A: Interview Protocol

To interview directors, administrators, and clinical managers to discuss strategies to reduce the large influx of patients visiting the ED.

1. I will provide an overview and purpose of this qualitative case study to each participant in the study.
2. Participants will receive instructions on how to opt-out of the study without consequences.
3. Throughout the process will discuss options for conducting interviews related to COVID-19 recommendations related to social distancing.
4. Participants will receive an informed consent explaining the study's details and a signature collected by email before the interview.
5. I will explain the interview time frame of approximately 45 minutes.
6. I will conduct the interview using open-ended questions
7. I will ask the participants for their E-mail address to send them a summary of the responses to the interview questions after synthesizing the recordings' responses. I will ask each participant to confirm their responses to ensure accuracy.
8. I will conclude the interview by informing the participants that the study is complete.
9. Participants will have the opportunity to respond to the same sets of carefully worded, pre-selected questions.
10. Interviewees will have the opportunity to respond to questions, regardless of whether I meant to frame a question in a certain manner.
11. The participants will receive a thank you note following the interview session.

Appendix B: Interview Questions

Interview Questions

1. What strategies do you use to reduce inefficiencies in the ED?
2. What are some examples of inefficiencies in an ED?
3. What were the barriers to implementing strategies to reduce inefficiencies?
4. How did you overcome the challenges of introducing new efficiency strategies in the ED?
5. How did the hospital benefit from a reduction in inefficiencies in the ED?
6. How do you maintain EMTALA compliance while keeping an efficient patient flow?
7. What strategies do you use to reduce costs in the ED?
8. What additional information might you provide regarding strategies healthcare leaders use to reduce inefficiencies in an ED?