PHYSICIAN COMPENSATION MODELS AND QUALITY OF HEALTHCARE SERVICES IN THE UNITED ARAB EMIRATES

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DEDICATION

This work is dedicated to all my colleagues, my supportive committee, my family especially my father and mother for all the support they have given me throughout my life.

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Physicians working in different healthcare systems receive financial compensation by means of several structures (e.g., the salaried model, the fee-for-service model, and the revenue-share model) depending on how and where they practice. Most research on the relationships, if any, between physicians' compensation models and the outcomes of healthcare services has been conducted in North America and Europe, but no equivalent research has been conducted in the United Arab Emirates (UAE). The purpose of my exploratory qualitative research study was to address two open-ended research questions: 1) *what are the perceptions of hospital stakeholders about the idiographic effects of different physician payment models on quality of healthcare services in the hospital?* 2) *What changes might be implemented to physician payment models to improve healthcare services in the hospital*? I audio-recorded semi-structured interviews with a purposive sample of N = 17 stakeholders at one private sector hospital in UAE. The heterogenous or maximum variation sample included five hospital leaders, two financial or insurance managers, five physicians, two nurses, and three patients. I conducted a qualitative analysis and identified ten primary semantic themes by deductive reasoning to address the first research question. I based four semantic themes on a template extracted from the literature, specifically: 1) *Physician Payment Models Implemented at the Hospital*; 2) *Environmental Context for Payment Models*; 3) *Stakeholders Affected by Payment Models*; 4) *Misuse of Payment models*. I underpinned six semantic themes by the dimensions of healthcare quality proposed by the Institute of Medicine, specifically: 5) *Payment Models and Safe Care*; 6) *Payment Models and Effectiveness of Care*; 7) *Payment Models and Patient-Centered Care;* 8) *Payment Models and Timely Care*; 9) *Payment Models and Efficiency of Care*; 10) and *Payment Models and Equity of Care*. Subsequently, I synthesized the semantic themes and identified two latent themes by inductive reasoning, specifically: 1) *Relationships between Physicians' Compensation Models and Healthcare Services*; and 2) *Proposed Changes to Physician Compensation Models*. I propose innovative changes underpinned by Kotter's Management Change Theory and Roger's Theory of Diffusion of Innovations. I recommend future confirmatory research using a quantitative correlational design to validate these themes.

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Chapter One: Introduction

Background

The remuneration of clinicians is one of the largest expenses of a healthcare system; therefore, improving the structure of compensation or payment models for clinicians is a strategic policy that may potentially enhance the value and quality of healthcare services (Friedberg et al., 2020; Jia et al., 2021; Mitra et al., 2021; Ogundeji et al., 2021; Quinn et al., 2020). Most previous research has focused on the different types of compensation model for physicians, including basic salary, fee-for-service, revenue share, capitation, pay for performance, and blended payment (Hayes et al., 2020; Ikegami, 2015; Kemble, 2012; Li et al., 2014; Lyu et al., 2017; Magill, 2016; Nguyen, 2017; Tolkoff, 2014); however, further research has been recommended to support the development of these models. For example, Fainman & Kucukyaziki (2020) suggested that the design of physicians' incentives and payment schemes provide potential research problems offering avenues for future study. In a systematic review of 27 studies, Jia et al., (2021) emphasized the need for more well-conducted research on the development of payment models for physicians. Based on a cross-sectional survey of 2061 physicians, Ogudeji et al. (2021) recommended more research to support the development of physician payment models that will lead to the provision of more efficient high-value healthcare. Payment models that only incentivize physicians to work harder, without simultaneously enabling them to be more efficient and effective, are destined to fail (Burstein et al., 2022).

Research Problem

Researchers working mainly in North America and Europe have concluded that different types of compensation model may have idiographic (did not find sufficient research on the idiographic effects of the physicians payment models) and/or nomothetic effects on the practices of physicians and the associated quantity and quality of healthcare services that they provide (Friedberg et al., 2015; 2020; Kerr & Ayanian, 2014; Mitra et al., 2021; Nguyen et al., 2017; Ogundeji et al., 2021; Ouayogodé, 2020; Quinn, 2015; Quinn et al., 2020; Rudmik et al., 2014; Somé et al., 2020). Several problems have been reported in the literature related to the effects of different types of physician payment structure. For example, under payment models that incentivize productivity, some profit-driven physicians may order more services than needed (e.g., unnecessary blood tests) which can lead to an inefficient allocation of resources (Kruk et al., 2018). Payments to physicians for the same treatment by privately insured patients may vary substantially in different geographic regions, across hospitals within one region, and even within the same hospital (Cooper et al. 2019). Brosig-Koch et al. (2022) found significant overprovision of medical services under fee-for-service and significant under provision under capitation, whilst introducing mixed payment systems significantly reduced deviations from patient-optimal treatment. In the USA, about 35-45% of health systems' total costs stem from practices that do not benefit and may even hurt patients — such as questionable or unjustified treatments, scientifically unproven variation in medical practices, redundant or otherwise unnecessary testing, and reimbursement for services needed to remedy the bad health outcomes (Steele, 2015).

Most previous research on physicians' compensation has been conducted in the USA and Canada, where physicians are currently moving towards new innovative payment and healthcare delivery models intended to improve services and reduce costs (American Medical Association, 2022; Mitra et al., 2021; Quinn et al., 2020). Ogundeji et al. (2021) proposed that it is possible to optimize physician payment models in the context of the healthcare system in the USA, suggesting that "to *optimize physician payment models, it may be useful to include a blend of* *financial and non-financial incentives with clear accountability measures*", In other national healthcare contexts, an optimized model appears to be unknown. For example, in the European context, Doneck & Kovak (2014, p. 375) suggested that "*there is no ideal method for payment of providers*". The European Observatory on Health Systems and Policies (Busse et al., 2019, p.1) reported that the payment mechanism depends on the country, indicated by "*Countries use a variety of payment methods to pay the providers of health services because no single payment mechanism can deliver positive incentives for better productivity, cost-effectiveness quality or other desired outcomes.* A review of healthcare payment models in Saudi Arabia (AlRuthia et al, 2020, p. 1525) concluded: *"Thus far, there is not a single payment model that can, by itself, reduce healthcare costs and improve healthcare quality. Future healthcare reforms should use a mixture of different payment models to pay hospitals and physicians".*

The results of research on policies developed and applied in different healthcare systems cannot be generalized from one setting to another, because the political, economic, social, technological, and environmental context of each setting is unique (Rogers et al., 2020). No previous research has been published to explain how and why different compensation models may (or may not) be related to practices of physicians and associated healthcare services in the United Arab Emirates (UAE), providing a rationale and direction for the current research.

Purpose of the Research

The purpose of this research was to address two open-ended qualitative research questions: 1) *what are the perceptions of hospital stakeholders about the idiographic effects and nomothematic effects of different physician payment models on quality of healthcare services in the UAE based hospital?* 2) *What changes might be implemented to physician payment models to improve healthcare services in the UAE based hospital*?

Conceptual Framework

Over 20 years ago, the Institute of Medicine (IOM) in the USA (now named the National Academy of Medicine) defined the quality of healthcare in terms of outcomes, specifically "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes, and are consistent with current professional knowledge" (Institute of Medicine, 2001, p.1). Quality of healthcare was categorized by the following six outcomes: (1) *Safe*: Avoiding harm to patients from the care that is intended to help them; 2) *Effective*: Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and misuse, respectively); 3) *Patient-centered*: Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions; 4) *Timely*: Reducing waits and sometimes harmful delays for both those who receive and those who give care; 5) *Efficient*: Avoiding waste, including waste of equipment, supplies, ideas, and energy; and 6) *Equitable*: Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status. The outcomes of quality of care are one of the most important concepts on the agenda of healthcare policy-makers at national and international levels (World Health Organization, 2018). These outcomes can be applied to both individuals (termed person-centered care), and/or a defined population of healthcare users.

The six dimensions of the quality of healthcare originated in response to a report published by the Institute of Medicine (2001) in the USA about the high frequency of patient deaths from medical errors compared to other causes that had fewer fatalities, but gained more public attention, such as motor vehicle accidents, breast cancer, AIDS, and workplace injuries

(Kohn, 2000). The authors suggested that focusing on individual errors or specific cases to eliminate the causes would not be as effective as adopting a more systemic approach. The six domains of healthcare arose as an operational framework, to achieve a higher probability of reducing errors and improving the outcomes provided by US healthcare organizations.

The six IOM domains are specific to the USA and do not necessarily apply to other contexts in the rest of the world. Since 2001, the IOM components have been criticized because they appear to be overlapping and confusing. The European Commission (2010) redefined quality care as "*healthcare that is effective, safe and responds to the needs and preference of patients"*. Other dimensions of quality care listed by the IOM were deleted because they were *"seen as being part of a wider debate*" (p.1). More recently, Klazinga et al. (2019) argued that the list of dimensions proposed by the IOM blurred the distinction between quality of care and overall health system performance. Attempting to simplify and clarify the concept of quality healthcare, the World Health Organization (2018) recommended that the quality of health services across the world should be simplified to three dimensions, specifically: 1) *Effective*; 2) *Safe;* and 3) *People-centred*. Subsequently, a group of researchers in USA and Europe have suggested updates to the IOM framework, to reflect the increasing complexity, diversity, and inequities which have developed in the past two decades, including the COVID-19 period (Lachman et al., 2020). They proposed additional concepts, including sustainability, accessibility, transparency, privacy, and psychological safety, as additional domains of quality. Their updated framework also included the underlying values of partnerships and coproduction, dignity, respect, kindness, compassion, and holistic well-being of both patients and providers. These additional concepts include social interactions between healthcare providers and patients that go beyond the fundamental outcomes of healthcare services proposed by the Institute of Medicine (2001).

Theoretical Framework

Researchers frequently recommend evidence-based changes to improve the outcomes of healthcare; however, even if these recommendations are translated into innovative changes at one healthcare setting, such changes often disseminate slowly, if at all, throughout the healthcare system (Berwick, 2003). Practitioners in medicine and public health are aware that many logistics and barriers may hinder the dissemination of research findings, and several theories have been developed to help bridge the gap between science and practice (Green et al., 2009). Consequently, I adopted an appropriate theoretical framework to underpin the answering of my second research questions (concerned with future innovative changes to physician payment models in UAE).

Kurt Lewin was the first researcher to propose a change theory in 1947, positing that three stages are necessary to implement changes within an individual or group of individuals, commonly referred to as "*Unfreeze, Change, and Refreeze*" (as cited by Connelly, 2020, p.1). Several other change models have been based on Lewin's original model. John P. Kotter developed a more elaborate change management framework in the 1990s (as cited by Campbell, 2020). Kotter's model is prescriptive theory that underpins my recommendations for future professional UAE practices, based on improved knowledge and understanding of the existing associations between physicians' payment models, physicians' practices, and the quality and outcomes of healthcare services in the UAE. Kotter's framework posits that changes within business environments have both emotional and situational components, outlined by an eight-step model, illustrated by the diagram in Figure 1. Kotter's model was the first to focus less on change itself and more on the people that implement the change. By inspiring a sense of urgency for change, and maintaining that momentum, Kotter's model is appropriate to improve the current climate surrounding a management issue in an organization (Mulholland, 2021).

Figure 1. Kotter's Eight-Step Management Change Model

Source: Management Study Guide (2022) https://www.managementstudyguide.com/ \organizations-must-learn-to-deal-with-radical-disruptive-and-disorienting-change.htm

Rajan and Ganeson (2017) developed Kotter's original framework and added additional suggestions to prescribe how business managers in the real world might implement changes in their organizations. They suggested that this protocol should include: 1) Creation of execution tools and templates for each stage of Kotter's framework; 2) Checking for sources of complacency 3) Creating a ready reckoner with characteristics of guiding coalition and key responsibilities; 4) Creating assessment checklists and guidelines for verifying the accuracy of a vision statement; 5) Defining quantitative metrics at every stage of the change implementation cycle; 6) Identifying job goals and key measures of performance indicators. 7) Implementing mechanisms and template(s) for goal-execution tracking; 8) Change the implementation effectiveness verification mechanism and guidelines; 9) Implement an employee reward system for successful change implementation.

Some of the tenets of Kotter's change model overlap with Everett Roger's Theory of Diffusion of Innovations, which prescribes how new ideas are communicated and implemented over time among the members of an organization (Rogers,1983). Roger's theory posits that healthcare leaders who want to accelerate the rate of diffusion of innovative changes within hospitals (e.g., changes to physician payment models) should implement the following seven steps: *"identify sound innovations; support the innovators; invest in early adopters; make early adopter activity observable; trust and enable reinvention; create slack for change; and lead by example"* (Berwick, 2003, p. 1969). The diffusion of innovations throughout an organization depends upon social capital (i.e., a close network of relationships among the people who live and work in the organization), and the innovations must be widely adopted among those people before the changes have become self-sustainable. Moreover, the environmental context modulates the diffusion of innovations within an organization, including "*geographical settings, societal culture, political conditions, and global uniformity*" (Wejnert, 2002, p.297).

Significance of the Research

The significance of this research is that the findings will contribute to a gap in the literature concerning the associations between different payment models, physician practices, and the quality or outcomes of healthcare services in the UAE. Healthcare leaders and administrators in the UAE, and the specific health system under study, will benefit from new information and improved understanding of how and why different payment systems *may* affect physicians' professional practices associated with the care that they provide in a private hospital.

The use of the word “*may*” emphasizes that exploratory qualitative research can only identify the perceived or idiographic effects of different physician compensation models on healthcare services in the UAE. The measurement of nomothetic effects would require much more extensive, rigorous, confirmatory research involving the collection and analysis of quantitative data. Recommending how UAE healthcare leaders and administrators might actualize aspects of Kotter's model to implement changes in physicians' payment models within their own healthcare systems enlightened by the information generated by this project is the ultimate goal of this research.

Structure of Dissertation

The structure of this dissertation was guided by the "*Standards for reporting qualitative research: a synthesis of recommendation*s" defined by O'Brien (2014). Chapter One (Introduction) presented the research problem, the research questions, the purpose of the research, the relevant theory, and the significance of the research. Chapter Two (Literature Review) focuses on a narrative description of physician compensation models and how they may be related to the quality of healthcare services, based on information extracted from peer-reviewed journals published in the last ten years. Chapter Three (Research Methodology) defines the context and setting of the research, describes and justifies the research paradigm and the research design, discusses the sampling strategy, data collection and analytical methods, and considers ethical issues pertaining to human subjects, as well as my positionality and reflexivity in the context of this research. Chapter Four (Results) presents a summary of the thematic analysis of qualitative data collected in semi-structured interviews, without interpreting the results. Chapter Five (Discussion) provides an interpretation of the results to address the two research questions in the context of the relevant literature, considers the limitations of the research, and makes recommendations for future research, prior to drawing the final conclusions.

First Person Perspective

Many researchers write dissertations and journal articles using third-person pronouns and the passive voice (e.g., *it was done*). Sweet (2017) suggested that "*The point of view you write in affects how readers react to your ideas. When writing a research paper, avoid using first person words like I and we, and second person point of view using you, because they generally create less formal language*". Mudrak (2023) recommended that the first perspective combined with the passive voice must be avoided to maintain an air of scientific objectivity. In contrast, language experts suggest that first-person pronouns should be used to clarify scientific writing (Bryson, 2022). In my dissertation, therefore, I comply with Gastel and Day's (2016, p. 194) recommendation for scientific writing, specifically "*Do not be afraid to name the agent of the action in a sentence, even when it is* “I”.

Chapter Two: Literature Review

Introduction

This chapter presents a narrative review of the literature focusing on physician payment models and how these models may be associated with physician practices and the quality of healthcare services. The rationale that underpins this association is that the heads of various networks of employed physicians propose that it is compulsory to have at least one physician compensation model that can address realities to drive value-based care and make sure that physicians are reimbursed efficiently and effectively (Verduzco-Gutierrez et al., 2021). They also acknowledged the physicians' model has to be based on certain factors. The payment model must be aligned with the type of organization, with the mission and the vision of the organization, and embraces the organizational culture. These three factors were identified as the key influencers of the type of model to be used and in determining the best model at different situations and various times. Furthermore, the proponents of the literatures went further and elaborated that these factors will play a major role in determining the evolution of the models in the future (Verduzco-Gutierrez et al., 2021). This was a prediction since they knew as time goes by, new challenges will evolve and will require to be tackled from a different angle. Saying that, choosing a model was not supposed to be done just simply and then start implementing it. Rather, the model chosen, and the components, too, had to evolve with the organization. In other words, it had to be flexible and not rigid so that it may be adaptive to the changing environment and able to respond to whatever challenges it may encounter as the organization moves forward to achieve its mission.

Physicians' Compensation Models

Salaried Model

The salaried model is one of the most straightforward compensation models. It requires preset income levels. The structure of the physician's salary is not based on productivity (e.g., number of patient visits, number and types of clinical procedures, and severity of cases) but is time-based, and can vary from simple weekly, monthly, or annual payments, to stipends for specific shifts or sessions. Contracted income agreements provide a pre-defined compensation level and usually a pre-established level of performance that is expected from each physician (Hayes et al., 2020; Nguyen, 2017; Tolkoff, 2014).

Known for the lack of incentive pay, the basic salary model is mostly found in highly hierarchically structured and restrictive environments such as large staff model HMOs, Department of veterans affairs which is the largest system in the US, large physician owned practices, and in academic hospitals and medical centers where research and education are integral part of the mission of the organization. The primary aspect of the salaried model is having a predetermined income that leads to a sense of security and a guaranteed payment to the physician. However, physicians have no incentive for higher productivity or to manage costs in this payment model, and they have no direct responsibility for any risk sharing. Any foreseeable risk for the organization is most likely deducted from the salary of the physician before it is computed.

In the salaried model, the physician is expected to follow the policies and regulatory protocols of the employer (Hayes et al., 2020; Nguyen, 2017; Tolkoff, 2014). Typically, all the primary processes for various tasks such as assessment, referrals and consultations to other specialists, have already been established within the system, which is an advantage for some physicians but also may hinder innovative thinking, supporting the status quo. A salaried model is appealing to many organizations due to its simplicity. Many attempts for improvement have been made to the model. For example, a discretionary bonus or deferred compensation such as stock options, may be added at the end of the year based on percentage of physician productivity, percentage of physician's net income, or some performance indicators such as total number of patient visits or patient satisfaction levels.

Physicians may be awarded financial bonuses or incentives on top of their basic salaries for providing additional healthcare services, leading to a high level of variability in their incomes (Fainman & Kucukyaziki, 2020). Physicians may receive incentives for achieving specific healthcare performance or productivity targets, based on the type and amount (but not the quality) of the clinical work that they perform. Bonuses may also be awarded for health promotion activities, such as counseling patients not to smoke or giving them information on how to reduce high blood pressure; for conducting a survey to determine if patients are satisfied with their treatments and how their care was handled; or for adopting new technology that will save time and money, such as software for maintaining healthcare records. The different criteria for awarding incentives increases administrative costs and makes the compensation process more complicated in terms of managing and monitoring (Bronchetti & McInerney, 2019). Advocates of incentives believe that offering bonuses to physicians leads to better healthcare outcomes, one of the studies showed that Individual physician incentives based on own production do increase physician productivity (Conrad et al., 2002). Depending on the objectivity of the criteria used to evaluate the payment model, and the level of misuse, incentives may increase or decrease the performance and productivity of physicians. The general evidence-based conclusion of researchers is that incentives do not axiomatically lead to better patient outcomes (Burstein et al. 2022; Doran et al., 2017; Friedberg et al., 2020).

Equal Shares Model

The equal shares' compensation model is mostly used in small physician groups or specialty practices. It is based on simple calculation through dividing the income after equal distribution of the expenses among the physicians' group. The equal risk allocation among group physicians encourages all of them to equally invest in the group practice. (Khoja, 2016). Typically, in this type of model, the capital share of each physician into the group practice will be the same amount, so the equal sharing of both expenses and revenue would be a fair method of compensation. Pay could also be unequal based on differences in capital contribution. What makes that model attractive in many small practices is the fact that it is easy to use. One of the advantages of that model is that it discourages overutilization of resources by physicians, as any extra expenses are deducted from the aggregated revenue. This point is important as there is no control over the utilization of those treatments and those investigations which would lead to the cost exceeding what is claimed and charged to the insurance companies. The equal shares model works best when all physicians have the similar levels of competency and productivity and are equally motivated to contribute to the practice. However, due to the inevitable differences in experience and skill levels, that model can create conflicts concerning compensation. Physicians with higher levels of productivity may feel it is unfair for them to have to share their income with those who are less productive. Although ownership incentives are high, the equal shares method has no incentive for efficiency or high productivity, especially for those who are less productive in the group (Bronchetti & McInerney, 2019)

Fee for Service (FFS) Model

Under fee-for-service payment model, physicians are reimbursed for the services provided according to pre-established reimbursement rates for the types of service offered. (Ikegami, 2015; Kemble, 2012; Li et al., 2014; Lyu et al., 2017; Magill, 2016; Nguyen, 2017). Fee-for-service (FFS) has almost exclusively been used in the United States and Canada since the 1980s. A major disadvantage with FFS is that it provides a financial incentive to generate greater volumes and numbers of services (that may not be indicated) because physicians have interest through receiving higher incomes if they will provide more services, especially those that are high-cost. This is known as physician-induced demand or provider induced demand. (Mathes et al., 2014).

Mitra et al. (2021) conducted qualitative research to explore the perceptions of FFS among physicians in Canada. One physician spoke for many by stating, "*I will never work in a fee-for-service clinic because I just know that the approach I have towards medicine and what I want to focus on doesn't co-align with the values you need to be financially successful in those models*." Most of the physicians complained that the fee-for-service model compelled them "*to see high volumes of patients without sufficient time with each patient to address their increasingly complex needs*" (p. 805).

Value-based Care

The fee-for-service (FFS) models have been much maligned (Zukevas & Cohen, 2016) and value-based care may ultimately replace FFS for healthcare provision and physician compensation (Burwell, 2015; Hillary et al., 2016; Squitieri et al., 2017). Value-based refers to the quality of the care that patients are receiving, rather than the quantity. The ultimate goal of a value-based system is to maximize value for patients measured in terms of health outcomes achieved per unit of cost. This data driven vision of healthcare reform may not only improve quality and efficiency, but it may also reduce costs (Mcaskill, 2014). However, the transition from FFS to value-based care is not simple, because it requires a detailed understanding of the statistical relationships between physician practices, cost, quality, outcomes, and patient satisfaction (Wager et al. 2021; Phillips, 2022).

Capitation Model

Under the capitation payment model, physicians are compensated through a prepaid fixed amount for each patient enrolled into their practice. In most capitation models the healthcare system that gets the capitation and the physicians are funded by another method. The only example of physicians receiving capitation directly is the concierge model of primary care. The amount of capitation is based on studies reflecting the expected medical services expenditures within a specified time period for each patient enrolled into the plan (Kagan, 2022; Lameck, 2017). Payment is fixed, so there is an incentive for the healthcare system to control services provided to ensure efficient use of resources and maximize income. This minimizes unnecessary services. However, capitation may also lead to compromise in the quality of services offered to the patient or limit a patient's access to necessary services to control cost. (Mathes et al., 2014). The capitation model promotes an increase in the number of patients with no incentive to increase the quantity of health care services provided. Physicians are motivated to accept the healthiest patients, and reject or refer the less healthy patients, in order to reduce financial risks at the practice level and to minimize the time physicians spend managing difficult patients with many conditions (Rudmick et al. 2014).

Sessional Model

With the sessional model, physicians are paid on an hourly or daily based rate. Sessional payments provide incentives for physicians to provide additional services. So, that model of compensation concentrates on the productivity of physicians during the agreed upon session. It leads to some inefficiencies in the services provided. That model is applied in emergency and psychiatric clinic settings (Mathes et al., 2014).

Contractual Model

With the contractual model, funding is based on a pre-negotiated amount for an agreed upon volume of specified services during a specified period of time. Unlike the fee-for-service model, both the amount of payment to physicians and the volume of services provided are determined during contract negotiations. This payment model eliminates the driver or the incentive to provide additional unnecessary services. That type of contractual payment provides pooled funding to physicians in academic institutions for teaching, research, administration and clinical services. (Mathes et al., 2014).

Pay-for-Performance Model

Because pay for performance has been used in many systems as a payment method for choice so I am highlighting it separately here. With the Pay-for-Performance (P4P) model, the payment is designed to measure quality of healthcare based on a scoring system. P4P generates the incentives in an enhanced FFS model. with a quality or outcome adjustment. The framework can include several criteria such as outcomes of patient care, access to necessary care and services, patient satisfaction score and characteristics of the compliance to the clinical practice guidelines. Physicians are financially rewarded for achieving quality targets based on the number of points scored (Sura & Shah, 2010). Pay-for-performance involves the development of financial incentives to physicians, based on their productivity (Close et al, 2018; Li et al., 2014; Lavergne et al., 2016; Pickard, 2014). The pay-for-performance movement has been promoted by slogans to pay for "*quality instead of quantity,*" "*value instead of volume*," and "*health instead of healthcare*" (McWilliams, 2022, p. 2114).

Associations between Physician Payment Models and Quality of Healthcare Services

The associations between physician payment models and the quality of healthcare services are the primary focus of my research. For example, in the Pennsylvania-based Geisinger Health System, the model of compensation was changed from pure fixed salary to a mix of 80% of total cash compensation based on metrics such as panel size (defined in terms of the number of patients seen per day, the number of days the provider is available per year and the average number of visits per patient per year).Twenty percent of total cash compensation (an arbitrarily chosen threshold) is linked to how well physicians improved quality and reduced costs. Within several years of offering this mixed-payment incentive, the system achieved better outcomes at a lower cost for 18 common treatment interventions, due to mitigating unjustified variation in hospital-based care. For outpatient care, optimizing management of high-risk chronic diseases yielded consistent 30% absolute declines in the need for acute-care hospitalization and rehospitalization. There were significant decreases in the percentage of patients with prevalent chronic conditions. In that kind of system and others, require efficient access to practice information on volume of patients seen, utilization, costs, and patient-reported outcomes and this requires a mature and usable informatics infrastructure and people who know how to use it to provide rapid, appropriate information to the right people at the right time. The reduction in the total cost of care did not stem from restrictions in access to care, but from real improvements in health outcomes (Steele, 2015).

Looking into the global context of healthcare, most healthcare organizations in LMICs currently pay physicians under a production-based model with small opportunities for quality-based incentives (Kruk et al., 2018). The typical employed physician of a hospital, health system, or large medical group, has a package of total cash compensation that includes a basic salary combined with a modest incentive opportunity. Total cash compensation is based heavily on productivity, with volume measures driving much of pay determination. In summary, until material reimbursement dollars are tied to quality and value, compensation plans will continue to reward productivity first, with quality as a distant second (Mathes et al., 2014).

The use of provider payment incentives to improve the quality of healthcare in the USA has become widespread; however, incentives promoted by the Affordable Care Act (2010) have had limited impact on the value of care and have not led to better patient outcomes (Doran et al., 2017). However, the primary goal of the ACA was to provide adequate health insurance to under- and uninsured people; enhancing quality of care was of secondary interest. Limited research has been conducted on the effects of incentivization on quality of healthcare outside the USA and Europe. Li et al. (2020) reported that in China, a fee-for-service payment system incentivized testing and treatments over health prevention. An accountability system to incentivize high-quality and high-value care was recommended. If financial incentive programs continue to be implemented as a universal tool to increase the value and quality of healthcare services, then improving the design of the programs will be necessary to ensure their success in the future. A rigorous statistical evaluation is needed to design payment systems that incentivize high-quality and cost-effective healthcare (Emmanuel et al., 2016).

Rethinking Physicians" Compensation

Healthcare professionals know more about treatments, illnesses, and other relevant healthcare services than their patients (Chambers, 2020). Because of this asymmetry, patients expect healthcare professionals to act in their best interest and inform them of any treatments or other relevant services they may need. Therefore, doctors tend to determine the demand for a service on behalf of the less-informed patient, and then supply that service. If the doctor is profit-driven, they may order more services than needed (e.g., unnecessary blood tests), which can lead to an inefficient allocation of resources (Kerr & Ayanian, 2014). The biggest risk for the patient is that the physician may prescribe excessive treatment and interventions.

It is usual for patients to place trust in the superior medical knowledge of the physician, and accept the proposed treatment plan. This is known as "supplier induced" demand, which is observed to be widespread in countries where physician compensation is based on fee-for-service (Afshari et al., 2021).

Healthcare leaders are struggling to align their system's financial and quality goals with those of physicians, while balancing the increasing demands and stresses on physicians and their patient care teams. Physicians and advanced practice providers are crucial to performance, quality, safety, care utilization and patient satisfaction goals, all of which impact an organization's financial viability. This is why providers' compensation must be aligned with them. In addition, providers are less likely to burn out when mutual goals have been established between them and their health systems (Gee, 2022a; 2022b).

Compensation Structure Versus Organizational Culture

The most appropriate compensation plan framework is an important component of a high-performing healthcare delivery organization. It provides a tangible and aligned structure for a winning strategy that benefits patients, providers, and payers. Creating a unified plan also helps to integrate providers with each other and with the system via a common core that functions across multiple departments but is flexible enough to contain specific departmental values, metrics, variables, and incentives. Ultimately, this framework should facilitate a bridge to a more risk based, population health focused care delivery system as measures, metrics and compensation are re-aligned to value-driven growth models.

A compensation structure is also dependent on a physician organization's culture and dynamics. Leaders should ask these questions (Gee, 2022b): 1) Where does your organization fall on the organizational maturity spectrum? 2) Are the physicians ready and motivated to move to a unified and aligned compensation plan. 3) Can this plan evolve and be repeated with other physician groups or will you need to tailor the structure for each group you employ, thus defeating the implementation of a unified plan?

Healthcare system leaders are realizing the importance of getting physicians to align strategically with goals to improve key performance areas such as revenue, care redesign and efficiency, but ignoring burnout limits physician engagement (Verduzco-Gutierrez et al. 2021). A variety of strategies can combat the problem including education and onboarding activities, working on patient care teams with non-physician providers to help spread out work and documentation, training physicians to become team leaders, and helping physician organizations become more successful in lowering costs and improving quality of healthcare (Gee, 2022a). Quality and citizenship requirements should always be part of physician leadership onboarding and/or training so physicians know exactly how the organizational culture translates into care delivery performance. There should be minimum expectations for citizenship goals within the physician group and the hospital or healthcare system. Citizen goals can include engaging in leadership opportunities, getting along with peers, having good charting habits and minimizing compliance risks (Gee, 2022b).

Effects of Manipulating Physicians Payment Models

The American Medical Association has conducted two experiments to examine how alternative payment models affected physician practices in the USA (Friedberg et al., 2015; 2020). The experiments were conducted in 31 healthcare settings with a variety of sizes, and specialties. The financial incentive schemes were systematically modified by the researchers before implementing the alternative payment models to individual physicians. Many problems were experienced. Operational errors limited the physicians' abilities to respond, resulting in non-payment of incentives, and the unwillingness of the physicians to participate in the new schemes. The physicians found that understanding the structure of the new alternative payment models entailed a significant investment of time and technical resources. After implementing the new payment models, some physicians did not change their quality of care, but continued to received incentives for their pre-existing quality of care. Moreover, the physicians became more aware of the financial risk associated with the implementation of alternative payment models.

Conclusion

Rising healthcare costs imply that innovative approaches must be developed and implemented to deliver more cost-effective and equitable healthcare services in the future. Efforts to improve healthcare quality must be coordinated and strategic to achieve maximum impact. Quality is a meaningless concept in healthcare if it does not improve either the patient’s outcomes and/or the costs of care. A management plan that focuses on improving patient outcomes, organizational effectiveness, practice efficiency, financial sustainability, and provider and clinical system alignment may create the desired culture of accountability, performance, and long-term organizational success. The aim of any physician payment structure should be to reward high-quality care and to permit the development of more effective ways of delivering care to improve the value obtained for the resources expended. No physician payment model should ever create barriers to improving the quality of care

Chapter 3 describes and justifies the research methodology devised specifically for the purpose of the current research that may ultimately contribute to the evolution of physician compensation plans to achieve a better balance between performance, productivity, and quality in the healthcare system in the UAE.

Chapter Three: Research Methodology

Introduction

This chapter describes and justifies my research methodology; to explain how and why I chose and implemented certain qualitative methods recommended in the literature to ensure the generation of valid results to address two research questions: 1) *What are the perceptions of hospital stakeholders about the idiographic effects of different physician payment models on quality of healthcare services in the UAE based hospital?* 2) *What changes might be implemented in physician payment models to improve quality of healthcare services in the UAE based hospital*? These questions were underpinned by a conceptual framework assuming that effectiveness, patient-centeredness, safety, timeliness, efficiency, and equity are important factors to ensure that patients receive high-quality care (Institute of Medicine, 2001).

The two open-ended questions satisfied the requirements for exploratory qualitative research because they facilitated exploration of the "*What*", "*Why*", *Who*" and "*How*" of a defined phenomenon experienced by stakeholders in a specific healthcare setting (Cypress, 2015, p. 356). The first question refers to *idiographic* effects, defined as causal explanations for a phenomenon rooted in the subjective perceptions of individuals. The analysis of idiographic effects assumes that every human being has a unique perspective, and hence every person should be studied individually (Piccirillo et al., 2019). Idiographic effects are derived from person-orientated qualitative data and are embedded in a specific cultural, historical, and environmental context and encompass a continuum of insights into causal explanations derived from the unique meanings that every individual gives to his/her lived experiences (Barlow & Nock, 2016).

The research questions did not refer to *nomothetic* effects, which cannot be translated to the individual level, because they relate to causal relationships identified through the analysis of samples of quantitative data to create an inferential statistical model, based on the assumption that the model can be generalized to the population from which the sample data were drawn (Crossman, 2019; Hernán & Robbins, 2020). However, Taq (2010, p.263) disputed the differences between nomothetic and idiographic effects, asserting that there "*is no difference in principle between causality in qualitative and quantitative research*". Both idiographic and nomothetic effects are confounded by the fallacy that if a prior event (e.g., the practices of a physician) is immediately followed by a subsequent event (e.g., an improvement in the quality of health care) then the prior event is the axiomatic cause and the subsequent event is the axiomatic effect (Grouse, 2016; Mariusz, 2015).

Philosophical Stance

Prior to choosing and using an appropriate research design to address my research questions, I looked through a philosophical lens, in order to gain an underlying perspective. I defined my philosophical stance by answering the following questions: what is the nature of reality? (ontology); how is knowledge acquired? (epistemology); what is the value of research? (axiology); and what is the process of research? (methodology). After answering these questions, I was able to adopt an appropriate philosophical stance, paradigm, or world view (Creswell & Creswell, 2018). My chosen research design was a qualitative ground theory research study, rooted in social constructionism or constructivism, which assumes that facts and feelings are not separate, and that knowledge is not an objective reality, existing outside the human mind. Knowledge is created subjectively by human beings, in their own minds, based on the meanings that they give to their own unique lived experiences, perceptions, and social interactions (Burr, 2015). Social constructionism assumes that all truth is relative because knowledge is shaped personally by individuals who do not view the world through the same lens, and so their understanding of reality is based on their own unique perspectives (Amineh & Asl, 2015). Furthermore, social constructivism assumes that knowledge has no purpose unless it is created and can be applied in practice in a social context (Rannimake et al., 2020). The purpose of creating knowledge is to take action to advance oneself and society at large, to break barriers, and to dig deeper into human enlightenment (Rey & Bason, 2019).

Social constructivism is implied by the research question referring to the "*idiographic effects*" of physician payment models on the quality of healthcare services. The answer to this question is framed by the unique perceptions and perspectives of a purposive sample of healthcare stakeholders in the UAE based hospital. In terms of the constructionist paradigm, "*idiographic effects*" were embedded in the cultural, historical, and environmental context of healthcare services in the UAE, based upon what each individual stakeholder said and believed to be true.

Research Design

My research design, aligned to my philosophical stance as a social constructivist, was an exploratory research study. My research was exploratory, because I collected empirical data to address questions about a social phenomenon that has not previously been answered in depth, and my findings provided the groundwork for future confirmatory research (Stebbings, 2001). The American psychological association dictionary (2023) defines a grounded theory study as the *"a set of procedures for the systematic analysis of unstructured* qualitative data *so as to derive by* induction *a supposition that explains the observed phenomena. A researcher typically observes the entity of interest in a natural setting before drawing conclusions about its nature and existence. "* Chun Tie et al., (2019) states that" *Grounded theory is a well-known methodology employed in many research studies. Qualitative and quantitative data generation* *techniques can be used in a grounded theory study. Grounded theory sets out to discover or construct theory from data, systematically obtained and analyzed using comparative analysis*. ". The "*specific real-world subject*" that I explored in my qualitative research study focused on physician payment models and how these models may be associated with physician practices and healthcare services in the UAE. The "c*ommunit*y" of my research study consisted stakeholders in healthcare services at a private hospital in the UAE.

The grounded theory Research findings and recommendations can contribute to policy or knowledge development, service provision and can reform thinking to initiate change in the substantive area of inquiry (Chun Tie et al., (2019)). Consequently, I describe in detail the methods that I chose to conduct my qualitative research study, including the alignment between my philosophical stance as a researcher, the context and setting of my research, and the methods I chose to collect and analyze a set of empirical qualitative data.

Research Context

The UAE provides universal healthcare for all nationals. Employers in UAE provide health insurance to all nationals for up to one spouse and three dependents, whilst expats (non-UAE nationals) are required to have mandatory health insurance (World Health Organization, 2022). The UAE has also developed a private healthcare system. The price tag matches the high quality and the costs have recently been rising by 13% per year (Arnold, 2022).

Healthcare provision in the UAE has undergone rapid growth in the last decade, concomitant with an increasing high demand for the services of physicians (Jones, 2022). The nature of the modern multi-specialty healthcare system in the UAE is complex, including many new state-of-the-art clinics and facilities, with many physicians coming to work in the UAE from around the world, and medical tourism is thriving. The World bank ranked Dubai and Abu Dhabi as some of the most popular medical tourism destinations, and more than 300,000 tourists per year travel to the UAE specifically for high quality healthcare services (Arnold, 2022). Consequently, the development of innovative, competitive, and cost-effective remuneration packages for physicians working in different sections of the healthcare system in UAE are vital.

A variety of options have been developed specifically for the compensation of primary care physicians in the UAE. According to Khoja (2016) the following are the most common payment structures: 1) *Basic salary:* General practitioners in the UAE receive a basic salary that is not related to productivity; however, basic salary is not used to remunerate specialist physicians, because other remuneration packages are preferred. 2) *Salary plus allowances:* Many employers of specialist physicians in the UAE split up their basic salary and allowances or financial entitlements as defined by UAE Federal Law No. 8 of 1980 (Labour Law). Allowances or entitlements that are excluded from the calculation of basic salary include annual leave, sick leave, end of service gratuity, and payment for overtime. *3). Revenue share model:* Some specialist physicians in the UAE participate in commission-based remuneration schemes whereby they receive a commission, or a share of profit based on the type and amount (but not the quality) of the clinical work that they perform. Some employers in the UAE provide specialist physician's remuneration based only on commission or profit share. In some hospital departments in the UAE, these incentives are pooled together, then divided at the end of the month according to agreed percentages which differ among consultants and specialists. Some physicians may choose not to receive standard allowances in order to be eligible to participate in potentially more lucrative commission or profit-sharing incentives; however**,** payments made through these incentives cannot replace a physician's entitlement to receive the minimum allowances prescribed by the Labour Law (Tithecott, 2014).

Research Setting

My research setting was a 100-beds private JCI accredited hospital situated on the East Coast of UAE. Table 1 summarizes the number of physicians and patients who attended each department in 2021.

Table 1. Number of Physicians and Patients Attending each Department in 2021

Department	Physicians	Outpatients visits	Medical and Surgical Admissions
Cardiology	2	7383	227
Dental	5	10742	22
Dermatology	2	11537	0
Ear, Nose, and Throat	2	8388	88
Emergency	6	17164	0
Gastroenterology	2	4774	244
General practitioners	2	9642	0
Internal Medicine	2	15183	363
Nephrology and Dialysis	1	3663	53
Neurology	1	3096	33
Obstetrics and Gynecology (OBGY)	2	29297	1335
Ophthalmology	7	10494	122
Pediatrics	5	15667	1587
Pulmonology	1	5540	215
General Surgery	4	7177	814
Urology	1	5747	402

This hospital is the largest and only healthcare institution in the UAE east coast comprising 100% first class private rooms and exquisite VIP suites for optimum comfort. The hospital has a fully-fledged emergency department, operating theatres, outpatient departments, ICU, NICU, delivery suites and day surgery facilities and provides inpatient and outpatient services. The hospital is equipped with advanced diagnostic equipment such as Open MRI, CT scanner, mammography, a suite of modern laboratory facilities, 4D ultrasound and an audiology room. The outpatients and admissions are mutually exclusive groups. The hospital does not have an oncology department. Patients requiring the services of oncologists are referred to other hospitals. The hospital does not have separate departments for endocrinology, rheumatology, or hematology. The services of these three departments are provided in the Department of Internal Medicine.

Sampling Strategy

My sampling strategy assumed that a healthcare system needs to choose a physician compensation program that not only fulfills the need to balance productivity with quality and outcomes, but also ensures that the physicians agree with how they are paid (Burstein et al., 2022). Therefore, all the stakeholders in a healthcare system, including hospital leaders, managers, practicing physicians, and other clinicians (e.g., nurses) have a vested interest in promoting beneficial changes in the structure of physicians' compensation. For this reason, I used purposive sampling (i.e., a non-random sampling strategy) in which I deliberately chose a set of participants who were most likely to provide relevant information to answer my research questions. I approached a total of 30 hospital stakeholders and asked them verbally if they wanted to participate in this qualitative study; however, 13 of them did not participate, because they did not have the appropriate knowledge and experience, or they were afraid to provide feedback on the sensitive topic of physician's compensation. Consequently, the total sample size I selected for this study was N = 17. This sample was not representative of the entire population of hospital stakeholders.

Purposive sampling may be either homogeneous or heterogeneous (Etikan et al., 2016). A homogeneous sample consists of participants who represent a single sub-group with similar backgrounds and perceptions within a defined population. A heterogeneous or maximum variation sample consists of participants who capture an extreme amount of variability among the different subgroups within a defined population. I chose a heterogeneous sample comprised of five different groups of stakeholders at the research setting, including hospital leaders, financial or insurance managers, physicians working in different departments, nurses, general practitioners, as well as patients who had received treatment at the hospital.

I chose diverse groups of hospital stakeholders to elicit divergent opinions regarding the perceived associations between physician payment models and healthcare services in the UAE. A heterogeneous sample facilitated the collection and analysis of a diversity of insights into the perceptions of different individuals who may view the world through mutually exclusive lenses (Mayo et al., 2022). Because this research focused on the idiographic (i.e., qualitative) and not the nomothetic (i.e., quantitative) effects of physician payment models on the quality of healthcare services, a large sample size of participants (e.g., estimated by power analysis) to facilitate generalization from the sample to the population was not required (Boddy, 2016). The purpose of this study was not to obtain a representative picture of the experiences and perceptions of the whole population of hospital stakeholders in the UAE. Moreover, a large sample size was not essential to fulfil the central role of qualitative research in the field of healthcare in the 21st century, which is not to test hypotheses but to generate sufficient evidence to expand or build a theory (Collins & Stockton, 2018; Grbich, 2019). In the context of qualitative research, the minimum sample size to generate sufficient evidence to expand or build a theory is one person; however, many people are required to establish a theory, and a theory only becomes established or confirmed after it has been accepted by the scientific community as a practical and reliable working model of the system in question (Gelso, 2006).

Description of Participants

Table 2 defines N = 17 stakeholders who formally agreed to participate in this study, classified into five groups.

Table 2. Participants (N = 17)

Category	Description	Number	Title	Pseudonym
Hospital leaders	Paid as per license	5	Chief executive officer Chief medical officer Quality manager Patient happiness manager Chief nursing officer	HL1 HL2 HL3 HL4 HL5
Physicians	The physicians included specialists, consultants, paid as per license. The heads of clinical departments spent most of their time on clinical duties and were rarely engaged with administrative work. They were compensated in the same way as the licensed physician.	5	Head of OBGYN Head of Pediatrics Radiologist Pathologist General practitioner *	PH1 PH2 PH3 PH4 PH5
Nurses	Paid as per license	2	Registered Nurse 1 Registered Nurse 2	NU1 NU2
Patients	The patients paid for health services; 20% paid for out of their pockets, whilst 80% were covered by health insurance.	3	Patient 1 Patient 2 Patient 3	PT1 PT2 PT3
Finance or Insurance managers		2	Finance director Insurance manager	FD1 IM1

* Note: The general practitioner is covering outpatient clinics in the hospital as part of his duties.

The purposive sample included nine participants who were expected to have knowledge and experience in hospital budgetary or financial issues, including five hospital leaders, two practicing physicians (who were also heads of departments) and two managers of finance and insurance. The sample also included three physicians, two nurses and five patients who were expected to have little or no experience in hospital budgetary or financial issues. Agreement or commonality was therefore not expected across all the sub-groups regarding their perceptions about physician payment models.

Data Collection

I collected qualitative data using semi-structured interviews with the purposive sample of participants outlined in Table 2. I conducted a semi-structured interview with each participant to collect rich qualitative data. I devised a list of open-ended questions (see Table 3) based on a series of topics that I wanted to cover in each interview, most of which were related to the Institute of Medicine (2001) dimensions of quality healthcare. I also interjected other questions to thought-probe for answers, pursue a line of discussion, and/or to allow the interviewee more space to talk freely. Semi-structured interviews were conducted because they are more effective than structured interviews to gain broader and deeper insights into the participants' perceptions and the meaning they give to their lived experiences (King et al., 2019; Robinson, 2014; Robison et al., 2019). I audio-recorded the interviews and transcribed everything that was said by myself and the interviewees word-for-word into a Microsoft Word document.

Table 3. Interview Questions

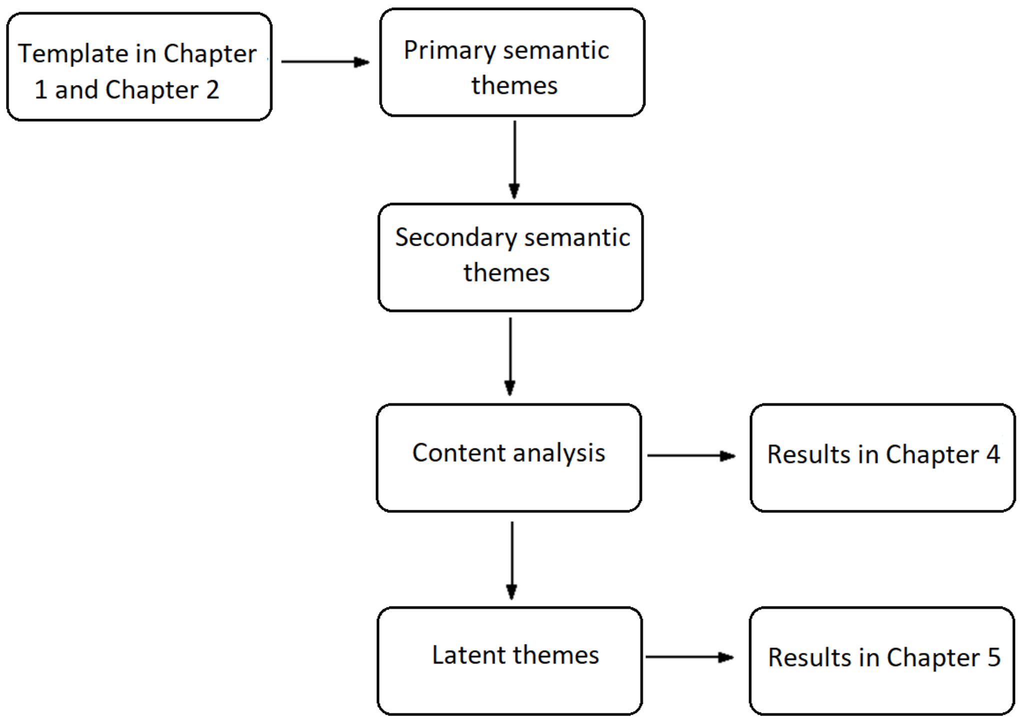
Question	Institute of Medicine (2001) dimension
1. What are the effects of UAE contextual environment (political, economic, social, technological, and environmental on the choice of physician payment models(s)?	
2. Who is affected by physician payment models(s)? How are they affected?	

3. In your view, what are the effects of the three models of physician's payment implementation implement in this health system on the safety of the care?	Safety
4. Being a JCI accredited healthcare system, how best would the physician payment model(s) support the implementation and compliance to international patient safety goals?	Safety
5. Would you explain to me the effects of the implemented physicians' payment models on the effectiveness of the care offered.	Effectiveness
6. In your opinion, can we relate those payment systems to incidents of underuse or misuse?	Effectiveness
7. Do you believe the physician payment system implemented in this healthcare system supports providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions?	Patient-centered
8. In your view, what are the effects of the implementation of physicians' payment models on the ability of the healthcare system to offer patient centered needs?	Patient-centered
9. In your opinion, what are the effects of the payment models on your ability to offer or receive timely care in this healthcare system?	Timely
10. Would you explain to me what are the effects of the implementation physicians' payment models on the efficiency of care offered in the healthcare system?	Efficiency
11. In your opinion, do you think there are any effects of the payment models on the equity of care you are offering or receiving in this healthcare system?	Equity
12. What are the effects of the physicians' payment models on the equity of care in this healthcare system?	Equity

Data Analysis

The purpose of the data analysis was to identify, quantify, and interpret the themes that emerged from the interview transcript. A theme "*captures a salient aspect of the data in a patterned way, regardless of whether it captures the majority experience*" (Scharp and Sanders, 2018, p.1). However, "*there is no clear agreement about how researchers can rigorously apply this metho*d" (Nowell et al. 2017, p.2). I could potentially generate themes in several different ways, including the alternative approached applied for case studies (Heale & Twycross, 2017); content analysis (Neuendorf, 2017); discourse analysis (Sekunda et al., 2020); ethnology (Bartlett, 2022); phenomenology (Neubauer et al., 2019); hermeneutical phenomenology (Guillen, 2019); interpretative phenomenological analysis (Tuffour, 2017); Husserlian phenomenology (Davidsen, 2013); grounded theory (Charmaz, 2014); narrative analysis (Josselson & Hammack, 2021; Ntinda, 2020) or template analysis (Brooks et al., 2015). My approach, outlined in Figure 2, incorporated a combination of methods.

Figure 2. Outline of Thematic Analysis



I first interpreted the interview transcript using a template analysis to identify the primary and secondary semantic themes, followed by a content analysis, to summarize the composition and structure of each theme. I then adopted a grounded theory type of approach, to identify and explain the underlying meaning of the latent themes, and to address the research questions.

Identification of Semantic Themes

If a phenomenological approach is used to identify themes, then "*bracketing*" is needed (Sorsa et al. 2015, p.8); meaning that researchers must set aside all prior knowledge and understanding of the phenomenon of interest prior to collecting and analyzing the data. The purpose of bracketing is to avoid contaminating the perceptions of the research participants with the preconceived perceptions or prejudices of the researcher (Fischer, 2009; Tufford & Newman, 2010); however, adopting a neutral stance, eliminating prior assumptions, and acting non-judgmentally is difficult for qualitative researchers to achieve in practice (Baksh, 2018). In my research study, I did not implement bracketing, or conduct a phenomenological analysis. I used a preconceived template to underpin the collection and interpretation of the interview transcript. The template consisted of keywords based on information from the literature review in Chapter 2, and the conceptual framework in Chapter 1, specifically the Institute of Medicine (2001) dimensions of healthcare quality.

The first stage of the thematic analysis was to identify the semantic themes, defined by Braun et al. (2018, p. 5) as "*summaries of what participants said in relation to a particular topic or data collection question*" (Braun et al. 2018, p. 5). Semantic themes represented the fundamental, literal, factual, or objective meanings of the participants' responses to my interview questions. The generation of semantic themes involved a top-down or deductive progression from a template of primary themes based on generalized information in Chapters 1 and 2, to specific details about the healthcare services at the hospital. The ten semantic themes in this template were: 1) *Physician Payment Models Implemented at the Hospital*; 2) *Environmental Context for Payment Models*; 3) *Stakeholders Affected by Payment Models;* 4) *Misuse of Payment models*: 5) *Payment Models and Safe Care*; 6) *Payment Models and Effectiveness of Care*; 7) *Payment Models and Patient-Centered Care*; 8) *Payment Models and Timely Care*; 9) *Payment Models and Efficiency of Care*; and 10) *Payment Models and Equity of Care*. The secondary themes included the stakeholders' lived experiences and perceptions of physician payment models, and multiple facets of safe, effective, patient-centered, and equitable healthcare.

Content Analysis

Content analysis is defined as systematic, objective, and quantitative method to describe the composition and structure of qualitative data (Neuendorf, 2017). I used a conceptual content analysis to describe the frequency distributions of the primary and secondary semantic themes. I used relational content analysis to develop the conceptual analysis further by examining the cross-tabulations between the frequencies of the themes and the frequencies of the participants. However, the number of participants within each group of leaders, managers, physicians, and patients among the 17 hospital stakeholders was too small to conduct inferential statistical analysis. I therefore did not measure the strengths of the associations between the cross-tabulated categories using inferential statistics, such as Chi-square tests, log linear models, or correspondence analysis.

Identification of Latent Themes

The second stage of the thematic analysis was to develop the latent themes (i.e., the more complex underlying meaning and implications of the participant's experiences and perceptions). Braun and Clarke (2019, p. 846) defined latent themes as "*the patterns identified and developed later in the analytic process, building on and representing the outcome of the coding*".

Grounded Theory

The identification of latent themes using a grounded theory approach was the final and most important stage of the thematic analysis. The aim of this type of approach was to "*generate theories regarding social phenomena: that is, to develop higher level understanding that is "grounded" in, or derived from, a systematic analysis of data*" (Lingard et al., 2008, p. 459). This final stage of the thematic analysis fulfilled the central role of qualitative research in biomedicine and healthcare, which is to build or expand upon a conceptual or theoretical framework (Collins & Stockton, 2018; Grbich, 2019). I achieved this stage by reviewing and synthesizing the primary and secondary themes, and using inductive reasoning to propose latent themes that reflected the underlying or theoretical meaning of the data, and to answer the research questions. I identified two latent themes to address the two research questions: 1*)* *Relationships between Physicians' Compensation Models and Healthcare Services*; and 2) *Proposed Changes to Physician Compensation Models.*

Stepwise Description of Thematic Analysis

The explicit details describing how I conducted each step of the thematic analysis are as follows:

1. I copied the electronically recorded interview transcript containing all my questions (see Table 3) and the responses provided by each of the 17 participants, without editing, into an MS Word document. I reviewed and re-reviewed each interview transcript several times, so that I became very familiar with all the data.

2. I imported the MS Word file into NVivo 12-Plus software (QSR International, 2023). I used NVivo as a convenient digital platform to store, manage, examine, and search the qualitative data for themes, using the protocols described in the methodological literature (Allsop et al., 2020; Feng et al., 2019; Maher et al., 2018; Zamawe, 2015).

3. Initially, I reviewed the entire transcript and highlighted specific sections of the text manually and non-judgmentally, in order to identify emergent themes. Everything the participants uttered at the interviews that I considered relevant to answer the research questions. I did not highlight any quotations because I agreed with them, nor did I ignore or exclude any quotations because I disagreed with them.

4. I used NVivo software to fragment the text into many different pieces like the breaking of a mirror, so that each fragment reflected individual facets of the interviewees' perceptions and experiences (Beekhuyze et al., 2010). I used the autocoding feature of NVivo to automatically search for and highlight sections of text without my intervention using pre-specified keywords (e.g., "*competition, effect, effectiveness, efficiency, equity, equitable, income, incentives, misuse, revenue share, safe, safety, salary, patient-centred, services, timely*"). These keywords were based on template or list of expected themes that were defined before the collection and analysis of the qualitative data, as recommended by Brooks & King (2015). NVivo included all the text in the interview transcript in the thematic analysis, including the respondents' stumbles and repetitions, irrespective of whether they made sense.

5. My initial template was based on the six dimensions of quality of care proposed by the Institute of Medicine (2001) outlined in Table 3. I manually attached a unique code to label each section of text using six primary themes: Safety, Effectiveness, Patient-centeredness, Timeliness, Efficiency, and Equity. However, the autocoding process did not classify all the text into themes. I manually classified and coded the remaining text, and added four emergent themes, specifically: Physician Payment Models, Environmental Context for Payment Models, Stakeholders affected by Payment Models, and Misuse of Payment Models.

6. In the context of a thematic analysis using NVivo, semantic themes have a hierarchical structure, in which secondary or subordinate themes (or child nodes) are embedded within primary themes (or parent nodes). I reviewed and re-reviewed the text several times and manually classified the constituent quotations of each primary theme into multiple secondary themes. Each secondary theme manifested a mutually exclusive facet of the primary theme (e.g.,

the degree to which the participants perceived that the quality of care for patients at the hospital may (or may not) be safe, effective, efficient, patient-centered, timely, and/or equitable).

7. I conducted a content analysis by examining and tabulating the cross-tabulations of the frequencies of quotations within each of the thematic categories vs. each of the five groups of participants.

8. I combined the output of NVivo with the traditional subjective method of coding the data manually, in order to identify the latent themes through the application of "understanding, detail, intentionality, and thoughtfulness" (Humble, 2012, p.122). I used the output of NVivo as "*a source of empirical information and inspiration to trigger imaginative insights*" and to "*make sense of the data and generate understanding and theory*" (Maher et al., 2018, p1).

Presentation of Results

The most appropriate way to present the results of a thematic analysis has been much debated in the literature (Friedman et al. 2022; Javadi & Zarea, 2016; O'Brien et al., 2014). There is no single optimal method of presenting the themes, because "*one size does not fit all*" (Reay et al., 2019, p 1). Consequently, I must justify the methods that I used to present the results, because other researchers may disagree with my approach.

All qualitative researchers must demonstrate that their thematic analysis was rigorous, implying that the results are credible, transferable, confirmable, and dependable (Nowell et al., 2017).. Credibility is the truthfulness of the findings; confirmability is the extent to which the findings were shaped by the respondents and not by the researcher; dependability is the consistency of the findings; and transferability refers to how the qualitative findings can be applied to other situations (Rheinhardt et al. 2018).

Some researchers adopt a narrative or story telling approach to summarize the results of a thematic analysis, without including the direct evidence based on the participants verbatim quotations; however, a narrative account may lack rigour, because the telling of a story may distort the truth and focus only on the specific issues that are of interest to the researcher (Hargreave, 2019; Josselson & Hammack, 2021). I prefer not to use a narrative approach, because quoting the exact words of the research participants avoids researcher bias and makes more impact than a subjective interpretation (Cordon & Sainsbury, 2006). Another method of reporting the results of a thematic analysis is to combine brief edited sections of the interview transcript with the researcher's personal interpretation of the themes, aligned with a consideration of how the themes complied with or contradicted the literature and/or the conceptual or theoretical framework (Byrne, 2022). This approach may not, however, be aligned with the conventional structure of an academic journal article or dissertation in which only the analytical findings of the data analysis should be reported in the Results section, and subsequently the analytical findings are synthesized, interpreted, and contextualized in the following Discussion section (Cordon & Sainsbury, 2006).

My method of presenting the semantic themes in Chapter Four emphasize the lived experiences and perceptions of the participant from the participants' point of view, classified into primary and secondary themes. Reporting the exact words of the participants helped to reduce the possibility of confirmation bias (McSweeney, 2021) and enhanced the trustworthiness of the thematic analysis (Nowell et al., 2017). However, everything that the interviewee says is not generally reported by qualitative researchers in scientific manuscripts. The number and length of the verbatim quotations that can be quoted is constrained by the space available in a dissertation or journal article, as well as the reluctance of readers to spend so much time reading through an excessive amount of qualitative data (Cordon & Sainsbury, 2006). I therefore reported only a selection of relevant verbatim quotations in Chapter Four to provide the objective evidence for each primary and secondary theme. The whole of the coded interview transcript is presented in the Appendices.

In the context of research in the field of healthcare "*Facts are never absolute but result from an interest, or interesse, a bias towards a certain line of questioning*" (Wieringa et al., 2018, p.930). Consequently, to avoid researcher bias, I did not include my own subjective interpretation of the underlying meaning and implications of the themes in Chapter Four but rather depended on objective interpretation of the statements of the participants. This type of subjective interpretation of the results of a thematic analysis, based only on personal opinions, is inevitably contaminated by the researcher's positionality, confirmation bias, and other predispositions (McSweeney, 2021; Nowell et al., 2017).

I presented my own interpretation of the latent themes in Chapter Five in order to address the two research questions. This modern approach of dividing the results of a thematic analysis into objective and subjective sections complied with the current need for qualitative researchers to identify sources of bias, ensure trustworthiness, and improve the reporting standards for the results of primary qualitative research (American Psychological Association, 2020; Friedman et al. 2022; Javadi & Zarea, 2016; O'Brien et al., 2014).

Reflexivity and Positionality

Qualitative research in the field of biomedicine and healthcare is challenging, and many dilemmas are associated with the potential for distortion of the truth by interviewer bias and informant unreliability (Cypress, 2019). Some manuscripts submitted to academic journals based qualitative research are rejected because the results are believed by peer-reviewers to be untrustworthy (Galdas, 2017). Qualitative researchers have been accused of "*fooling yourselves and others* " because they assume that their research is trustworthy, whereas in reality their results are biased (McSweeney, 2021, p 1063). To avoid the presentation of misleading findings, I exercised "*reflexivity*" (Berger, 2015, p. 219; Palaganas et al., 2017, p. 426) implying that I reflected upon how and why my own positionality influenced the collection and interpretation of qualitative data. "*The processes of reflexivity acknowledge that the researcher's motivation, role, position, identity, power, and voice all impact on the doing of qualitative research*" (Corlett & Mavin, 2018, p. 391). My personal reflexivity involved consideration of how my own personal level of involvement may impact the research outcomes; whilst my functional reflexivity involved examining my personal role as it pertained to the practice of conducting research (Delve & Limpaecher, 2022).

My reflexivity involved the identification and reporting of my positionality, defined as "*the position you adopt about a research task*" (Holmes, 2020, p. 1). My positionality includes my role as an insider (i.e., my emic position) or outsider (i.e., my etic position) with respect to the research participants and the hospital setting (Jardine, 2004). I declare my emic position as an insider. Although I am a qualified doctor, I am not currently practicing medicine. I am a manager at the hospital where I conducted the research. I have a conscious vested interest in how physicians are compensated as I care about performance of the organization as a whole, and my interpretation of the results of the thematic analysis should not be biased toward the conclusion that physicians must receive a higher level of compensation but rather what would be the best compensation model to achieve the organizational goals. I declare no conflicts of interest between my positionality and my research.

Through the exercise of reflexivity and positionality, I was empowered to collect and present new research findings that were not contaminated by "*confirmation bias*". (McSweeney, 2021, p. 1063). This common type of illusion or cognitive distortion of the truth is manifested by the selective reporting of a specific set of data to support the researcher's own personal prejudiced preconceptions and presuppositions, and to ignore or neglect to report other sets of data that contradict the researcher's views.

Ethical Considerations

My research proposal was approved by the University of Indiana Internal Review Board based on the prior assumption that the risks to the respondents will be negligible or minimal. The potential benefits of the research outweighed the risk to the participants. All the participants gave their verbal informed consent prior to attending the interviews. No respondents were physically harmed by participating in this research. The participants' rights to confidentiality were upheld. No names or addresses or other personal data linked to the participants are reported in this dissertation. The individual participants are referred to only by pseudonyms (see Table 2).

Chapter Four: Results

Introduction

This chapter focuses on describing the lived experiences and perceptions of the 17 interviewed participants, using verbatim quotations to provide the evidence for the semantic themes. After identifying the semantic themes, I also developed some latent themes, to explain more complex underlying meanings and implications, and to address the research questions. My personal interpretation of the latent themes is deferred to Chapter Five, because the opinions expressed in Chapter Five are not necessarily those of the participants, but are my own personal subjective opinions.

Coded Results of Thematic Analysis

The complete coded results of the thematic analysis, based on the interpretation of a total of 182 verbatim quotations, are presented in twenty pages of the Appendices (see Appendix Table 1 to 10). The first column in each table is a case code or pseudonym to identify each participant (see Table 2 for a definition of each code). The second column presents the verbatim quotations (in italics) that were extracted by NVivo from the interview transcript and collated to provide the evidence for each theme. Irrelevant or repetitive quotations, answers that did not address the questions, and the interviewer's interjections are excluded, except if necessary [in parentheses] to provide the context for an interviewee's response). The third column lists the secondary themes representing the different manifestations of the corresponding primary theme.

Content Analysis

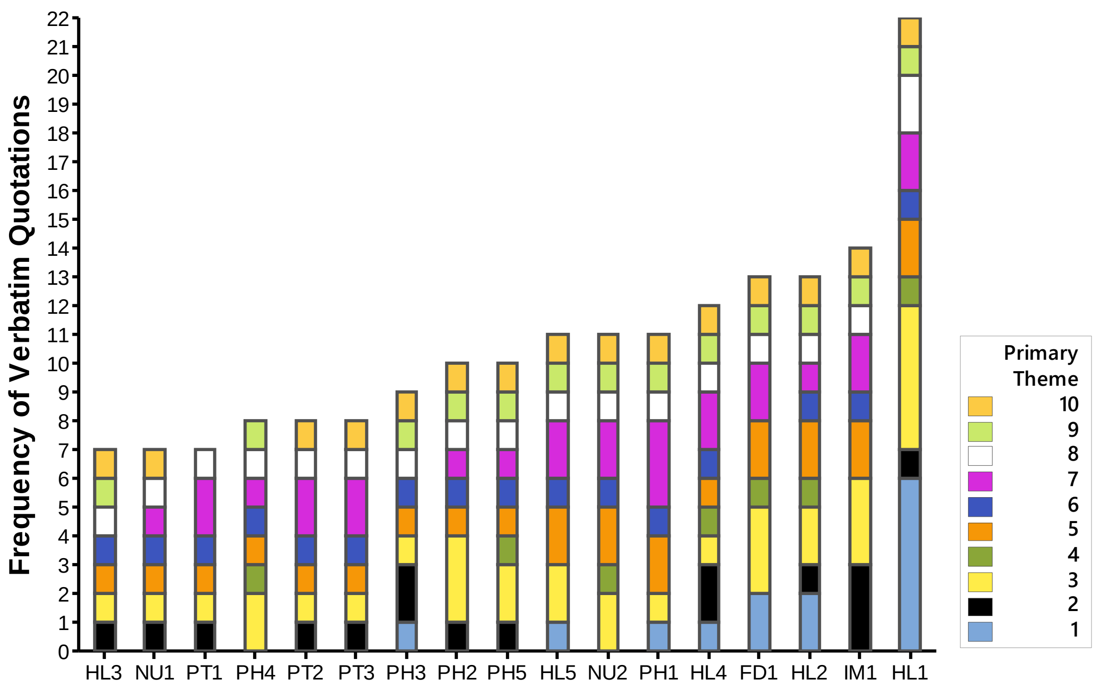
Table 4 presents the results of a content analysis to define the 10 primary semantic themes and the frequency distributions of the 48 secondary semantic themes clustered within each primary theme. The histogram in Figure 3 illustrates the frequency distribution of the verbatim quotations vs. the pseudonyms of the participants.

Table 4. Primary and Secondary Semantic Themes

Primary Semantic Theme	Secondary Themes	Frequency of Quotations
1. Physician Payment Models	Salary plus incentives	7
	Revenue share	2
	Fixed salary with no incentives (for GPs)	1
	Basic salary (in public hospitals)	1
	Ability to earn extra payment care outside of system	1
	Lower salary plus higher incentives	1
	Pooled incentives	1
	Part time and/or revenue share	1
	Salary plus allowances	1
2. Environmental Context for Payment Models	Competition for physicians	5
	Business orientation	3
	Doctors from abroad	3
	Competition between public vs. private practice	2
	Challenges	1
	Competition for nurses and physicians	1
	Monitoring of standards	1
3. Stakeholders affected by Payment Models	Patients	13
	Physicians	9
	Management team	4
	Insurance companies	2
	Finance team	1
	Human resources team	1
	Nurses	1
	Patients should not be affected	1
4. Misuse of Payment Models	Misuse of incentives and revenue share	3
	Misuse of incentives	2
	Misuse of revenue share	2
5. Effectiveness of care	Incidents of ineffective care	13
	Effective care dependents on payment model	5
	Effective care	4
	Effective care does not depend on payment model	1
6. Payment Models and Safe Care	Payment models linked to patient safety	13
	Payment models not linked to patient safety	5
	Incentives weighted towards inpatients	1
7. Payment Models and Patient-centered care	Hospital provides patient-centered care	12
	Incidents of no patient-centered care	7
	Payment models not related to patient-centered care	7

8. Payment Models and Timely Care	Affected by payment models	7
	Affected by revenue share	2
	Affected by revenue share and incentives	1
9. Efficiency of Care	Related to payment models	9
	Related to incentives	2
	Related to revenue share and incentives	2
10. Payment Models and Equitable care	Not related to equity	9
	Related to equity	6

Figure 3. Histogram of Frequency of Verbatim Quotations vs. Pseudonyms of Participants



The data in Table 4 indicate that the composition of each primary theme ranged widely from 7 to 32 verbatim quotations. The structure of each primary theme ranged widely from 2 to 9 secondary themes. The secondary themes emphasized that the participants expressed directly opposite opinions (e.g., that the effectiveness of care, the safety of care, patient-centred care, efficiency of care, and equitability of care at the hospital were simultaneously affected and not affected by physician payment models). The highest or modal frequency of quotations within each secondary theme (listed at the top of each primary theme in Table 4) may (or may not) reflect the commonalities or levels of agreement between the participants. Figure 3 shows that the number of verbatim quotations provided by each participant ranged from 7 to 22. The participants providing the most information (were the hospital leaders (HL1, HL2, and HL4) and the financial manager (FD1) and the insurance manager (IM1).

Evidence to Identify Secondary Themes

The following ten sections present representative quotations selected from the complete set of coded results in the Appendix (Table 1 to 10). I provide verbatim quotations to provide the evidence to identify the secondary themes within each of the ten primary semantic themes.

Primary Theme 1: Physician Payment Models Implemented at the Hospital

Appendix Table 1 lists the quotations extracted from the interview transcript to define the different types of physician payment model that were implemented at the private hospital where the respondents were employed. The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were classified into the following secondary themes: *Fixed salary without incentives* (HL1); *Basic salary in public hospitals* (HL2); *Salary plus incentives* (HL1, HL2, HL5, FD1, PH1, PH3, and FD1); *Lower salary plus higher incentives* (HL1); *Pooled incentives* (HL1); *Revenue share* (HL1, HL4); and *Part time and/or revenue share* (HL1).

Six payment models were outlined by the following quotations "*Essentially the most traditional is full time salary… GP doctors, for instance, there's no incentive for them* "(HL1); "*All of the specialists and consultants have some type of incentive… I mean, every doctor is getting some sort of incentives, but certain departments, they really don't participate because they're not revenue generating " (HL1);" in the UAE market, you know, generally, they are on getting salary plus incentive models"(FD1) "Some doctors, they've agreed on a different slightly different structure where they have a lower fixed compensation and a higher incentive structure" (HL1);"*

Pre-pandemic, I would say the model was that most of the physician or majority of the physicians were on salary basis, now post pandemic"(PH3); "In certain departments, the doctors themselves have agreed to pool their incentives" (HL1); "We have some doctors who are purely revenue share, and don't participate at all in the incentive rate (HL1) and *" I'd say the final model is part time and or revenue share " (HL1).*

Primary Theme 2: Environmental Context for Payment Model

Appendix Table 2 lists the coded verbatim quotations extracted from the interview transcript to answer the question " *What are the effects of UAE contextual environment (political, economic, social, technological, and environmental) on the choice of physician payment models(s)?".* The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were classified into the following manifestations: *Doctors from abroad* (HL1, HLT, and PH3); *Competition for physicians* (HL3, HL4, IM1, PH2, and PH5); *Competition for nurses and physicians* (NU1); *Competition between public vs. private practice* (HL2 and IM1); *Business orientation* (PT1, PT2, and PT3) and *Challenges* (PH3).

The themes were represented by the following quotations. Doctors from abroad were indicated by "*Doctors working in the UAE from various different countries, from developed as well as from developing countries having a fixed salary"* (PH3). Competition was emphasized by "*Competitiveness of the environment and the government moves definitely impact the choice of the payment or compensation system we follow".* Competition between public vs. private practice was indicated by "*The payment if they were either in public or private became the same, and obviously, private hospitals cannot have lower salaries than the public because there is scarcity of physicians and limited ability to attract them* (HL2). Business orientation was evidenced by *"The physicians here are well compensated and the hospitals are searching for revenues so I see* *that in the day-to-day interactions with staff here, they are business oriented" (PT1).* Challenges were identified by "*They are modifying their working strategy according to the global, economic and local challenges*" (PH3). Monitoring of standards was defined by "*I think from the insurance perspective, that the physicians should not misuse the benefits that have been given to them… That's why they develop some of the KPIs which they monitor like morbidity, mortality, surgical complications, prescriptions, overuse of prescription or overuse of laboratory tests"* (IM1).

Primary Theme 3: Stakeholders Affected by Payment Models

Appendix Table 3 lists the coded verbatim quotations extracted from the interview transcript to explain the participant's perceptions about who was affected by physician payment models and how they were affected. The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were classified into the following secondary themes: *Patients should not be affected* (HL); *Patients are affected* (HL2, HL5, IM1, FD1, PH1, PH2, PH3, PH4, PH5, NU1, PT1, PT2, and PT3); *Physicians* (HL1, HL3, HL4, IM1, FD1, PH2, PH4, PH5, and NU2); Nurses (NU2); *Management team* (HL1, HL5, and FD1); *Insurance companies* (HL2 and IM1); *Human resources and finance teams* (HL1).

The evidence for each theme was represented by the following statements. The patients should not be affected was indicated by "[*And do you think patient are affected as well?] They shouldn't be. I think, that is why in certain departments, like surgical departments…our preference is not to have individual performance incentives* (HL1). The contrary view, that patients are affected, was highlighted by " [*What about patients, are they affected?] Sometimes, yes. Because, for example, you know, if a particular doctor is purely revenue share, what he will do, he will forget the quality, and then, seeing as many numbers as possible to make his income*" (FD1); as well as "*Patients would be affected financially and clinically as well if the focus of* *physicians is mainly on quantity… The patients will be affected because they would be harmed if unnecessary procedures, investigations or treatments are done"(PH2).*

The negative effects of payment models on physicians and nurses were highlighted by "*The physicians would definitely be affected because they will be stressed with a system which is mainly focused on volume* (PH2) and "*I believe the nurses also would be affected in some sense as if there is a high pay scale for the physician, they try to compromise on nursing payment* (NU2). Other groups that were perceived to be affected by physician payment models included the management team, indicated by "*it's the management team who's ultimately responsible for deciding what is fair, what is not fair* (HL1); the insurance companies, reflected by "*The insurance companies will be affected due to the abuse of services or the requests for unindicted services*" (IM1); and the human resources and finance teams, highlighted by " *The HR team will be approached by especially new doctors like to ask, How is this thing structured? They need to have some understanding, but generally they will default to the finance team; the organization heighted by "We are a highly commercial organization and productivity is so much valued. Everybody get incentive based on the volumes of patients, admissions and procedures."(PH5).*

Primary Theme 4: Misuse of Payment Models

Appendix Table 4 lists the coded verbatim quotations extracted from the interview transcript to explain how the respondents related physician payment systems to incidents of underuse or misuse of healthcare. The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were classified into the following manifestations: *Misuse of revenue share model* (HL2 and FD1); *Misuse of incentives* (PH5 and NU2); *Misuse of incentives and revenue share* (HL1, HL4, and PH4). The misuse of the revenue share model was indicated by "*I find the revenue share doctors are more in control of the resources utilized because they* *want to get good share of the generated income"* (FD1). The misuse of incentives was reflected by " *I think because of the incentives so there are routine practices{the doctors started prescribing fixed lists of routine investigations or diagnostics which may or may not be indicated as they need to increase the achieved revenue to get more incentive} for some physicians in terms of medications or investigations prescription patterns* (NU2). Evidence for the misuse of both incentives and revenue share was provided by "*With regards to revenue share and incentivized physicians the only disadvantage can sometimes be with some physicians who take an extreme route and do some unethical practices. Like asking for unnecessary investigations or getting unnecessary procedures sanctioned and performing those procedures on the patient, which might not harm the patient but would not definitely benefit the patient, overall burdens to the economy basically*" (PH4).

Primary Theme 5: Payment Models and Effectiveness of Care

Appendix Table 5 lists the coded verbatim quotations extracted from the interview transcript to answer the interview item "*Would you explain to me the effects of the implemented physicians' payment models on the effectiveness of the care offered*". The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were classified into the following secondary themes: Incidents of ineffective care (HL1, FD1, IM1, HL2, HL3, HL5, PH1, PH2, PH5, NU1, NU2, PT1, and PT2); Effective care depends on payment model (PH1, PH3, PH4, and IM1); *Effectiveness of Care* (HL1, HL2, HL4; FD1, and NU2);

The evidence for the theme of *Effectiveness of Care* was represented by "*We provide effective care which is relevant to patient's needs*" (HL1) and " *I felt I received effective care and I got full explanation of my health condition*" (FD1). The contrary view of ineffective care was indicated by "*The focus on the compliance with the clinical practice guidelines is not there* *despite our trials to make it. The diversion of the focus of physicians towards volumes and revenue, makes it difficult to achieve"* (PH2). The respondents provided several examples of specific incidents of ineffective care, including "*From time to time, I hear about sporadic incident of readmissions or a surgery which needs to be done again*" (HL1); " *Performing unnecessary surgery or in some case giving unnecessary medications compromises our effectiveness of care* (HL2); "*I can see Caesarian sections are done more than normal deliveries due to CS is more revenue generating than the normal delivery"* (PH1); *"In terms of effectiveness in the emergency setting also we see patients are coming again to the emergency department with the same compliant, that is because the patient was rushed and not diagnosed properly"* (PH5); *"Many times, patients come back to the hospital within a day or two with the same complaint which for me is considered lack of effectiveness of care in such situations." (*NU1) and *"the doctor was rushing and did not spend enough time with me that first time, he could not understand my problem or guide me to the correct plan for treatment"* (PT1).

Evidence to suggest that effective care depends on the payment model was represented by the following statements: "*Those incidents are linked to the compensation system as it motivated those unnecessary services and the pressures lead to premature service which leads to readmissions as well in few cases*" (HL5); "*Cash based patients will lose out more because they have more investigations ordered*" (PH3); *"Incentivized specialists and revenue share doctors may sometimes prescribe unnecessary investigations and I can see that from my position and the payment model would be driver"* (PH4) and *"There are some remissions in some departments either with complications or for further care…I think that has to do with making the right decision for the service from the start and I would relate that to the motivation the doctors have due to the compensation system and the incentives"* (IM1).

Primary Theme 6: Payment Models and Safe Care

Appendix Table 6 lists the coded verbatim quotations extracted from the interview transcript to answer the question "*Being a JCI accredited healthcare system, how best would the physician payment model(s) support the implementation and compliance to international patient safety goals*? and "*In your view, what are the effects of the three models of physician's payment implementation implement in this health system on the safety of the care*? The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were classified into the following manifestations: *Salary structure linked to patient safety* (HL5, PH3, and IM1); *Salary structure not linked to patient safety* (HL4); *Incentives linked to patient safety* (HL2, HL3, PH1, PH2, PH4 and PT1); *Incentives weighted towards inpatients* (HL1); *Incentives not linked to patient safety* (PH5, NU1, NU2, and PT2).

Salary structure linked to patient safety was highlighted by "*Once we know that the quality also is measured once in three months and the compensation is linked to that, then we ensure that the patient will be benefiting, because quality and patient safety is one of the International Patient Safety goals"* (HL3). The evidence for the contrary theme, Salary structure is not linked to patient safety, was "*It doesn't matter what payment models are being used for the doctors, because that's their way of compensating for their services. I don't think that the JCI is going to be having any kind of feedback for having either of the model*"

The theme that incentives were linked to patient safety was emphasized by "*linking compliance to incentives would promote and prioritize safety of patient care* (HL2) The opposing evidence to suggest that incentives were not linked to patient safety was indicated by "*I do not believe in giving incentives to comply with safety requirements*" (PH5). The theme that incentives were weighted towards inpatients (HL1) was reflected by "*it's good that the incentive is weighted more towards inpatients because there's a higher risk of abuse in outpatients*".

Primary Theme 7: Payment Models and Patient-Centered Care

Appendix Table 7 lists the coded verbatim quotations that I extracted from the interview transcript to explain whether the respondents perceived that physician payment systems provided patient-centered care that was respectful of and responsive to individual patient preferences, needs, and values and to ensure that patient values guide all clinical decisions. The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were classified into the following manifestations: *Patient-centered care*: (HL1, HL2, HL4, HL5, FD1, IM1, PH1, PH5, and NU2); *Incidents of no patient-centered care* (HL1, HL2, HL3, HL4, PH1, PH2, NU1, PT1, PT2, PT3); *Payment models not related to patient-centered care* (HL1, HL5, IM1, FD1, PH1, PH4, and NU2).

Examples of quotations providing the evidence for the secondary themes are as follows: Patient centered care was highlighted by "*I believe the care we provide here is compassionate and respectful to the patient's needs, values and preferences"*(HL1). Incidents of no patient-centered care were reflected by " *I believe we are offering a patient centered care however I said before when the patients are admitted and are not able to see their doctors and discuss with them and in the outpatient setting when the patient is also not able to spend enough time with his/her doctor {due to doctor incentives to see more patients in less time} then there is partial violation of that patient centeredness as I understand it"* (HL4). The evidence to suggest that payment models are related to patient-centered care was emphasized by HL1 stating that "I *believe in all the models we are promoting patient centered care; we are offering care which is customized to patient needs*".

Primary Theme 8: Payment Models and Timely Care

Appendix Table 8 lists the coded verbatim quotations extracted from the interview transcript to explain how the respondents perceived that the payment models had idiographic effects on their abilities to offer or receive timely care. The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were classified into the following manifestations: *Care is affected by payment models* (PH2, PH3, NU1, NU2, PT1, PT2, PT3,); *Care is affected by revenue share* (HL2 and PH1); Affected by revenue share and incentives (HL3); *Care is not affected by payment models* (FD1, HL1, HL4, HL5, IM1, PH4, PH5). Examples of quotations providing the evidence for these secondary themes are as follows. The theme suggesting that timely care was affected by payment models was highlighted by "*Compensation directs everything in the care delivery process and if I am under continuous pressure that my compensation will be compromised then services will be routinely delayed* (PH2). The theme suggesting that timely care was affected by revenue share was reflected by "*The revenue share doctors, they tend to spend more hours in the clinic to see more patients. And, they tend to squeeze in terms of the time slot to have more patients*" (HL2). The evidence to suggest that timely care was affected by both revenue share and incentives was: "I *think revenue share and incentivized doctors are trying to rush to do the services very fast to book that revenue as part of their revenue so that they can get their shares or incentives*" (HL3). An opposing opinion to suggest that timely care, specifically diagnostic testing, was not affected by payment models was indicated by "*In my opinion there is no effect of the payment system of the timeliness of us processing the tests of the patients or at least I did not encounter a situation where we delayed the testing because of the payment*" (PH4).

Primary Theme 9: Payment Models and Efficiency of Care

Appendix Table 9 lists the coded verbatim quotations extracted from the interview transcript to answer the question " *Would you explain to me what are the effects of the implementation physicians' payment models on the efficiency of care offered in the healthcare system?"* The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were classified into the following manifestations: *Efficiency is related to payment models* (HL1, HL3, HL4, HL5, PH1, PH2, PH3, PH4, PH5); *Efficiency is related to revenue share and incentives* (FD1 and HL2); and *Efficiency is related to incentives* (IM1 and NU2). Examples of quotations providing the evidence for these sub-themes are as follows. The theme that efficiency of care was related to payment models was highlighted by "*I agree that due to the revenue orientation of the doctors there will be incidences of abuse and inefficiencies of the services offered. I can relate the compensation system to that* (HL1); The theme that efficiency of care was elated to revenue share and incentives was represented by: "*We can say in revenue share and incentivized physicians especially in medical specialties there are over prescription of investigations and that is seen through the peer review conducted monthly. We speak to those physicians however compensation system should also promote that efficiency of utilization of the hospital resources*" (HL2). The theme that efficiency of care was related to incentives was indicated by: "*I can see many doctors due to the incentives are requested unjustified laboratory or radiology investigations and some other times are trying to justify a case of admission or procedure as emergency while it is elective. Me and my team struggle in such situations so I believe there is a negative influence of the compensation system on efficiency*"(IM1); *my experience is that the revenue share and incentivized doctors are more conscious to the efficiency of utilization of resources than the pure salaried doctors.(FD1)*.

Primary Theme 10: Payment Models and Equity of Care

Appendix Table 10 lists the coded verbatim quotations extracted from the interview transcript to explain how the respondents perceived the idiographic effects of physician payment models on the equity of care. The quotations that comprised this primary theme, grouped by the pseudonyms of each case, were divided into two opposing manifestations: *Payment is not related to equity* (IM1, FD1, HL2, HL3, HL4, HL5, PH1, PH5, PT1, and PT3); or *Payment is related to equity* (HL1, PH2, PH3, PH4, NU1, NU2, and PT2). A quotation to provide the evidence that physician payment was not related to equity of care was: "*I think the care we provide is equitable and it is not linked to the physician compensation system*" (HL3). A quotation to provide the evidence that physician payment was related to equity of care was: "*I think in some occasions where doctors are incentivized or on revenue share, yes… Some of the doctors especially those with high volumes and who are oriented to revenue and incentives may dedicate more effort towards the high value patients' procedures which may be fair or not fair as the simple cases may by default need lesser time and effort to be managed"* (HL1).

Summary of Results

The content analysis revealed that the most frequently used physician payment structures at the hospital (n) as viewed by respondents were salary plus incentives (n = 7) and revenue share (n = 3). The participants also reported other compensation models, including basic salary (n =1); lower salary plus higher incentives (n = 1); and pooled incentives (n = 1). The secondary themes with the highest or modal frequencies of quotations (n) relating to the perceived idiographic effects of physician payment models on healthcare services were as follows:

The perceived environmental context for payment models includes the competition for local physicians (n = 5) and doctors from abroad (n = 3) as well as business orientation (n = 3).

The stakeholders most affected by physician payment models were most often perceived to be the patients (n = 13) followed by the physicians themselves (n = 9). Yet payment models based on incentives and revenue share were also perceived to be misused by physicians (n = 7), enhancing their benefits. Payment models were perceived to be associated with some incidents of ineffective care (n = 12). Incentives were perceived to be linked to patient safety (n = 13). The hospital was perceived to provide patient-centered care (n = 12) but some incidents of no impact on patient care were reported (n = 7). Payment models including revenue share and incentives were perceived to be related to timeliness of care (n = 10) and efficiency of care (n = 13) but payment models were not considered to be related to equitable care (n = 9).

Chapter Five: Discussion and Conclusions

Introduction

Primary care physicians in different healthcare systems receive financial compensation by means of different structures depending on how and where they practice (Burwell, 2015; Hillary et al., 2016; Kagan, 2022; Kondo et al., 2016; Lameck, 2017; McWilliams, 2022; Squitieri et al., 2017). Improving the structure of compensation or payment models for physicians is a strategic policy that might enhance the value and quality of healthcare services; however, most previous research on this relationship has been conducted in North America and Europe (Fainman & Kucukyaziki, 2020; Friedberg et al., 2020; Gee 2022a: 2002b; Jia et al., 2021; Mitra et al., 2021; Ogundeji et al., 2021; Quinn et al., 2020) which may not reflect effects in other locations, cultures, and health systems. No equivalent research on the potential effects of physician payment models on healthcare services has been conducted in the UAE (Arnold, 2022; Khoja, 2016). This gap in the literature provided the rationale and direction for me to conduct an exploratory qualitative research study at a 100-beds private JCI accredited hospital situated on the East Coast of UAE.

The remainder of this chapter provides an interpretation of the results of my research study based on a thematic analysis of semi-structured interviews with a heterogeneous purposive sample consisting of N = 17 stakeholders (hospital leaders, managers, physicians, nurses, and patients). I synthesized and interpreted ten semantic themes to identify two latent themes in order address two open-ended research questions: 1) *what are the perceptions of hospital stakeholders about the idiographic effects of different physician payment models on quality of healthcare services in the UAE based hospital?* 2) *What changes might be implemented to physician payment models to improve quality of healthcare services in the UAE based hospital*? The answers may ultimately contribute to revising physician compensation plans to achieve a better balance between performance and productivity vs. quality, safety, efficiency, and value in the healthcare system I studied in the UAE. I also discuss the limitations of my research, and make recommendations for future research, prior to drawing the final conclusions and recommendations.

Latent Themes

The two latent themes are: 1) *Relationships between Physicians' Compensation Models and Healthcare Services;* and 2) *Proposed Changes to Physician Compensation Models.* The purpose of these two themes was not to generalize the results of the thematic analysis from the purposive sample of 17 stakeholders at one hospital to the target population consisting of many thousands of hospital stakeholders in the UAE from which the purposive sample was drawn. A summary statistic derived from empirical data (e.g., the mode representing the most frequent quotations within a theme) is commonly used to reflect the level of commonality or agreement among a group of participants. However, this statistic does not apply equally to every individual member of the group. Many members of a group may strongly disagree with those who conform to the norm. My content analysis of the themes indicated that the participants who I interviewed expressed a wide diversity of opinions about the relationships between physician payment models and healthcare services. Therefore, generalizations based on the most frequent opinions were not necessarily representative of the entire population of hospital stakeholders, nor were they necessarily the best opinions. to address the research questions The full diversity of secondary themes within each primary themes had to be interpreted in order to provide a more complex and in-depth understanding of the unique and divergent perspectives of each individual participant (Mahr, 2022; Piccirillo, 2019).

The two latent themes provided information based on inductive reasoning to generalize the results of the thematic analysis to a conceptual or theoretical framework, which is the primary purpose of qualitative data analysis in healthcare research (Collins & Stockton, 2018; Grbich, 2019). Specifically, I generalized my themes to the Institute of Medicine's (2001) healthcare dimensions outlined in Chapter 1 and previous research outlined in the literature review in Chapter 2. I present a subjective interpretation of the semantic and latent themes, focusing on the diversity of the participants opinions, in the context of previous research, to provide a more meaningful interpretation of the practical implications of my research.

Relationships between Physicians' Compensation Models and Healthcare Services

Physicians' Compensation Models

The 17 hospital stakeholders who I interviewed confirmed that a variety of models have been developed historically for the compensation of physicians in the UAE (Khoja, 2016). The regular models include: 1) a basic salary for general practitioners (not related to productivity); 2) salaries plus incentives for productivity or a revenue share model for specialist and consultant physicians, whereby they receive a commission, or a share of profit based on the type and amount (but not the quality) of the clinical work that they perform. HL1 provided explicit details of the incentive scheme in the UAE based hospital, and how incentives were related to clinical practices, as follows: "*All of the specialists and consultants have some type of incentive. But in some departments, such as anaesthesiology, there is not much of an incentive, simply because there's no direct link between revenue generation and you know, incentive*"; "*It's difficult to gauge the individual contribution towards the revenue generation, and therefore, it's very difficult to calculate an incentive for other specialists and consultant doctors. In most cases, most doctors are part of a standard incentive structure. They have to achieve certain multiples of* *their salary before they participate, depending on their specialization. For those specializations where it's easier to generate revenue, obviously, the benchmark is higher, such as General Surgery, such as OBGYN. For other specialties where it's harder for them to generate inpatient revenue, let's say EMT, ophthalmology, etc. we use a low of multiple".*

The thematic analysis of the interview transcript revealed deviations from the regular compensation models for physicians in the UAE. as described by Khoja (2016). The statement that " *In certain departments, the doctors themselves have agreed to pool their incentives*" (HL1) implied that despite how the health system may have originally planned incentives for individuals, the physicians themselves modified the system by approaching the hospital leadership, resulting in pooled incentives, with potential effects on their clinical practices. Another statement of HL1 that "*Out of hours practice was allowed, because…evening commitments to the* [public] *hospital are limited"* was another example of how some physicians in UAE went outside of their regular routine system, and searched for extra payment, which could potentially affect their acceptance of, and attitude towards, the health system's regular payment models. Another extra payment which may influence healthcare services in the UAE was indicated by HL2 stating "*How you want to retain the nurses and doctors, we need to have a better package, they give education allowance, they give housing allowance, they give one time relocation allowance, which is a significant, amount".*

Environmental Context for Payment Models

Most previous research on the relationships between physician payment models and healthcare services has been conducted in the environmental and cultural context of North America and Europe (Fainman & Kucukyaziki, 2020; Friedberg et al., 2020; Gee 2022a: 2002b; Jia et al., 2021; Mitra et al., 2021; Ogundeji et al., 2021; Quinn et al., 2020). I need to consider how the environmental and cultural context of physician payment models in UAE is different to that in the Western world. My interpretation of the latent themes is bounded by the theoretical environmental and cultural dimensions that have been proposed to characterize organizations, institutions, and societies in the Arab world (Hofstede et al., 2010). Although these stereotypical dimensions have not been validated and do not necessarily engage reliably with local contexts (Gerlach & Erikkson, 2021) they provide a basic framework to underpin the possibility of making changes to physician payment models in the UAE and are likely to be more relevant to the studied health system than Western information and experiences.

The first stereotypical dimension of the Arab world is the high level of hierarchical power distance, implying that that people tend to accept and expect that power is distributed unequally in Arab society, and that everyone must compete for a specific place in the health system hierarchy. Power distance may explain why HL3 stated that " *Competitiveness of the environment definitely impacts the choice of the payment or compensation system we follow";* HL4 stated that *" Basically what I understand is that UAE as a whole, it's very competitive* "; and PH2 stated that *" I believe the excessive competition between healthcare providers and the ways they use to attract physicians are defining the choices of the compensation models used in the UAE".*

The second stereotypical dimension of the Arab world is a low tolerance for uncertainty and ambiguity, manifested by strict codes of behavior, guidelines, and laws. This dimension may explain why in UAE, the "*Government revised the salary structure completely … private hospitals cannot have lower salaries than the public because there is scarcity of physicians and limited ability to attract them*" (HL2) and "*Third-party regulatory audits are conducted to determine the physician performance against the ethical standards and practice*" (IM1). The implications are that the different factors and audits lead the government hospitals changes in their compensation structure in much easier way than private sector and also Impacts the private health systems and subsequently the private healthcare systems needs to change their systems to be able to compete and retain clinicians.

The third stereotypical dimension of the Arab world tolerates a moderate (but not a high) level of long-term orientation, implying that Arabs will endure a restrained level of adaptation, innovation, evolution and pragmatic problem-solving to improve the functioning of their organizations, institutions, and society. The potential for long-term orientation was reflected by the statement "*The focus on the revenue targets is also pushing the administrators to put pressure on physicians to be more productive*" (PH2). Moreover, "*They* [the government] *are modifying their working strategy according to the global, economic and local challenges* (PH3); and "*The private hospital, they have their own financial system to support, because there is a high financial risk. Patient statistics are going down and so, they* [the government] *should support the financial stability. So, they [*the government*] really work on which model is effective and how they can attract good doctors towards them* (IM1). The last two comments suggest that local health system leaders in the UAE based hospital may have limited room for changing the current payment models, because the UAE government appears to be in control.

Payment Models and Effectiveness of Care

Effectiveness of care implies that a healthcare system is successful in producing a desired outcome or intended result. Effectiveness of care implies that a physician should provide appropriate services based on scientific knowledge and to avoid underusing or misusing services (Institute of Medicine, 2001). Effectiveness of care also encompasses efficiency of care, because physicians are required to avoid the waste of equipment, supplies, ideas, and energy (World

Health Organization, 2018). Because effectiveness is outcome focused, the evidence-base must support the conclusion that a specific physician payment model results in a positive improvement in physician practices and their outcomes. Thirteen participants agreed that payment models, especially incentives and revenue share, were negatively linked to efficiency of care. Seven of my participants reported the misuse of incentivized and revenue share models leading to ineffective care. Misuse of payment models was reflected specifically by: some physicians attempting to increase their income by 1) neglecting to offer certain services (e.g., diagnostic tests, or prescriptions for medications) and offering alternative more expensive services, 2) sanctioning unnecessary clinical procedures, and 3) admitting patients to hospital who did not need to be admitted. HL5 linked incidents of ineffective care "to *the compensation system, as it motivated those unnecessary services*" (HL5). Some physicians sanctioned readmissions to perform unnecessary clinical procedures and IM1 struggled with "*insurance companies to approve those readmissions*". One physician suggested that physician payment models were detrimental to effectiveness of care, reflected by "*Incentivized specialists and revenue share doctors may sometimes prescribe unnecessary investigations"* (PH1). These examples of the misuse of incentivized and revenue share models in the UAE were consistent with similar misuse reported in North America and Europe (Brosig-Koch et al., 2022; Cooper et al., 2019; Fainman & Kucukyaziki, 2020; Kruk et al., 2018; Ogudeji et al., 2021). The overall conclusion based on previous research (Doran et al., 2017; Friedberg et al., 2020) is that incentives have limited impact on the effectiveness of care and do not lead to better patient outcomes but often increase costs.

Payment Models, Safe Care, and Timely Care

Safe care implies that physicians must avoid harm to patients from the care that is intended to help them, whilst timely care is linked to safety, because physicians are required to reduce delays that may be harmful to patients (Institute of Medicine, 2001). Among my 17 participants, the majority (n = 13) suggested that physicians' payment models, particularly those that incorporate incentives, were linked to patient safety, whilst fewer participants (n = 10) suggested that physician payment models were linked to timely care. The requirement for safe and timely care was emphasized by IM1 who stated that "*The payment system implemented should motivate the doctors to give the sufficient time to consult their patients and explain to them the treatment options that they make informed decisions without compromising safety of care"*. However, in practice, incentives and revenue share may compromise the need for timely and safe care, highlighted by "*I think revenue share and incentivized doctors are trying to rush to do the services very fast to book that revenue as part of their revenue so that they can get their shares or incentives*" (PT1).

Reform of incentives may be required to improve safety and timely care. HL3 recommended that "*We need to incentivize quality. I would say that providing incentives based on compliance to the international patient safety goals would put those goals as priority and would enhance the compliance*". However, previous strategies implemented to improve patient safety do not include the use of incentives to increase compliance with safety standards. According to Kosiek et al. (2021, p. 1063) most important strategies to improved patient safety include "*The use of integrated medical records for communication with specialists and others, patient-held medical records, acceptable workload in general practice, and availability of* *information technology*. Burgener (2020) similarly recommended improved communication between healthcare providers as a strategy to enhance patient safety.

Payment Models and Patient-Centered Care

Physicians are required to provide care that is respectful of and responsive to individual patient's preferences, needs, and values (Institute of Medicine, 2001). The majority (n = 13) of my participants suggested that patients were the stakeholders who were most affected by physician payment model. Seven of my participants suggested that physician payment models are directly related to patient-centered care, exemplified by HL1 stating that "*I believe in all the models we are promoting patient centered care; we are offering care which is customized to patient needs*". This comment contradicts the option of the president of the American Medical Association, who suggested that existing payment models do not compensate physicians for patient centered care. For example, when physicians invest in implementing new systems to support patient centered care, they face two financial repercussions. "*Not only are the innovative interventions unreimbursed, but for most interventions, the physician practice takes a second hit from the loss of revenue"* (Resneck, 2021, p.1).

Payment Models and Equity of Care

According to the Institute of Medicine (2001) physicians are required to provide equitable care that does not vary with respect to the demographic characteristics of their patients (e.g., gender, ethnicity, geographic location, and socioeconomic status). Nine of my stakeholders replied that the care provided in the hospital was equitable and not linked to the physician compensation system. For example, HL5 stated that "*It is the reimbursement system itself which guides the equity and the ability of patient to pay. However, in all other aspects of receiving care, I believe we offer equitable care to all our patients".* Six participants replied that the compensation of physicians was related to equitability (e.g., that patients with more money have access to more and better health care). For example, HL1 stated that "*Some of the doctors especially those with high volumes and who are oriented to revenue and incentives may dedicate more effort towards the high value patients' procedures"*.

None of my participants' responses were consistent with the position paper of the American College of Physicians recommending that physician payment models must achieve greater equity in healthcare services (Outland et al., 2022). This paper proposed policy recommendations to reform physician payment programs in order to achieve greater equity for patients, based on the need to recognize the high level of health care disparities and socio-economic inequities among the American population. This suggests that either there are few health care inequities in the UAE, or health care providers and managers are not sensitive to them.

Proposed Changes to Physician Compensation Models

My proposed changes are based on the perception that the most common payment models for specialist and consultant physicians implemented in UAE based hospital are basic salaries plus incentives based on productivity or in more specific terms to have a fixed salary pay of 80-85% of physicians compensation and the remaining 15-20% of the compensation to be based on quality, safety, effectiveness and efficiency of care with clear defined key performance indicators and targets monitored monthly, or a revenue share scheme based on the same previous terms of fixed share based on production and variable part 15-20% based on quality, whereby they receive a commission, or a share of profit based on the type and amount (but not the quality) of the clinical work that they performed. HL1 provided explicit details of how these payment models were closely related to clinical practices, and explained the problem that "*It's difficult to* *gauge the individual contribution towards the revenue generation, and therefore, it's very difficult to calculate an incentive…. For those specializations where it's easier to generate revenue, obviously, the benchmark is higher*". Another problem was that the existing payment models were reported to be misused by some physicians. Reform is recommended to eliminate the misuse of incentives and to improve the effectiveness and efficiency of care in UAE based hospital. Payment models that only incentivize physicians to increase productivity without simultaneously enabling them to be more efficient and effective is destined to fail (Burstein et al., 2022). HL2 suggested that "*Compensation system should also promote the efficiency of utilization of the hospital resources*" HL1 suggested that "*Some modification has to be done to overcome the defects of those models"* and "The *finance department has to make recommendations*".

My proposed changes to the structure of physician compensation models in the UAE based hospital, based upon the findings of my qualitative research, represent the translation of my research findings into practice. I believe that it is difficult to move towards new innovative and optimized payment and healthcare delivery models in the UAE equivalent to those proposed in the USA (American Medical Association, 2022). The federal government of the USA and private payers are changing the way they compensate physicians and other healthcare professionals by moving towards innovative models intended to improve the quality of outcomes and reduce costs in the future. Several future approaches to physician compensation have been proposed in the USA, ranging from increasingly guaranteed compensation to increasingly variable compensation (Gee, 2022a). Best practice suggests a payment model where no more than 80-85% of a physician's total cash compensation is fixed or guaranteed. The remaining variable compensation should be earned by achieving and/or exceeding minimum work standards or thresholds for productivity, quality, and engagement. Incentivized compensation can be structured for physicians going above and beyond the minimum work standards, giving high achievers the ability to earn more than the total cash compensation target (Gee, 2022a; 2022b).

Key compensation guidelines for the restructured physician payment models in the USA include 1) Base compensation on organizational priorities including physician engagement, quality and service line performance, and setting minimum standards for eligibility; 2) Calibrate performance expectations per clinical, administrative or other work effort criterion; 3) Establish a component for not meeting performance expectations, and 4) Always recognize performance quantitatively and qualitatively (Gee, 2022b). Those guidelines can be applicable in the UAE where the government is in control of the development of physician compensation in both the private and public sectors and as the system is hierarchical so it would be even applied easier, and local health system leaders and hospital managers in the UAE and in the hospital of study have some flexibility for changing the current payment models themselves.

Irrespective of who or what implements changes in physician payment models in the UAE in the future, In the studied health system/ hospital I propose a stepwise theoretical plan comprising six successive stages, underpinned by a combination of Kotter's Management Change model and Roger's Theory of Diffusion of Innovations.

1. A sense of urgency for change must be inspired amongst the health system's/hospital stakeholders by the executive leaders led by the CEO who is in favor of the change.

2. A team consisting of physicians, healthcare leaders, hospital financial/ insurance managers, and representatives of the UAE based health system / hospital should be constituted. All members of this team must be keen to accelerate the restructuring of physician payment

models in UAE based health system or in other terms should champion the effort and feel the sense of urgency for change.

3. The team should agree upon a vision to modify the existing physician payment models in order "*to overcome the defects of those models*" and "*to promote the efficiency of utilization of the hospital resources*" (HL1). This team should focus on local contextual issues, including considering how "*Excessive competition between health care providers and the ways they use to attract physicians are defining the choices of the compensation models used in the UAE"* (PH2). The team should also consider a solution to the problem that *"Patient statistics in terms of number of patients and number of procedures are going down and so, they [the government] should support the financial stability*. *So, they [the government] should really work on which model is effective and how they can attract good doctors towards them*" (IM1). The extent to which incentives have an impact on the effectiveness of care lead to better patient outcomes must be considered. Moreover, consideration should be given to creating physician payment programs that achieve greater equity for patients in terms of comprehensiveness of treatment not access to treatment as access is already available, in the UAE studied hospital which is a common example of other private hospitals in UAE. This step will require a more rigorous research design (as proposed in the Recommendations for Future Research section below) to determine which payment model or combination of models appears to be the most effective one to improve the quality of healthcare services in UAE based health system.

4. The team should communicate their vision to all stakeholders. The acceptance of the new payment models will rely upon a close network of relationships between the physicians, , hospital managers and executive leaders and due to the fact that the system in the hospital is hierarchical, the implementation will be straight forward..

5. The implementation of the new models may be hindered by operational errors and the unwillingness of the physicians to participate or competition with other private sector hospitals which may apply more attractive models. The team needs to empower their vision to create short term wins by giving strong support to the champions of the new payment model.

6. The new payment models need to be widely accepted among the stakeholders especially physicians before the changes become self-sustainable and it should be monitored to avoid any unintended consequences. If they are not widely accepted, then the cycle of this research should return to the first stage, and repeated again.

7. In more specific steps, below are the detailed steps for developing of the compensation model:

7.1. To combine quality with the productivity when modifying the payment model for physicians, so that physicians will receive incentives to achieve high productivity, as well as extra incentives which are based on the quality and outcomes of the services offered (as mentioned above 80% fixed pay and 20% incentives related to performance indicators) then the pay will be done as per the below:

7.1.1. Physicians achieving 95% of their total performance rating in a certain month will be eligible for extra bonus payment (e.g. equivalent to 10% of the basic payment for that month).

7.1.2. This incentives combination model has to be piloted for 1 year, then to be evaluated in terms of productivity & performance outcome again.

7.1.3. To increase the percentage of productivity & performance outcome incentives (e.g. to 25% each out of the overall payment) after 1 year of achieving the desired targets.

7.2. In order to achieve that, the following tools and parameters will be used:

7.2.1. To have a clear set of performance outcome indicators benchmarked to international practices for regular & ongoing evaluation of physicians.

7.2.2. To have a clear tool for evaluation of physicians based on quality of care as per the national and international hospital accreditation requirements. The proposed evaluation methodology is the "Ongoing professional practice evaluation" (JCI, 2021), which is a scientific objective method for evaluating the performance of physicians adopting the following criteria, which are evaluated either on the basis of Peer review, medical chart review, or direct observation.

N.B.: Ongoing professional practice evaluation means the performance data is collected on ongoing basis (e.g. monthly) but the evaluation is conducted at least annually. For Cause evaluation can be used in case of certain specific circumstances at any time. The granting and review of clinical privileges are based on the results of the evaluation.

Recommended general clinical measures and new evaluation criteria based on JCI and CBAHI standards (Ongoing Professional Practice Evaluation Criteria):

1. **Clinical Quality Monitoring (Objective and Evidence based):**

1.1. Quality of medical records (content, completeness and insurance companies approvals)

1.2. Patient assessments (punctuality and completeness)

1.3. Appropriateness of admissions from the Out-Patient Clinics

1.4. Appropriateness of admissions from the Emergency Room

1.5. Practitioner's use of consultation and referrals for other specialist/consultants

1.6. Requests for tests and procedures

1.7. Readmissions within three days after discharge

1.8. Pattern of blood and pharmaceutical usage

1.9. Adherence to Clinical Care Pathways/Guidelines

1.10. Medication errors including Prescribing Errors

1.11. Adverse events

1.12. Review of operative and other clinical procedures performed and their outcomes

1.13. Review of high-risk services and procedures (e.g. Angiogram, ERCP, Invasive Procedures etc.)

1.14. Use of Anesthesia, Procedural Sedation and their outcomes

1.15. Any discrepancies between preoperative and postoperative diagnosis

1.16. Length of Stay

1.17. Appropriateness of Care

1.18. Effectiveness of care and its outcome

1.19. Validated Patient Complaints

1.20. Sentinel Events

1.21. Mortality and Morbidity data

1.22. Unplanned return to OR

1.23. Compliance to department performance indicators (JCI, 2021)

2. **Professionalism and behaviors:** Demonstrates behaviors that reflect a commitment to continuous professional development, ethical practice, an understanding and sensitivity to diversity and a responsible attitude toward patients, profession, and society. Understands and supports the hospital's code of behavior and Absence of unacceptable behaviors. Full participation in a safe and just culture. (Data Source: Safety Culture Survey, Patient & Staff Complaints, Direct Observation)
   a. Patients care: Provides patient care that is compassionate, appropriate and effective for the promotion of health, prevention of illness, treatment of disease, and care at the end of life. (Data Source: Patient & Staff Complaints/Feedbacks, Direct Observation).
   b. Medical/clinical knowledge: Demonstrates knowledge of established and evolving biomedical, clinical and social sciences and the application of knowledge to patient care and the education of others. (Data Source: Compliance to clinical practice guidelines, including the adaptation and revision of guidelines, participation in professional conferences, and publications)
   c. Practice based learning and improvement: Able to use scientific evidence and methods to investigate, evaluate, and improve patient care practices including awareness of and responsiveness to the larger contexts and systems of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. (Data Source: Self-motivated clinical inquiry, acquiring new clinical privileges based on study and acquiring new skills, and full participation in meeting requirements of professional specialty requirements or continuing education requirements of licensure)
   d. Interpersonal and communication skills: Demonstrates interpersonal and communication skills including establishment and maintenance of effective exchange of information and collaboration with patients, their families, and other members of health care teams. (Data Source: potential measures include participation in teaching rounds, team consultations, team leadership, and patient and family feedback).

e. Systems based practice: Demonstrates both an understanding of the contexts and systems in which health care is provided, and the ability to apply this knowledge to improve and optimize health care. (Data Source: medication Usage, Prescribing, referral / consultation, awareness of the implications of the overuse, underuse, and misuse of systems.)
f. Stewardship of resources with subset of requirements: Understanding of the need for stewardship of resources and practicing cost-conscious care, including avoiding the overuse and misuse of diagnostic tests and therapies that do not benefit patient care but add to health care costs. (Data Source: participation in key purchasing decisions within their practice area, participating in efforts to understand appropriate use of resources, and being aware of the cost to patients and payers of the services they provide) (JCI, 2021)

Limitations

The first limitation is that I interviewed a small non-randomized purposive and heterogeneous sample (N = 17) of stakeholders on one occasion at one private healthcare institution in UAE. Therefore, my findings lack both internal and external validity, because I was not able to collect data to represent the population of stakeholders at all hospitals in the UAE. The implications are that I cannot generalize, with any degree of certainty, which, if any, of the existing physician payment models is perceived by the hospital stakeholders to be the most effective to improve the outcomes of healthcare services in UAE. Nevertheless, if changes in physician compensation in this health system are made in response to this study, those changes will be based on evidence and experience provided by those who practice and work in this health system.

The second limitation is that the study's time and funding constraints resulted in a small number of participants (N = 17) that didn't allow saturation to be achieved from the qualitative data collected. Saturation means that after a certain number of participants have been interviewed, adding more participants would not be productive, because no new information is collected (Fusch & Ness, 2015) . A sufficiently large sample size to achieve saturation depends on the homogeneity of the population from which the participants were drawn. If a purposive sample is homogeneous, meaning that the participants come from equivalent backgrounds, and have similar experiences and perceptions, then a small sample size ($N \leq 20$) may be sufficient to achieve saturation (Guest et al., 2006; Green & Thorogood, 2009; Mason, 2010; Saunders et al., 2017). However, my purposive sample was heterogeneous, and saturation was not possible because each group of stakeholders (five health leaders, five physicians, two nurses, three patients, and two financial managers) expressed diverse opinions about the effects of physician payment models on healthcare services. Therefore, I may not have gotten all of the valuable opinions likely from the stakeholder groups represented, and conversely the opinions and insights I received may not be representative of their respective stakeholder groups. Nevertheless, the participants had long and deep experience working in this health system, and recommendations based on their insights and opinions are more likely to guide recommendations for changes in physician compensation than making them with no input from local health care providers and managers.

The third limitation was my inability to control social desirability bias, which "*occurs when respondents give answers to questions that they believe will make them look good to others, concealing their true opinions or experiences*" (Nikopolou, 2022, p.1.) If socially desirable responding is not controlled, then the results of a thematic analysis may be biased, due to exclusion of the perceptions and experiences that the respondents believe to be socially undesirable or disagreeable (Bernardi & Nash, 2022). I was also unable to avoid sensitivity bias (i.e., when a respondent provides vague or imprecise answers because they believe that the questions are intrusive or focus on taboo topics). The degree of socially desirable and sensitive responding is related to the cultural orientation of the respondents (Lalwani et al., 2006). Both sources of bias have been identified among the survey data collected from participants in the Arab world (Benstead, 2017; 2018; Shamaileh, 2021). For example, social desirability and sensitivity bias may be reflected by less than half of my participants (HL1, HL2, HL4, FD1, NU2, PH4, and PH5) providing details to confirm the undesirable misuse of incentives and revenue share models by physicians.

The fourth limitation, which is common to all types of qualitative research is that, when asked to interpret the same set of data, two or more researchers will not provide the same interpretation, depending on their positionality (Corlett & Mavin, 2018). All the interpretations may be correct, because, in the context of social constructionism, there is no absolute singular truth that is true for every person; however, there are many different truths, that can be created and shared by many different people (Burr, 2015). Consequently, "*It is fully appreciated—even expected—that no two researchers will analyze data in the same way. As such, there should be no expectation that codes or themes interpreted by one researcher may be reproduced by another*" (Byrne, 2022, p. 1394). Moreover, *"There may be more than one valid and useful set of findings from a given data set*" (American Psychological Association, 2020). Thematic analysis is based on the assumption that "*one size does not fit all*", implying that different researchers are expected to extract different themes from a given data set (Braun & Clarke, 2021). Consequently, I did not measure inter-rater reliability, using inferential statistics (e.g., Cohen's kappa) to indicate the level of agreement between my themes and the themes identified by one or more other raters of the same data.

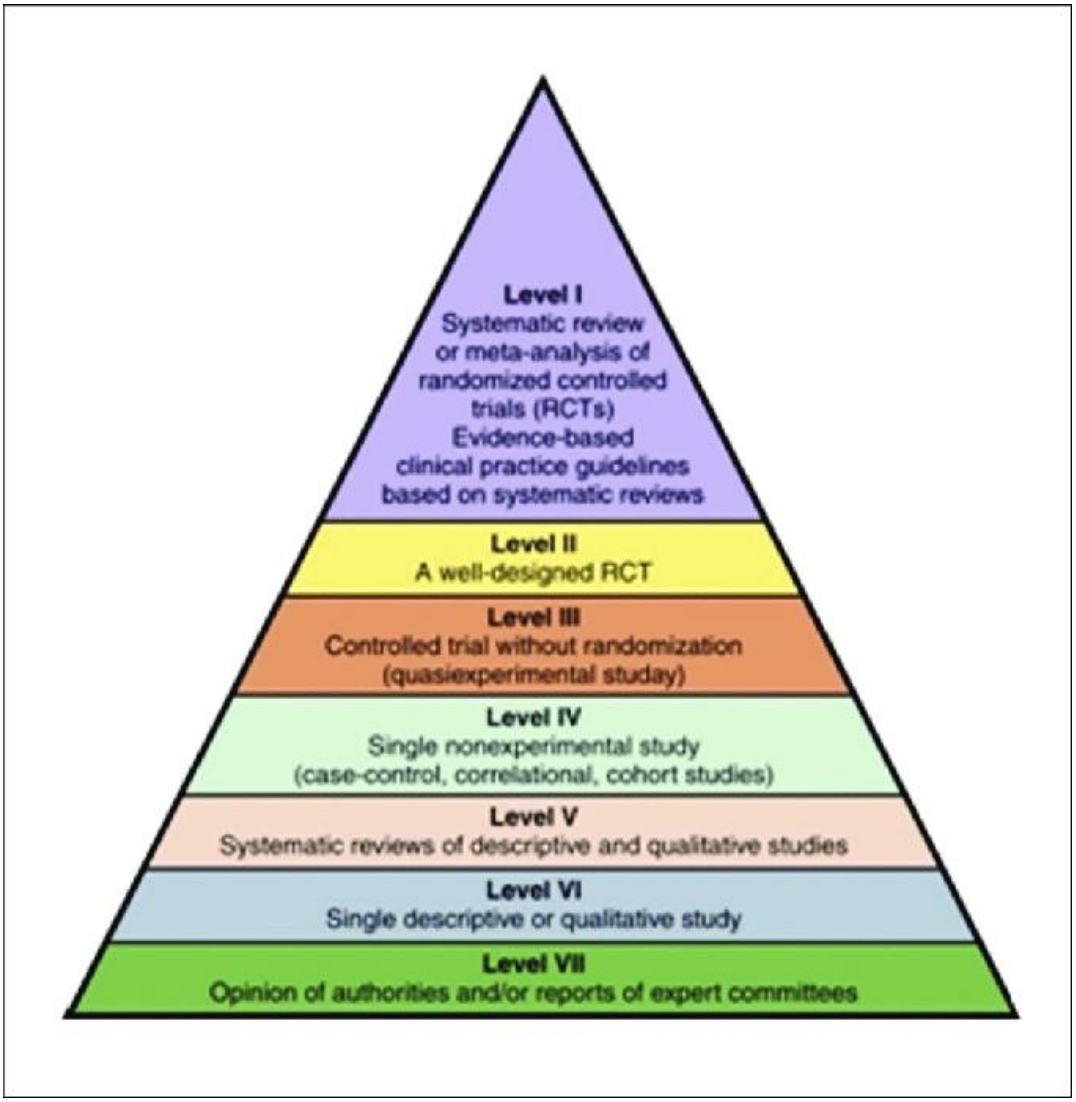
The fifth limitation are the mechanical processes used by NVivo software to search for keywords in order to categorize 187 verbatim quotations into 10 primary themes and 45 sub-themes. NVivo generated a considerable volume and breadth of output, covering 20 pages of this dissertation (see Appendix Table 1 to 10). However, the output of NVivo may have gone beyond what could be usefully interpreted to draw meaningful conclusions. NVivo could not determine which quotations were relevant to address the research questions, and which were less important. NVivo could not identify or distinguish between the relative importance of different shades of meaning expressed by the participants' lived experiences and perceptions. My experiences confirmed those of other qualitative researchers regarding the difficulties associated with the use of qualitative data analysis software (Allsop et al., 2020; Beekhuyze et al., 2010; Cypress, 2019; Evers, 2016; Mather et al., 2018; Zamawe, 2015).

The final limitation is that, due to the large number of quotations extracted by NVivo to identify each theme (reported in 20 pages in the Appendix), for clarity and readability I presented only a few quotations in Chapter Four, to summarize and generalize the results of the thematic analysis. Critics may argue that my interpretation of the themes in Chapter Four is biased, because I did not refer to every one of the 182 verbatim quotations (Cordon & Sainsbury, 2006; McSweeney, 2021; Friedman et al. 2022; Reay et al., 2019).

Recommendations for Future Research

In the context of studies in biomedicine and healthcare, the higher up a research design is positioned in the hierarchy of evidence depicted in Figure 4, then the more rigorous is the methodology, and the more likely that the validity of the findings can be upheld by the scientific community (Borgerson, 2009). Figure 4 emphasizes that my single qualitative study is located at Level VII near the bottom of the pyramid. The reason for this lowly position is that the results and conclusions of a single qualitative study based on a thematic analysis of interview transcript may be biased and untrustworthy (Cypress, 2019; Galdas, 2017; McSweeney, 2021; Nowell et al., 2021). Moreover, the thematic analysis was underpinned by the lowest baseline (Level VII) in the hierarchy of evidence, specifically the "*opinion of authorities and/or reports of expert committees*" such as the Institute of Medicine (2001).

Figure 4. Hierarchy of Evidence



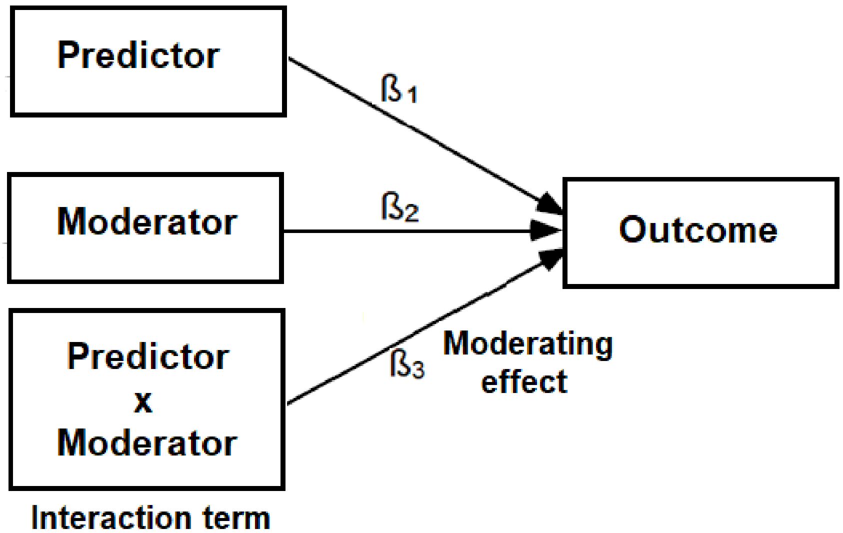
Source: https://www.researchgate.net/profile/LucaGhirotto/publication/337210492/figure/fig1/AS:824697616859137@1573634642265/Hierarchy-of-evidence-28.png

According to Hammarberg et al. (2016, p 498) "*Qualitative research is commonly viewed with suspicion and considered lightweight because it involves small samples which may not be representative of the broader population, it is seen as not objective, and the results are assessed as biased by the researchers' own experiences or opinion*" In order to eliminate the many limitations that I experienced in my single qualitative study, I recommend that future research should be based on a quantitative research design that is higher up in the hierarchy of evidence depicted in Figure 4. I cannot recommend the research designs at the top of the hierarchy of evidence (e.g., a systematic review, meta-analysis, or production of evidence-based guidelines) due to the lack of available secondary data. An experimental study in Level II or III (e.g., a randomized controlled trial) is also not appropriate. Experimental research to confirm the nomothetic effects of artificially manipulating physicians' payment models (e.g., by comparing the variance in clinical practices and patient outcomes between an unmanipulated control group vs. a manipulated treatment group) would be logistically and ethically impossible. Consequently, I recommend future research should utilize a non-experimental study, located in Level IV of the hierarchy of evidence. A correlational research design could be implemented by collecting quantitative data in a cross-sectional or longitudinal survey of hospital stakeholders. The responses should be analyzed using inferential statistics to explore the relationships between existing types of physician payment model and the quality of healthcare services (e.g., clinical practices and patient outcomes) reported by the respondents. Rather than use questions with qualitative answers (e.g., Table 3) the survey instrument should elicit quantitative responses to relevant statements (e.g., The implemented payment model is associated with a high level of effective, safe, and patient-centred care) using a 5-point Likert response scale (e.g., 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree).

Future quantitative research must consider that the biomedical and healthcare literature is pervaded by a plethora of misleading or spurious findings due to the chronic abuse and misuse of traditional statistical methods developed over 100 year ago (Cayetano et al., 2021; Dhulkhed et al, 2021; Gelbard & Cripps. 2021; Hemming et al., 2022; Lytsy et al. 2022; Vail & Avidan, 2022). The statistical methods chosen for the recommended quantitative research must reflect the current demands for modern researchers to eliminate their historical dependence on p values and statistical significance and move toward alternative and more reliable analytical approaches that generate reproducible results (Li et al., 2021; Matthews, 2021; Sharma, 2021).

I recommend more research to examine the extent to which the strength and/or direction of the correlation between different physician payment models and the quality and outcomes of healthcare services are controlled by moderators. A moderator is a third variable that controls the correlation between a predictor variable (e.g., a physician's payment model) and an outcome variable (e.g., the efficiency of the care offered). A moderating effect is defined statistically the correlation between an interaction term (i.e., the product of the predictor and a moderator) and the outcome variable (Baron & Kenny, 1986) as illustrated in Figure 5, where $ß_1$ = regression coefficient between predictor and outcome; $ß_2$ = regression coefficient between moderator and outcome; $ß_3$ = regression coefficient representing the moderating effect.

Figure 5. Moderator Model

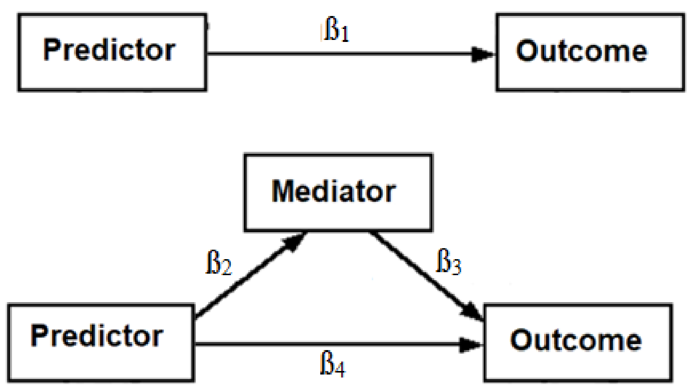


Source: Adapted from Baron & Kenny (1986).

In business and management research, the moderators are often the categorical demographic characteristics of the participants, and the identification of a moderating effect is a critical analysis to facilitate the generalizability of research findings from one population at one location to other populations at other locations (Dawson, 2014). Accordingly, future correlational research should include a moderation analysis to determine the effects of the demographic characteristics of the participants (e.g., gender, age, ethnicity, nationality, religion, education, experience, and profession) on the correlation between physician payment models and the quality and outcomes of healthcare services. Future research using a correlational design to predict the outcomes of healthcare services should also reflect the increasing complexity, diversity, and inequities in healthcare which have developed in the past 20 years, that go beyond the fundamental outcomes originally proposed by the Institute of Medicine (Lachman et al., 2020). The implications are that the predictors in the proposed statistical model may include

Likert scales measuring the qualities of healthcare services that were not included in this study, such as sustainability, accessibility, transparency, privacy, psychological safety, the values of partnerships and coproduction, dignity, respect, kindness, compassion, and holistic well-being. It is possible that one or more of these predictors may act as mediators, or variables that explain the correlation between a predictor and an outcome. If mediation occurs, the regression coefficient for the indirect effect of the predictor on the outcome illustrated in Figure 6 ($ß_4$) is reduced in magnitude compared to the path coefficient for the direct effect ($ß_1$) excluding the mediator. The strength of the moderating effect is indicated by the product of $ß_2$ x $ß_3$. If $ß_4$ is zero, then mediation is complete, because 100% of the variance in the outcome has been explained. If $ß_4$ is not zero, but lower than $ß_1$, then mediation is partial, because less than 100% of the variance in the outcome has been explained (Baron & Kenny, 1986). I so recommend more rigorous future research to be conducted to overcome those severe study limitations and barriers.

Figure 6. Mediation Model



Source: Adapted from Baron & Kenny (1986).

The size of the random sample used in a correlational research design, including the analysis of moderating and/or mediating variables, must be defined in advance, otherwise the sample will be too small to be representative of the target population in all of its essential details. I applied the sample size formula defined by Charan & Bizwaz (2013) to determine the minimum sample size for a cross-sectional survey, assuming that the total number of private healthcare physicians in UAE is about 15,000 (Statistica, 2021). At least N = 375 physicians must be randomly sampled to achieve a 95% confidence level with a ± 5% margin error and ensure that the answer to a specific question (e.g., which is the best physician payment model?) is representative of the target population. If inferential statistics (e.g., regression analysis) are used to predict the relationships between physician payment models, clinical practices, and patient outcomes, then the minimum sample size using random sampling to achieve adequate power and ensure that the results are meaningful is at least N = 300 to 500 (Bujang et al., 2017; 2018).

Conclusion

The purpose of my exploratory qualitative research study was to address two open-ended research questions: 1*) what are the perceptions of hospital stakeholders about the idiographic effects of different physician payment models on quality of healthcare services in the UAE based hospital? 2) What changes might be implemented to physician payment models to improve quality of healthcare services in the UAE based hospital*? I conducted a thematic analysis of semi-structured interviews with five hospital leaders, two financial or insurance managers, five physicians, two nurses, and three patients. I identified semantic themes underpinned by the dimensions of quality of care proposed by Institute of Medicine. Subsequently, I synthesized the semantic themes to identified latent themes by inductive reasoning, resulting in a theoretical plan for innovative changes underpinned by Kotter's Management Change Theory and Roger's Theory of Diffusion of Innovations.

The significance of my research is that the findings contribute to a gap in the existing literature concerning the associations between physician payment models, physician practices, and the quality or outcomes of healthcare services in the context of UAE. Healthcare leaders and hospital administrators in UAE will benefit from understanding how different payment systems may affect physicians' professional practices associated with the care that they provide in a private hospital. However, my conclusions were severely limited by several factors, including a lack of external validity, an inability to achieve saturation, contamination of the qualitative data by various sources of bias, the lack of inter-rater reliability, and the generation of a considerable volume and breadth of output by conducting the thematic analysis using NVivo software. I recommend future confirmatory research to validate the latent themes using a quantitative correlational design that overcomes the limitations of my qualitative research study.

Appendices: Results of Thematic Analysis

Appendix Table 1. Physician Payment Models Implemented at the Hospital

Case	Quotation	Manifestation
HL1	*Essentially, the most traditional is full time salary. Without incentives, but I mean, every doctor is getting some sort of incentives, but certain departments, they really don't participate because they're not revenue generating. GP doctors, for instance, there's no incentive for them. GP doctors are purely salaried. Maybe we give them some small bonus during the year…or they may be more eligible for insurance. So, we manage their salaries and their upside based on increments and things like overtime payments. So that's kind of one end of the spectrum.*	Fixed salary with no incentives (for GPs)
HL2	*When I came into this hospital, 11 years ago, the government would give a very basic salary (the public hospitals). So, for example, a specialist would get 11,000 Dirhams and they were allowed to do private practice. So out of hours practice was allowed, because there are limited hours in government that evening commitments to the hospital is limited, when you have low salaries in public, the private cannot have a huge difference.*	Ability to earn extra payment for care outside the system
HL1	*All of the specialists and consultants have some type of incentive. But in some departments such as anesthesiology, there is not much of an incentive, simply because again, there's no direct link between revenue generation and you know, incentive, it's difficult to gauge the individual contribution towards the revenue generation, and therefore, it's very difficult to calculate an incentive for other specialists in consultant doctors. In most cases, most doctors are part of a standard incentive structure. They have to achieve certain multiples of their salary before they participate, depending on their specialization. For those specializations where it's easier to generate revenue, obviously, the benchmark is higher, right less such as General Surgery, such as OBGYN. For other specialties where it's harder for them to generate inpatient revenue, let's say EMT, ophthalmology, etc. We use a low of multiple, but generally we're looking between somewhere between two and three times, which is actually very reasonable compared to the market and some hospitals are three to four times salary. And our structure is specifically focused around inpatient, right, because inpatient from a, again, efficiency, revenue efficiency perspective is higher, there's a higher net margin, particularly from inpatient. So, we tend to wait more of the incentives towards inpatient.*	Salary plus incentives
HL2	*So, how you want to retain the nurses and doctors, we need to have a better package, they give education allowance, they give housing allowance, they give one time relocation allowance, which is a significant, amount.*	Salary plus incentives
HL5	*They have defined the salary average scale for the physicians also for the nurses also there is average scales should be given as minimum. So, it is up to the facility to decide whether that but that minimum should be maintained and about to give it is the facility to decide, whether they give about or they give additional benefit like accommodation, they can give them some insurance benefits and other benefits.*	Salary plus incentives
FD1	*So, so in the UAE market, you know, generally, they are on getting salary plus incentive models..*	Salary plus incentives

PH1	*May be one of the reasons it is the same modality used in the government hospital, all over UAE. So, this is the standard way of payment all over UAE. And people are familiar with this method of payments. Plus, the other life expenses means bills, electricity, bills, water supply bills, maybe the tuition fees for the kids in the school rental expenses all are paid, usually by monthly basis. So maybe this this style of payment will fulfill the need for any employee to pay for the bills and these expenses. Same salary for government hospitals, including domestic bills and tuition fees*	Salary plus incentives
PH3	*Pre-pandemic, I would say the model was that most of the physician or majority of the physicians were on salary basis, now post pandemic, because of the economic worldwide economic situation, and even in UAE now. And because of now, the amortization taking place, all the corporate hospitals are feeling the stress and the pinch of patients not paying and because of insurance, also, now insurance companies have also started being strict with their insurance coverage,*	Salary plus incentives
FD1	*All the special specialists and the consultants, especially the, let's say, general surgery, or you know, OBGYN, you are automatics, they're driven by kind of, you know, like an incentive. But, again, if the physician is like a star, and you know, he's well known in the market, and he goes to three, four hospitals in the hospital, which also can afford to pay revolution, that those kinds of doctors, you know, comes under revolution. This is how the UAE market is also operating for multiple visits.*	Salary plus incentives
HL1	*Some doctors, they've agreed on a different slightly different structure where they have a lower fixed compensation and a higher incentive structure, although that's very rare, right? Maybe one or two doctors, typically orthopedic surgeons, for instance.*	Lower salary plus higher incentives
HL1	*In certain departments, the doctors themselves have agreed to pool their incentives. Because again, it's difficult to show who exactly is the main contributor to revenue? Where, for instance, we are asking specialists to refer cases to the consultant and the consultant is the named consultant for the surgeries. We pull the, the incentive, because otherwise, it's unfairly distributed.*	Pooled incentives
HL1	*We have some doctors who are purely revenue share, and don't participate at all in the incentive rate simply because again, they're you know, the payment is already linked to revenue. So, our visiting dental surgeon shaker is on revenue share. We have certain other doctors who've been on revenue share who aren't really sure it's a relatively small part of our team.*	Revenue share
HL4	*About the revenue share, he can be making sure that he can be able to spend more time in different places, plus he can be he will not be confined to only one place.*	Revenue share
HL1	*I'd say the final model is part time and/or revenue share. You know, the part time doctors typically they still are involved in the incentive program, but obviously, they rarely participate because they're only part time right. So, it's hard for them to generate sufficient revenue.*	Part time and /or revenue share

Appendix Table 2. Environmental Context for Payment Models

Case	Quotation	Manifestation
HL1	*If you want to attract European talent, if you want attract talent from the US, you attract talent from, you know, countries outside of this region outside of the MENA region outside of GCC, one of the ways you can do that is in addition to a tax-free salary is to offer them incentive structure, and show them, you know, as they earn more, you know, for the hospital, they will earn more for themselves.*	Doctors from abroad
HL4	*The nation where we are working, they are very liberal for the doctors. And even if you see that, they have come on come up with this golden visa making it easier for the doctors to be more available to work in different places…So that it's not only for his him, like his benefit, but also, he can be more beneficial for the people for the community and for the hospital also.*	Doctors from abroad
PH3	*One advantage that UAE has got a huge expected population. So, doctors working in the UAE from various different countries, from developed as well as from developing countries having a fixed salary. …It is very easy to recruit doctors from some of the developing countries, because when they convert their salary in their home currency, it is much larger than what they would have been earning in their home country. So, it becomes much easier for the doctors to recruit for the HR department to recruit doctors from the developing countries. Also considering it is a tax-free country. A fixed salary allows the doctor even in the developed countries to estimate as to what the saving would be, whether it would be better than the savings that they are doing it at home.*	Doctors from abroad
HL3	*Competitiveness of the environment and the government moves definitely impact the choice of the payment or compensation system we follow as we have definite strategies that would allow us to attract and retain physicians.*	Competition for physicians
HL4	*I think I think what, basically what I understand is that UAE as a whole, it's very competitive. In the medical field, it is very competitive, and they are making it easier to have an approach or have to reach out to such doctors who are more effective to more public IP. This is what my, my point of view is.*	Competition for physicians
IM1	*This is also the good doctors or the famous doctors who are having the culture of treating variable or to showing good outcome. So, they want to target these doctors to their hospital. So, each other then there's a competition too, in the market. So, the private hospital is they try to check what others do and they go one step more than to attract the doctors.*	Competition for physicians
PH2	*I believe the excessive competition between healthcare providers and the ways they use to attract physicians are defining the choices of the compensation models used in the UAE. The focus on the revenue targets is also pushing the administrators to put pressure on physicians to be more productive.*	Competition for physicians
PH5	*I think it is challenging especially in UAE to attract physicians nowadays especially reputable and commercial physicians who can generate revenues, so the healthcare providers are innovating methods to push the doctors to generate more revenues to meet the annual targets of the organization.*	Competition for physicians
NU1	*Generally, and through my nursing background and it would be applicable to doctors also, the healthcare organizations try to attract professionals through different compensation models and that is due to the very hard competition to attract the best talents and that was very obvious in the last two years during the COVID 19m pandemic.*	Competition for nurses and physicians

HL2	*Government revised the salary structure completely and they said they will benchmark to private practice because they realize privately some patients were being diverted to private practice, where they would not wait for appointments, while they will not get in, in public and the patient will be seen easily, which happens in my country and many other countries. So, if you want an early date for appointment definitely come to private hospital…. They stopped private practice, but they increase all the incentives for income to 200%, so, salaries for example 11,000 jumped to 22,000 plus other allowances were increased and the physicians were limited to one hospital or practice. The payment if they were either in public or private became the same, and obviously, private hospitals cannot have lower salaries than the public because there is scarcity of physicians and limited ability to attract them.*	Competition between public vs. private practice
IM1	*In terms of government vs private hospital, the UAE government have structured payment models for the government hospitals and that is not much disturbed. However, the private hospital they have their own financial system to support because there is a high financial risk. There can be complications because the patient statistics are going down and so, they should support the financial stability. So, they really work on which model is effective and how they can attract good doctors towards them.*	Competition between public vs. private practice
PT1	*The physicians here are well compensated and the hospitals are searching for revenues so I see that in the day-to-day interactions with staff here, they are business oriented.*	Business orientation
PT2	*I feel all the private sector hospitals are trying to maximize their profits and they are doing everything that this target is achieved.*	Business orientation
PT3	*UAE is a rich country and the investors would like to achieve the best return on their investment, that is why I think they choose models which would augment their ability to generate more business.*	Business orientation
PH3	*I feel that whatever the hospitals are doing, they are kind of changing their working models to support this growth. Because end of the day, any corporate has to make money otherwise you it will shut down, and the business model will shut down. Nobody is doing charity here. So, they are modifying their working strategy according to the global, economic and local challenges.*	Challenges
IM1	*I think from the insurance perspective, that the physicians should not misuse the benefits that have been given to them … That's why they develop some of the KPIs which they monitor like morbidity, mortality, surgical complications, prescriptions, overuse of prescription or overuse of laboratory tests. All these things they have developed. Third-party regulatory audits are conducted to determine the physician performance against the ethical standards and practice.*	Monitoring of standards

Appendix Table 3. Stakeholders Affected by Payment Models

Case	Quotation	Manifestation
HL1	*[And do you think patient are affected as well?] They shouldn't be. I think, that is why in certain departments, like surgical departments…our preference is not to have individual performance incentives. And our preference is to have polling centers, because then, you know, there's less chance of doctors trying to compete with each other to get to get patients and to get cases. We don't want a situation where one particular doctor is doing all the high value surgeries, because they understand it will impact their incentive, and leaving their subordinates and their junior team members to do all the cases that are not educationally valuable to them,*	Patients should not be affected
HL2	*For sure the patient is also very important stakeholder. For him, he comes to a physician asking for help. Now, the physicians, they have to see, what the eligibility is for insurance coverage and all these issues, there's a constraint for the physician. So, the payment module affects the supply and demand. There is supplier induced demand as well from few physicians, for example if the patient is coming seeking some services and then it is still justifiable to request more, but maybe they can do without. So, if you have a cash patient and insurance patient, okay, you tend to do more tests for the insurance patient as long as you can justify it. So, the patient is for sure a stakeholder. And it ultimately reflects to the hospital reputation.*	Patients are affected
HL5	*Mainly the customers also affected on the physician payment model, because if they want to like some consultant, they want to see the consultant their premium is also will be the service charges will be more so, the customer is also affected and they have to have the upgrade insurance to get or to see that doctor or to see have that consultation.*	Patients are affected
IM1	*Patients are the first to be affected as they will suffer due to not having sufficient time to discuss their treatments with the doctors.*	Patients are affected
FD1	*[What about patients, are they affected?] Sometimes, yes. Because, for example, you know, if a particular doctor is purely revenue share, what he will do, you will forget the quality, and then, seeing as many numbers as possible to make his income. For example, you know, let's say he's, let's go come, he has the capacity to see 20 patients, but when he knows that, you know, beyond revolution is there, we see 40 missions, and so, within the given time, that will definitely improve the quality of the, you know, the treatment. And also, you know, sometimes you give your revenue share also, or not, for example, in case of a surgeon where he could have managed to conservative treatment, could obviously, you know, go for surgery, because there's, you know, revenue element is there. I'm not saying malpractice, but I'm saying that, you know, the doctors can abuse the system.*	Patients are affected
PH1	*Patients because so many times happen that some of the services are not covered by insurance, and if I will prescribe a service which is not covered by insurance to meet my revenue targets then the patient will struggle paying for it.*	Patients are affected
PH2	*Patients would be affected financially and clinically as well if the focus of physicians is mainly on quantity… The patients will be affected because they would be harmed if unnecessary procedures, investigations or treatments are done.*	Patients are affected

PH3	*I feel sometimes the patients might be at a loss because you are over investigating. Now, there are two aspects to over investigating. One is obviously the revenue aspect where the payer physician gets more revenue because he's on a revenue sharing basis. The other is, if you look at the US now they over investigate, not because they are on a revenue sharing basis, they over investigate, because they don't want to miss a case, a finding because the litigation costs go up a lot. Whereas in UAE it is not reached that stage. But yes, the revenue sharing that has a downside. I would say this The only downside where you tend to kind of order more than what is required.*	Patients are affected
PH4	*Patients but as long as the practices ethical, I don't think patient would play a role as a stakeholder in this.*	Patients are affected
PH5	*Sometimes patients are not satisfied with the services especially when we receive huge numbers of patients, we are also not very satisfied because we cannot offer the best level of care to our patients.*	Patients are affected
NU1	*I believe patients are affected and what I have seen in the clinics and the inpatient wards was that patients are really complaining of not being given the necessary time to explain their concerns and get full explanation of the treatment plan and thinking of compensation models I would correlate that to some examples of revenue share doctors and some other specialists as well.*	Patients are affected
PT1	*Me as a patient is affected by the compensation model as I really feel that some doctors want me to rush to make a decision for admission or procedure without understanding the full picture. I am saying some or few not all, because many more of the doctors in this hospital are doing a great job and I am very satisfied with their care.*	Patients are affected
PT2	*Patients are affected because we have to suffer delays, waiting for care. Our insurance companies are also affected due to these huge bills which are sent to them from the hospitals which I think not fully justified.*	Patients are affected
PT3	*Patients because the care will be compromised in some sense. And physicians because they will be stressed and distracted if they are required to always deliver certain targets which do not count for their mental health or capacity to deliver those targets.*	Patients are affected
HL1	*Obviously, the doctors themselves.*	Physicians
HL3	*Physicians themselves because they need to offer good care to their patients, they would like to get good revenues and they need to meet their revenue targets so they will be under pressures and motivations.*	Physicians
HL4	*If I was in their position like if the department has two doctors one is on revenue share and one is on the salaried. So, if the salaried doctor would be the one who's been more effective, because the second doctor will be more into you know, competitive mode and then he knows that if he works, he's going to get paid.*	Physicians
IM1	*Physicians will achieve their own benefits of getting incentives but they will also be stressed with the productivity targets.*	Physicians
FD1	*The physicians are, of course, the stakeholders in this management ownership and, you know, the positions themselves, of course, you know, both sides, you know, part of the owners, actually, you know, are demanding when it, this model also works, because, for example, you can't have a pure fixed salary, as I told you before, so, when you mix, then, you know, the earning opportunity for the hospital is also more, because the doctor has a certain interest, you know, he will do more and more that indirectly comes to us to increase the income.*	Physicians

PH2	*The physicians would definitely be affected because they will be stressed with a system which is mainly focused on volume.*	Physicians
PH4	*The primary stakeholder would be the two primary stakeholders is the doctor at the hospital. And because salaries make the bulk of your operational costs in any hospital. To I think all the other staff members who have paid a salary will also be kind of, because it's a not-for-profit hospital, ours is the family run hospital, they are not looking for profits. So, a greater share could be passed on to other staff members in the form of bonuses or something like that. If the doctor salaries are within the limits, okay, so that would be one of they could be considered the stakeholders.*	Physicians
PH5	*We are a highly commercial organization and productivity is so much valued. Everybody get incentive based on the volumes of patients, admissions and procedures.*	Physicians Organization
NU2	*I see the physicians are really stressed and over stretched to see huge patients and offer more services over their ability.*	Physicians
NU2	*I believe the nurses also would be affected in some sense as if there is a high pay scale for the physician, they try to compromise on nursing payment. So, they put a big load low target to the nurses saying because the huge amount they spend on each amount is going for the position salaries and distances they try to control budget with the nursing what some extent but not all the hospitals some hospitals, they do consider how much value the nurse has got and they cannot function without the nurses you know being even the doctor cannot do good if there is no nurse supporting him. So, some hospital they understand this importance and they consider the nursing payment scale as well, but some extent they are also affected with the physician payment*	Nurses
HL1	*I think the management team is a stakeholder because it's the management team who's ultimately responsible for deciding what is fair, what is not fair.*	Management team
HL5	*The physician payment model is also strongly linked with the hospital leaders because they should also pay fight for the doctors as well as they should also meet the need of the society, they should also see that all the patients are treated equally irrespective of race culture or whatever they are. So they have to spend more amount in providing equal care and at the same time, they have to give the good chair to the doctors also.*	Management team
FD1	*The stakeholders are basically the, you know, the management and the ownership of the company, yeah, physically on the hospital? And so, that is one stakeholder one kind of stakeholders.*	Management team
PH2	*The hospital and in particular management would like to use those condensation models to push the productivity targets and achieve its financial goals.*	Management team
HL2	*The payment system is affected by the payers, the one who pays the hospital. So now, in this whole situation, especially if you see every patient consumed lot of resources, the patient average bill value increased and they're more admissions, post COVID recovery also the patient is coming for follow ups, they are finding many diseases. So, this is a burden to the insurance company/*	Insurance companies
IM1	*The insurance companies will be affected due to the abuse of services or the requests for unindicted services.*	Insurance companies
HL1	*The HR team will be approached by especially new doctors like to ask, How is this thing structured? They need to have some understanding, but generally they will default to the finance team… The average doctor who's being paid an incentive*	Human resources team

	other than themselves, their interactions, their key stakeholders, our finance department, HR department, and ultimately management team. If they are satisfied with the answer from HR, they don't need to go to the finance department. If they're not satisfied with the answer from the finance department, then they may come and choose to discuss it with the management team.	
HL1	*From a financial finance perspective, finance department, the finance department has to make recommendations, right.*	Finance team

Appendix Table 4. Misuse of Payment Models

Case	Quotation	Manifestation
HL2	*I think the compensation systems play a role in that because a revenue share physician for example is interested in decreasing cost and increasing revenue generated through the services he/she is offering to the patients; so he/ she may neglect offering certain service and offer another one which is more expensive just to increase his/her revenue, he/she may also compromise on the consumables used during the surgery and use re-sterilized instruments or tools when it is not really encouraged by the manufacturer so I believe payment system affects that point.*	Misuse of revenue share
FD1	*I find the revenue share doctors are more in control of the resources utilized because they want to get good share of the generated income*	Misuse of revenue share
PH5	*I think so, sometimes we miss admissions of the patient is not able to afford it and sometimes we do unnecessary admissions because we will be incentivized for that.*	Misuse of incentives
NU2	*I think because of the incentives so there are routine practices for some physicians in terms of medications or investigations prescription patterns.*	Misuse of incentives
HL1	*The sporadic incidents were mainly in the incentivized or revenue share categories. I have been thinking that some modification has to be done to overcome the defects of those models.*	Misuse of incentives and revenue share
HL4	*The same category of patients which I described above they reported medications or investigations which they do not understand the rationale behind it and when they requested a second opinion, the doctor told them there was no justification for those services. Mainly I can see those incidents with revenue share and incentivized doctors but I cannot generalize that on all of them because the majority is delivering effective care.*	Misuse of incentives and revenue share
PH4	*With regards to revenue share and incentivized physicians the only disadvantage can sometimes be with some physicians who take an extreme route and do some unethical practices. Like asking for unnecessary investigations or getting unnecessary procedures sanctioned and performing those procedures on the patient, which might not harm the patient but would not definitely benefit the patient, overall burdens to the economy basically.*	Misuse of incentives and revenue share

Appendix Table 5. Payment Models and Effectiveness of Care

Case	Quotation	Manifestation
HL1	*We provide effective care which is relevant to patient's needs*	Effective care
HL2	*I can see that our care is still effective and we are achieving good outcomes as per the international standards*	Effective care
HL4	*As I am interacting with the patients on daily basis and I listen to their concerns so the majority of patients, we can say 75% to 80% of the patients are satisfied with the effectiveness of care provided which means they are benefiting from the treatment plan and they are getting better.*	Effective care
FD1	*I would describe my experience as a patient, in most of the occasions I have been treated in our hospital, I felt I received effective care and I got full explanation of my health condition.*	Effective care
NU2	*There are a lot of positive examples where doctors are providing the right care in an effective manner.*	Effective care
PH2	*The focus on the compliance with the clinical practice guidelines is not there despite our trials to make it. The diversion of the focus of physicians towards volumes and revenue, makes it difficult to achieve. Because of the variability of practice and not following the clinical practice guidelines at least in my specialty I would say there is a problem in the effectiveness of the care we offer.*	Ineffective care
HL1	*From time to time, I hear about sporadic incident of readmissions or a surgery which needs to be done again however I cannot say the care is not efficient based on those sporadic incidents.*	Incidents of ineffective care
FD1	*I am not saying that this would be true for everyone, may be that is my experience because I am the finance director and I am the one who is paying the incentives. I get complaints from my friends who are treated in our hospital sometimes about the treatment effectiveness as in some occasions those patients did not feel better with the treatment provided.*	Incidents of ineffective care
IM1	*I see selections of expensive procedures and services which sometimes are not within the clinical practice guidelines and that increases my challenge to get approvals for those services and disturbs our reputation with the payers.*	Incidents of ineffective care
HL2	*there are some deviations which I can see in terms of complications or non-indicated surgeries which are detected during the peer review process. Those complication and performing unnecessary surgery or in some case giving unnecessary medications compromises our effectiveness of care and patients also got to complain about that in many cases.*	Incidents of ineffective care
HL3	*In some of the incident reports we receive, and after the peer review, we found out that some of the cases were either readmitted or offered unnecessary services but those are few cases when compared to the number of patients of the hospital. Also in those incidents, the doctors involved were either incentivized salaried or revenue share doctors.*	Incidents of ineffective care
HL5	*If a urologist is doing highest number of cases in the renal calculus we see no stones, but the patients are two or three four times three operated again and again the stone is forming. So, that is not seen how many times this patient they admitted how many times this patient operated what is the UTI, He guessed from the from the you know the from this process or how*	Incidents of ineffective care

	much stress or the he's undergoing that was not seen. So, they are only seeing the number statistics	
PH1	*I believe except certain incidents, the care provided is effective. In some situations, and in my department, I could see some non-indicated procedures which would lead to complications are done and the motivation for that is the incentive. I can see caesarian sections are done more than normal deliveries due to the same as CS is more revenue generating than the normal delivery.*	Incidents of ineffective care
PH5	*Me being working in emergency I try my best to diagnose and treat the patients however I see some my colleagues rushing to admit the patients because we have incentives for each admission. May be the patient does not need admission and we have been informed about some of those cases but still the team keeps admitting and sometimes we receive rejections from the insurance. So, in terms of effectiveness in the emergency setting also we see patients are coming again to the emergency department with the same compliant, that is because the patient was rushed and not diagnosed properly.*	Incidents of ineffective care
NU1	*The decreased time available for physicians due to high volumes is leading to compromise of the care in many situations. Many times, patients come back to the hospital within a day or two with the same complaint which for me is considered lack of effectiveness of care in such situations.*	Incidents of ineffective care
NU2	*I think we have a percentage of readmissions and that is related to care provided which was not effective at the first episode and I think that has to do with the compensation because doctors would like to admit more patients. In many cases, they fail to consult them as needed or plan properly for their discharge.*	Incidents of ineffective care
PT1	*I think in 80% of the time I receive effective care, meaning I improve, however in few other times I need to come back to the doctor and I believe because the doctor was rushing and did not spend enough time with me that first time, he could not understand my problem or guide me to the correct plan for treatment.*	Incidents of ineffective care
PT2	*I will take the examples of my children, most of the times I have to visit the doctor multiple times before my children get improved. Most of those doctors are high volume and we really do not have time to discuss and they hurry to prescribe medicines and investigations. So, for the case of my children, I think it is not so effective.*	Incidents of ineffective care
HL5	*Those incidents are linked to the compensation system as it motivated those unnecessary services and the pressures lead to premature service which leads to readmissions as well in few cases.*	Effective care depends on payment model
PH1	*Yes, in these sporadic cases at least in my department, I can link the compensation system and the incentives to such incidents…Incentivized specialists and revenue share doctors may sometimes prescribe unnecessary investigations and I can see that from my position and the payment model would be driver. Otherwise, it will be lack of competency but I cannot say that this is a phenomenon, I can just say that it is an observation which I found as part of my job. To be effective is to do*	Effective care depends on payment model
PH3	*If you have a full-time physician, he will not order unnecessary investigation. So ethically and morally, he will be more in line with the medical ethics, whereas a doctor or employee who's on a revenue sharing basis, might not follow ethics, or to that extent as required. That*	Effective care depends on payment model

	disadvantage will be there for a patient because he might get ordered more. This will further depend upon whether it's insurance based or cash, because cash based patients will lose out more because they have more or investigations ordered.	
IM1	*I think there are some remissions in some departments either with complications or for further care; I know this because I struggle with insurance companies to approve those readmissions. I think that has to do with making the right decision for the service from the start and I would relate that to the motivation the doctors have due to the compensation system and the incentives.*	Effective care depends on payment model
PT3	*Generally, the care provided in this hospital is effective and I do not think that the compensation system affected that. In sporadic occasions I had to visit the doctor multiple times but at the end I get treated.*	Effective care does not depend on payment model

Appendix Table 6. Payment Models and Safe Care

Case	Quotation	Manifestation
HL5	*Mostly seeing that the compensation models are more focused on the volume…we need to emphasize on the quality metrics also, once we know that the quality also is measured once in three months and the compensation is linked to that, then we ensure that the patient will be benefiting because quality and patient safety is one of the International Patient Safety goals; you need to protect their health and safety. So, we need to consider the quality metrics.*	Salary structure linked to payment safety
PH3	*A salary structure would definitely be better, because everybody would be kind of overall majority of us would be happier with a fixed salary structure. And that would reflect in the JCI. Because your flow workflow processes, and everything would be smoother and better so salary-based structure would lead to better care safety and better outcomes.*	Salary structure linked to patient safety
IM1	*JCI standards emphasizes that patients should be well informed about their care. The payment system implemented should motivate the doctors to give the sufficient time to consult their patients and explain to them the treatment options that they make informed decisions without compromising safety of care.*	Salary structure linked to patient safety
HL4	*For all the all the healthcare worker, it's very clear. It doesn't matter what payment models are being used for the doctors, because that's their way of compensating for their services. I don't think that the JCI is going to be having any kind of feedback for having either of the model.*	Salary structure not linked to patient safety
HL2	*I think there should be a linkage between compliance and compensation or incentives. The compensation system is a valuable. Everyone would be paying great attentions to his/her compensation scheme so linking compliance to incentives would promote and prioritize safety of patient care among the other organizational priorities.*	Incentives linked to patient safety
HL3	*We need to incentivize quality. I would say that providing incentives based on compliance to the international patient safety goals would put those goals as priority and would enhance the compliance.*	Incentives linked to patient safety
PH1	*Bottom line, safety is everything if the care is not safe then I cannot even call it care. I should not need to push or incentivize people to follow basic standards of care. So, I believe safety standards to be enforced.*	Incentives linked to patient safety
PH2	*If I understand the question correct, I think the incentive or the compensation should be based on the quality of the service rather than quantity and the volume of the services offered. If we successfully created that link then we will be able to use the compensation system to support the implementation of the JCI standards.*	Incentives linked to patient safety
PH4	*Money should support the implementation of the policies so if we want the model to support in this regard, we should incentivize the people however I do not think there is a significant effect or compromise of the care safety so that we shift to incentivizing the doctors. I see safety of care as a basic thing which is not compromised from my perspective.*	Incentives linked to payment safety
PT1	*Managers should incentivize people to follow the guidelines, but I am not sure how they could do that.*	Incentives linked to payment safety

PT3	*Safety is fundamental. I think if managers were to use compensation to motivate that then they should link incentives to compliance of those standards.*	Incentives linked to patient safety
HL1	*I think from a patient safety perspective, as I said, I'm not worried about doctors unnecessarily ordering tests or unnecessarily doing cases or whatever it happens to be, you know, part of the reason why it's good that the incentive is weighted more towards inpatients because there's a higher risk of abuse in outpatients. If you speak to insurance companies, they're more focused on outpatients than inpatients, because it's easier to see distorted behavior in the outpatient setting than it is in the inpatient setting, If a doctor, let's say is unnecessary doing, you know, CT scans on every single patient, the way the incentive structure works, is they really won't see any difference in their incentive by doing that. However, if they're admitting two times as many inpatient cases, right, then obviously, they'll see a significant impact. But the threshold for admitting a patient to the hospital is much higher than the threshold for ordering a CT scan, right. And if a doctor is trying to admit an inpatient, and it's clear that the admission is not warranted or not justified, then firstly, the insurance companies will reject it, which acts as a check and balance system. Secondly, you will be recognized by the clinical teams that this admission doesn't seem appropriate.*	Incentives weighted towards inpatients
PH5	*Safety is integral to the care. I do not believe in giving incentives to comply with safety requirements.*	Incentives not linked to payment safety
NU1	*I think compensation should not be related to safety, safety is integral part of the clinical profession so the stress of revenue and pressure to be more productive should be reduced so that the doctors can concentrate in offering good quality care.*	Incentives not linked to payment safety
NU2	*There should be compliance targets of 100 percent for the JCI patient safety goals and it should be mandatory not optional. I believe incentives in this case are not relevant as it is fundamental requirement.*	Incentives not linked to payment safety
PT2	*Patient safety is mandatory, you do not have to incentivize or motivate doctors to comply. If the care of the hospital is not safe, why I would come here.*	Incentives not linked to payment safety

Appendix Table 7. Payment Models and Patient-Centered Care

Case	Quotation	Manifestation
HL1	*I believe the care we provide here is compassionate and respectful to the patient's needs, values and preferences.*	Patient-centered care
HL2	*Most of the physicians are trying to satisfy their patients and perform ethical medicine through offering the services needed to treat the patient or relevant to the patient condition.*	Patient-centered care
HL4	*Yes, I believe we base our care and treatment on patients' needs and we respect their choices as this is patient right and it is our responsibility that we make sure that patient preferences, needs and values are respected.*	Patient-centered care
HL5	*Yes, I think we respect patient preferences and needs that is through my experience here and as a patient as well.*	Patient-centered care
FD1	*I would say yes, respect is one of our values and our CEO always communicates respect as a way to provide care to our patients.*	Patient-centered care
IM1	*I think yes to some extent, despite some of the pushes to do some services by some doctors, I can still say that it is respectful to the patient choices.*	Patient-centered care
PH1	*Overall, yes, because if you did not do that, patients will not come to you and then you will them to other hospitals ad care providers. So, despite the volume drive of these models, still we need to respect the preferences, then needs and values if the patients.*	Patient-centered care
PH5	*I think so yes, we respect the patients' preferences, needs and values and we use that as base for our care.*	Patient-centered care
NU2	*That aspect is well promoted in our hospital so I think we strictly follow that. It may be affected under the volume targets but the management are always promoting and communicating that to all if us.*	Patient-centered care
PT1	*Most of the situations, doctors are responsive to my needs, in few situations and with certain doctors, they do not have the time and I cannot express all the needs so those needs could not be fulfilled.*	Patient-centered care
PT2	*I have to say that there are excellent doctors who spend with me personally good time to understand and decide on the best plan.*	Patient-centered care
PT3	*I have positive experience in this regard, may be because I am known to the doctors and I am long standing patient. The care provided to me is concentrated around my needs.*	Patient-centered care
HL4	*I believe we are offering a patient centered care however I said before when the patients are admitted and are not able to see their doctors and discuss with them and in the outpatient setting when the patient is also not able to spend enough time with his/her doctor then there is partial violation of that patient centeredness as I understand it.*	Incidents of no patient-centered care
PH1	*Despite the trials of the management to send a continuous message that we must offer patient centered care. We are not able to achieve that fully because of the distraction caused by the compensation models which motivate for volume and revenue targets which would lead to incidents of abuse of services.*	Incidents of no patient-centered care
PH2	*In most of the cases and through my experience with the system, we are trying to offer care which is needed by the patient however there is unnecessary test or sometimes admission which is done in many cases and we fail even to justify it to the insurance companies leading to a rejection.*	Incidents of no patient-centered care

NU1	*In some cases, I can say that patients are requesting certain services which may or may not be within the scope of their diagnosis and they are being denied by the doctor.*	Incidents of no patient-centered care
PT1	*Sometimes not but most of the times yes. With certain doctors I feel they are over stressed and overburdened and they are trying to see so many patients beyond his/her ability.*	Incidents of no patient-centered care
PT2	*Due to this time shortage, we do not get the chance to discuss the problems and the needs so how the doctors will respect the needs if we did not get the chance to discuss or describe it.*	Incidents of no patient-centered care
PT3	*In my case and my family case, yes, I think we receive respectful care and the doctors listen to the needs and they respectfully help us get treated. I hear from other colleagues that this is not the case however that is my experience.*	Incidents of no patient-centered care
HL1	*I believe in all the models we are promoting patient centered care; we are offering care which is customized to patient needs.*	Payment models not related to patient-centered care
HL5	*While I am saying that we respect patients' needs and preferences but the imbalance between the clinical knowledge between the doctor and the patient puts the doctors at advantage during the discussions and the patient would trust the doctor. So, I think some services offered are centered around revenue and not on patient needs.*	Payment not models related to patient-centered care
IM1	*I can say that management team are communicating a clear message that the care offered has to be centered around patient needs; however, I can see that the physicians on the other side are pushed to offer more to get more through the current compensation system which does not match with the management message.*	Payment models not related to patient-centered care
FD1	*I would say there are some violations. I believe there are some doctors who are concentrating too much on the revenues and the incentives.*	Payment models not related to patient-centered care
PH4	*My view about that is that in most of the cases we are offering care relevant to the patients' needs however I can see some investigations which are requested and I cannot find clear justifications related to the diagnosis and the problem with that is that insurance companies in their retrospective audits, they find those and they reject them.*	Payment models not related to patient-centered care
NU2	*Generally, the care provided is focused on patient needs. Only in some situations I would say that doctors are trying to convince the patients to follow certain course of action which would enhance revenues and patients in many cases are not convinced.*	Payment models not related to patient-centered care
PH1	*. I believe I cannot draw a direct link between the compensation system followed and the respect of patient needs, preferences and values.*	Payment models not related to patient-centered care

Appendix Table 8. Payment Models and Timely Care

Case	Quotation	Manifestation
PH2	*Because sometimes we are being called by the accounting team to say that some amount will be dedicated from our salary because an admission was not approved by insurance, I think we are a little restricted when it comes to decision of admission; however, that is not the case in case of life-threatening conditions.*	Affected by payment models
PH3	*In my opinion and because me and my staff can be requested to compensate for loss in revenue or insurance rejection, we wait till the billing is done for the service then we do the service and sometimes it can be delayed. But this does not happen in cases of severe emergency. Compensation directs everything in the care delivery process and if I am under continuous pressure that my compensation will be compromised then services will be routinely delayed.*	Affected by payment models
NU1	*People are afraid to offer a service to a patient if he/she is not able to pay because they may be asked to pay out of their pocket if the hospital could not reimburse this cost and that fear leads to delays in patient care in such situations. I have to say that the hospital management was supportive in many situations and they did not charge the individuals but still there is general fear and hesitation around this point.*	Affected by payment models
NU2	*I think it depends on the insurance of the patients or his/her ability to pay. But also in the clinics, patients may face significant delays due to the very high volumes of patients.*	Affected by payment models
PT1	*I got to wait to receive my services in many times, I think because some doctors are over booked and because those doctors are also keen to see more patients as per my experience with them.*	Affected by payment models
PT2	*Many time we had to wait for the approval from the insurance or to pay in full. In the emergency it can happen but in less frequency that me or my family wait to receive care.*	Affected by payment models
PT3	*Yes, depends on the condition in the clinic, maybe I face some delays as the doctors are busy but in emergency, I receive timely care. I also have very good insurance which make it easy for me to receive timely good care.*	Affected by payment models
HL2	*The revenue share doctors, they tend to spend more hours in the clinic to see more patients. And, and they tend to squeeze in terms of the time slot to have more patients.*	Affected by revenue share
PH1	*I think some services may get delayed if it is not approved or covered in terms of reimbursement and the revenue-oriented doctors will not perform those procedures till the service is covered, I cannot also blame them because it is also a private hospital and the patients came by their own choice and free well.*	Affected by revenue share
HL3	*I think revenue share and incentivized doctors are trying to rush to do the services very fast to book that revenue as part of their revenue so that they can get their shares or incentives. However, this is not the case of the salaried only doctors.*	Affected by revenue share and incentives
FD1	*Reimbursement is the only challenge with that, the physicians' compensations system as nothing to do with the timeliness of care. If care is needed the care givers and the doctors have to offer it.*	Not affected by payment models

HL1	*I always tell the team that we need to provide care in timely manner and when the service is not covered; they can take special permissions to proceed or not to proceed. But generally, I have tried to get the physicians out of the service reimbursement so that they are not distracted when the provide patients care.*	Not affected by payment models
HL1	*So, I cannot say that the compensation model followed have impacted the timeliness of care.*	Not affected by payment models
HL4	*I think timeliness of care is not linked to the payment system followed. It has more to do with the insurance or the ability of patient to pay. In cases of emergencies which are life threatening, definitely patients receive timely care without delay.*	Not affected by payment models
HL5	*I think there is no link, patients are registered in the system and triaged if they have severe emergency, and they are treated immediately. If they have a concern which is not life threatening then we get their insurance approval then we offer the service.*	Not affected by payment models
IM1	*Generally. for elective cases we get approvals on time however for some low tier insurance we may get delayed approvals or rejections. For emergencies I think we rarely get rejections. I cannot really relate that to the physicians' compensation system,*	Not affected by payment models
PH4	*In my opinion there is no effect of the payment system of the timeliness of us processing the tests of the patients or at least I did not encounter a situation where we delayed the testing because of the payment.*	Not affected by payment models
PH5	*In the emergency department, usually patient receive timely care, may be if the case is cold and not a real emergency, we wait for insurance approval or we ask patients to pay. But I believe the compensation system does not affect our ability to provide timely care to our patients.*	Not affected by payment models

Appendix Table 9. Payment Models and Efficiency of Care

Case	Quotation	Manifestation
HL1	*I agree that due to the revenue orientation of the doctors there will be incidences of abuse and inefficiencies of the services offered. I can relate the compensation system to that.*	Related to payment models
HL3	*I was involved in many investigations and in few of those it was found that non-indicated services were offered and I would relate that to inefficiency due to processing and waste associated with those services which were proven not to benefit the patient.*	Related to payment models
HL4	*Listening to the concerns of patients, I can say they have mentioned about services offered to them which were rejected by the insurance because it is not justified and they were requested to pay in cash. Their question was always why the insurance would reject a service which is needed so in some situations and from the patients' perspective, the care offered is not efficient.*	Related to payment models
HL5	*Due to the unnecessary services offered which increase the burden on staff to process them and spend time performing that unnecessary work, I would say in some or few situations the care is not efficient and that is linked to the implemented compensation systems for physicians.*	Related to payment models
PH1	*Through my experience and as I have seen in some cases in my department, care provided in such situations are not efficient and I can relate that to compensation. I cannot also generalize that to all my physicians, many of them are providing ethical, effective and efficient care.*	Related to payment models
PH2	*Due to the incidents of over prescriptions or unnecessary admissions in my department, I would say that there is inefficiency in the system and the resources are not utilized rationally…. We are more focused at the patient ability to pay and of course because this a private hospital so if a patient can afford the service or have good insurance, he/she will receive timely care otherwise the care may be delayed or even denied.*	Related to payment models
PH3	*In terms of utilization of resources and as I said before, I think the utilization of imaging modalities is not efficient when I compare the diagnosis with the evidence-based practices in many cases however many of the doctor they follow the standards and prescribe only necessary investigations. I can see inefficiency in case of revenue share doctors by prescribing a lot of unnecessary investigation.*	Related to payment models
PH4	*I will speak as a head of laboratory and as I see the trends of the laboratory testing by physicians, I think it is not so efficient as I see some of the testing unnecessary but we cannot object on that, we can raise our concerns to the chief medical officer only.*	Related to payment models
PH5	*Some patient can be treated effectively on the emergency setting but they are being admitted because of the incentives. That is abuse of resource utilization and would be described as inefficient.*	Related to payment models
FD1	*I always debate with the doctors regarding the consumables used especially for the surgical cases and my experience is that the revenue share and incentivized doctors are more conscious to the efficiency of utilization of resources than the pure salaried doctors.*	Related to revenue share and incentives

HL2	*We can say in revenue share and incentivized physicians especially in medical specialties there are over prescription of investigations and that is seen through the peer review conducted monthly. We speak to those physicians however compensation system should also promote that efficiency of utilization of the hospital resources.*	Related to revenue share and incentives
IM1	*Like I mentioned earlier I can see many doctors due to the incentives are requested unjustified laboratory or radiology investigations and some other times are trying to justify a case of admission or procedure as emergency while it is elective. Me and my team struggle in such situations so I believe there is a negative influence of the compensation system on efficiency.*	Related to incentives
NU2	*Due to the incidents of over investigations, I would say that care in some occasions is not efficient. However, I would say that salaried doctors and especially those who are incentivized are providing efficient care because they know that the cost will be deducted from their incentives.*	Related to incentives

Appendix Table 10. Payment Models and Equity of Care

Case	Quotation	Manifestation
IM1	*I cannot see a relationship between both. It only depends on the ability of patients to pay or the strength of the insurance coverage which will determine whether the patient will get the services or not especially in elective cases.*	Not related to equity
FD1	*I do not think so*	Not related to equity
HL2	*I do not think so, I think it has no effect especially at the point of care*	Not related to equity
HL3	*I think the care we provide is equitable and it is not linked to the physician compensation system.*	Not related to equity
HL4	*I cannot relate equity of care to the payment model. Only in one situation when the patient has a very good insurance card which covers everything then the doctors are very cooperative and they can offer them all the services they needed whether indicated or not indicated.*	Not related to equity
HL5	*I would say no, there is no linkage between those. It is the reimbursement system itself which guides the equity and the ability of patient to pay. However, in all other aspects of receiving care, I believe we offer equitable care to all our patients*	Not related to equity
PH1	*I think the payment system for physicians does not affect the equity of care as a dimension and I believe our care is equitable but affected by other factors but not the compensation of physicians.*	Not related to equity
PH5	*I think no at least in the emergency department,*	Not related to equity
PT3	*No, I do not think so… I most of the time receive care without delays and I do not see other persons are receiving better care than me. So, I think the care is equitable.*	Not related to equity
HL1	*I think in some occasions where doctors are incentivized or on revenue share, yes… Some of the doctors especially those with high volumes and who are oriented to revenue and incentives may dedicate more effort towards the high value patients' procedures which may be fair or not fair as the simple cases may by default need lesser time and effort to be managed*	Related to equity
PH2	*I think yes and that is why some patients are not able to receive timely care.*	Related to equity
PH3	*Yes definitely, if the patient is not able to pay and I know that I will have consequences if I offered the service, I will not offer it on time and it will be delayed till the service is paid,*	Related to equity
NU1	*I think yes it can compromise the equity of care but I cannot draw a clear line between them… To offer service which is not billed that leads to compromise when it comes to equity of care but at the end it is a private hospital and it cannot provide its services for free.*	Related to equity
NU2	*I think yes,*	Related to equity
PT2	*Yes, because in private hospitals if you cannot pay, you can receive the care. But I cannot relate that to the compensation system … Simply if you do not have insurance coverage or if you cannot pay, you will face significance delays or even you may not be able to receive the case you need.*	Related to equity

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Curriculum Vitae

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April 2023

Education

Indiana university, Indianapolis, USA , USA expected 2023

DRPH (Doctor of Public): Global health leadership

Frankfurt School of Finance and, Germany Triple accredited business school.

MBA: International Healthcare Management 05/2018

George Washington university, Washington , USA 05/2019

Certificate of Public Health

American University, Cairo 2010

Diploma: Total quality management for healthcare reform

MNF University Medical College, Egypt 2009

MBBS

Other Certifications

o Fellowship of International Society for Healthcare Quality/ Ireland, FISQUA – 2022.

o Black Belt Lean Six Sigma Certification - June 2022.

o Certification Board of Healthcare Quality (CPHQ), NAHQ - 2011, 2013,2015, 2017, 2019, 2021, 2023).

o Certified ISO 9001:2015 internal auditor, June 2022

o Certified Medical travel professional, Medical travel association

o Project management professional, PMP, 2022.

Research Activities ____

Master thesis on pay for performance payment models.

Block chain applications in healthcare.

Internet of things and remote monitoring devices for patient care and safety.

Effect of clinical decision support systems on outcomes of clinical care comparison between 5 hospitals in UAE and KSA.

Part of the research on safety of the COVID 19 vaccination in coordination with G 42 laboratory and Ruwais hospital.

Professional experience in international public health organizations which include teaching and consultation ____

Technical consultant in the department of emergency management (temporary contract April 5 till July 6 2021) World Health Organization (EMRO)

- ECSA (Emergency care system assessment) update in light of the CVOID 19 pandemic involving the country offices and making use of the literature review of the best practices of the emergency care systems in the COVID 19 ERA.
- Update of WCO readiness checklist and the road map to implementing it using an online tool.
- Evaluation of the WHO emergency operations readiness framework through literature review of the latest best evidences and semi structured interviews with the country offices representatives and Health departments' representative.
- Development of Emergency operations readiness guide version to be reviewed by the country office representatives.
- Development of online EMERGENCY readiness and response course in coordination with the EMRO team and teaching part of the curriculum.
- Developing abstracts of the above-mentioned work for publishing in public health journals.

teaching interests ____

Lectures: Quality management for healthcare, revenue cycle management, healthcare information management, emergency preparedness for healthcare settings, Human Motivation, Intergroup Relations, strategic planning, project management, healthcare risk and operations management.

Publications: NONE