

Patient-centric care in the U.S. - A comparative study of patient satisfaction and quality care among for-profit physician-owned, corporate owned, and not-for-profit hospitals^[1]_[2]

Arun Sharma

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

In

Public Administration and Public Affairs

Karen M. Hult, Chair

Robin H. Lemaire

Adam M. Eckerd

Joseph V. Rees

(Date of Defense – August 6, 2018)

Blacksburg, VA

Keywords: patient-centric care, physician-owned hospitals, patient satisfaction, patient outcomes, value of care, Affordable Care Act section 6001, consumer driven health care

© 2018 Arun Sharma

All Rights Reserved

Patient-centric care in the U.S. - A comparative study of patient satisfaction and quality care among for-profit physician-owned, corporate owned, and not-for-profit hospitals^[1]_{SEP}

Arun Sharma

Abstract (Academic)

This dissertation examines the effects of physician ownership of hospitals on the quality of patient-centric care in the U.S. The health care sector in the U.S. is becoming more aligned with markets and in turn, with consumers' preferences. In consumer driven service industries, consumer satisfaction is considered a key criterion to judge quality. In the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient satisfaction surveys, physician-owned hospitals (POHs) get more top 5-Star ratings than other hospitals. However, it is not known whether higher perceived patient satisfaction is because of better inpatient experience or due to better health related outcomes. Ratings also do not clarify variations between specialty and general service POHs. The study compares the quality of care in POHs with that in other major forms of hospitals (corporate-owned, and not-for-profit). The Affordable Care Act (ACA) regulated physician ownership of hospitals due to concerns that physicians' profit motive might negatively affect the quality of care. This non-experimental study used bivariate and multivariate analyses to examine variation in the quality of care among types of hospitals in 2017 and 2018 using patient satisfaction and clinical outcomes as indicators of quality. This study used two samples, a full and a restricted sample. Full sample compared all POHs (specialty and general service) with other hospitals. Restricted sample included only general service hospitals. Patients in POHs were found to have higher perceived satisfaction, and viewed providers' practices more favorably in the full sample. In the restricted sample, however, not-for-profit (NFP) hospitals provided relatively better care. Corporate-owned hospitals had lowest patient satisfaction and poorest outcomes. Results indicate POHs are competitive with not-for-profit hospitals on patient satisfaction dimension of quality care. Multivariate analyses suggest that the effects of physician ownership go away when mediation by providers' practices is considered. NFP hospitals, however, continue to provide better overall value of care. The results do not support reconsideration of the ACA restrictions on POHs. Patient satisfaction may be contingent upon patient-centric practices than type of hospital, but hospital ownership may affect preference for some practices over others. Outcomes may not matter when patients' perceptions measure quality.

General Audience Abstract

The health care sector is becoming more closely linked to markets, and consumer experience and satisfaction, like any other consumer services industry due to growing influence of for-profit hospitals and hospital forms. Physician-owned hospitals are a relatively new form of hospitals in the U.S. Along with more traditional not-for-profit and corporate-owned hospitals; physician-owned hospitals compete for patients and patient dollars. Many physician-owned hospitals are specialty and surgical hospitals, in addition to general service hospitals. According to federal government surveys, patients usually perceive medical care provided by physician-owned hospitals to be of superior quality to that of other kinds of hospital. However, physician-owned hospitals are a type of for-profit hospital, and it is not clearly known if general service physician owned hospitals provide similar care as specialty hospitals. This research compared possible quality differences between specialty and general service physician-owned hospitals as well as with corporate-owned and not-for-profit hospitals. The results indicate that patients' perceptions of quality of care are not consistent for physician-owned specialty and general service hospitals; the higher patient perception ratings for physician-owned hospitals reflect the better performance of specialty hospitals. In comparison with other hospitals, not-for-profit hospitals seem to provide better quality of care (tapped by both patient satisfaction and clinical outcomes) than for-profit hospitals. Corporate-owned hospitals were found to have lowest quality of care. Patients should consider tradeoffs between having better inpatient experiences and better outcomes of care.

ACKNOWLEDGEMENT

This dissertation research would not have been realized without the continuous support of my committee. My committee chair, Dr. Karen M. Hult, dedicated countless hours to office visits, chapter reviews and revisions since 2016. I owe her a great debt of gratitude for all her efforts and continuous support that she has given me for most of my time at CPAP. Drs. Robin H. Lemaire, Adam M. Eckerd and Joe V. Rees have been a constant presence ever since I started my doctoral degree at CPAP. I am deeply grateful to them for being on my committee. I would also like to acknowledge the rest of the CPAP faculty and staff for their support throughout my doctoral degree. Finally, I would like to thank my friends and family who made many sacrifices that allowed me to follow this path.

TABLE OF CONTENTS

ABSTRACT	ii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	vii
LIST OF TABLES	viii
ABBREVIATIONS	ix
CHAPTER 1: INTRODUCTION	1
1.1 QUALITY OF CARE: PATIENT-CENTRIC CARE AND THE ACA	3
1.2 PHYSICIAN OWNERSHIP IN HOSPITALS AND QUALITY ASSOCIATION	6
1.3 SIGNIFICANCE OF ANALYSIS	9
1.4 CHAPTER ORGANIZATION	10
CHAPTER 2: MARKET LOGIC, HOSPITALS, AND QUALITY OF CARE	12
2.1 THE RISE OF FOR-PROFIT HOSPITALS	13
2.1.1 HOSPITAL PROFITS AND QUALITY OF CARE	16
2.1.2 CORPORATE-OWNED AND NOT-FOR-PROFIT HOSPITALS, AND MARKET CONSOLIDATION	16
2.2 PHYSICIAN-OWNED HOSPITALS	18
2.2.1 RISE OF PHYSICIAN-OWNED HOSPITALS	20
2.2.2 PHYSICIAN-OWNED HOSPITALS AND QUALITY OF CARE	20
2.2.3 PHYSICIAN-OWNED HOSPITALS AND QUALITY CONCERNS	22
2.3 OTHER FACTORS AFFECTING QUALITY OF CARE	28
2.3.1 THE ACA AND QUALITY SANCTIONS	28
2.3.2 INFORMATION ASYMETRY	31
2.3.3 VARIATION IN MEDICAL PRACTICES AND QUALITY UNCERTAINTIES	32
2.4 CMS QUALITY STRATEGY	33
2.5 QUALITY OF CARE IN CONSUMER MARKETS	35
2.6 CONCLUSION	36
CHAPTER 3: CONCEPTUAL FRAMEWORK	38
3.1 THE ACA AND PATIENT SATISFACTION	38
3.2 PROVIDER-PATIENT RELATIONSHIPS IN A CONSUMER-DRIVEN ENVIRONMENT	42
3.3 DONABEDIAN MODEL	46
3.4 CONCEPTUAL FRAMEWORK	49
3.5 HYPOTHESES	54

3.5.1 CONTROLS	57
3.6 CONCLUSION	58
CHAPTER 4: RESEARCH DESIGN	59
4.1 DATA SOURCES	59
4.2 OPERATIONALIZATION	60
4.2.1 DEPENDENT VARIABLES	60
4.2.2 INDEPENDENT VARIABLES	64
4.3 SAMPLE	66
4.3.1 FULL AND RESTRICTED SAMPLES	67
4.3.2 HCAHPS SUMMARY RATINGS	68
4.4 DATA	69
4.5 ANALYZING THE DATA	70
CHAPTER 5: FINDINGS	73
5.1 DESCRIPTIVE INFORMATION	73
5.1.1 STRUCTURAL CHARACTERISTICS	73
5.1.2 TIMELINESS OF CARE	76
5.1.3 COSTS OF CARE	77
5.1.4 PROVIDERS' PRACTICES	79
5.1.5 PATIENT SATISFACTION AND OUTCOMES	83
5.2 TESTING OF HYPOTHESES	87
5.3 SUMMARY OF FINDINGS	91
CHAPTER 6: CONCLUSION	113
6.1 PUBLIC AFFAIRS SIGNIFICANCE	115
6.2 MANAGERIAL IMPLICATIONS	118
6.3 IMPLICATIONS FOR PUBLIC ADMINISTRATION	123
6.4 IMPLICATIONS FOR ORGANIZATIONAL DESIGN	124
6.5 LIMITATIONS	125
6.6 FUTURE RESEARCH DIRECTIONS	127
6.7 CONCLUSION	130

LIST OF FIGURES

2.1 Value-based programs initiated after passage of the ACA	31
2.2 Aims and priorities of the CMS Quality Strategy	34
3.1 Types of provider-patient relationships	43
3.2 Conceptual Framework	53
4.1 HCAHPS survey items on patient satisfaction	62
6.1 Attributes of health care quality by hospital type	116

LIST OF TABLES

4.1 Types and Numbers of Sampled Hospitals	67
4.2 Hospitals and Numbers in the Final Sample	68
4.3 HCAHPS summary ratings: Modes	69
5.1 Structural characteristics of sampled hospitals	74
5.2 ANOVA Table - Structural characteristics	75
5.3 Emergency department timeliness of care by hospital type	76
5.4 Cost of Care - Inpatient Charges and MSPB	78
5.5 Value of care differences among hospitals for AMI, HF, PN, and Hip & Knee conditions	79
5.6 Mean differences in providers' practices	80
5.7 ANOVA Table - variance between providers' practices	81
5.8 Quality of care differences	84
5.9 ANOVA table - variance in quality of care indicators	85
5.10-5.12 Regression Tables	93

LIST OF ABBREVIATIONS

ACA	Affordable Care Act
AHA	American Hospital Association
AHRQ	Agency for Healthcare Research and Quality
CMS	Centers for Medicare and Medicaid Services
CMI	Case Mix Index
CON	Certificate of Need
COP	Conditions of Participation
Corp.	Corporate-owned hospital
DHS	Designated Health Services list
DRG	Diagnosis-Related Group
FAH	Federation of American Hospitals
FTC	Federal Trade Commission
GAO	General Accountability Office
HACRP	Hospital Acquired Condition Reduction Program
HCA	Hospital Corporation of America
HCAHPS	Hospital Consumer Assessment of Healthcare Providers and Systems
HRRP	Hospital Readmissions Reduction Program
HVBP	Hospital Value-Based Purchasing Program
IOM	Institute of Medicine
IPPS	Inpatient Prospective Patient System
MACRA	Medicare Access & CHIP Reauthorization Act
medPAC	Medicare Payment Advisory Commission
NFP	Not-for-profit hospitals
NQF	National Quality Forum
PHA	Physician Hospitals of America
POH	Physician-owned hospitals
S-P-O	Structure-Process-Outcome

CHAPTER: 1 – INTRODUCTION

The Affordable Care Act (ACA) sought to reshape health care in the U.S. in part through using financial incentives to stimulate greater emphasis on patient-centric care. In response, many hospitals compete with each other based on their claims of providing better patient experiences, greater satisfaction, and, at least implicitly, better outcomes.

Such competition for patients and patient dollars is not limited to for-profit hospitals; not-for-profit hospitals also compete for patients and funding. Not-for-profit hospitals rely less on donations than they did as recently as the 1980s. By the start of the 21st century, a major source of funds for not-for-profit and for profit hospitals alike has been the sale of medical services. With the advent of market-linked health care policies, which accelerated after the failure of federal health care reform in the early 1990s, hospitals, like other service-based industries and organizations, began focusing on improving patient satisfaction in order to create a loyal consumer (patient) base and generate more profits (Scott, Ruef, Mendel, & Caronna, 2000; Herzlinger, 2004, 2007).

Yet, some hospitals may be better than others in producing desirable patient outcomes and in providing better overall quality of care. Meanwhile, many, including some members of Congress, are concerned about the financial ties between health care providers (especially physicians) and health care service delivery, focusing considerable attention on physician owned hospitals (POHs), surgical centers, and other specialized facilities. Section 6001 of the ACA, for example, regulates physician-ownership in hospitals, restricting the expansion of current POHs and banning creation of new POHs that seek Medicare funding.

Considerably less clear are whether and how hospital ownership might be linked to the quality of healthcare that patients receive. Hospitals owned by physicians, corporations, and not-

for-profit organizations may provide varying levels of quality care. Previous research, for example, by Blumenthal, Orav, Jena, Dudzinski, Le, & Jha (2015) compared the quality of care between POHs and non-POHs and concluded that POHs generally provided comparable care. In the Blumenthal et al.'s study non-POHs included both other for-profit hospitals like corporate-owned hospitals and not-for-profit hospitals. The scholars suggested that the U.S. Congress reconsider policies that target all POHs (for example, ACA section 6001) and allow POHs to expand since they provide medical care that is comparable to non-POHs (Blumenthal et al., 2015, p. 5). Yet their research did not consider the distinction between surgical specialty and non-surgical general POHs; nor did they consider patient outcomes (p. 6). Blumenthal, et al. compared all POHs with non-POHs, neglecting the possibility that specialty hospitals typically might be better than general hospitals independent of their ownership.

Physician Hospitals of America (a professional organization that advocates for physician-ownership based on values of free market competition, efficiency, and market-oriented quality care) relied on the Blumenthal et al. research to lobby members of Congress to repeal section 6001.¹ Although PHA persuaded Republican members to introduce bills in both chambers neither passed.

Without considering variations or similarities in quality care between specialty and general service POHs, and how they compare with not-for-profit and corporate-owned hospitals, PHA's lobbying efforts may have been based on premature evidence. Such reconsideration of existing policy arguably should be based on a deeper analysis of the relationship between physician ownership of hospitals and the quality of care.

¹ https://cdn.ymaws.com/www.physicianhospitals.org/resource/resmgr/2017/HR1156/Support_High-Quality_Hospita.pdf

This study analyzes patient satisfaction and outcomes in for-profit physician-owned, corporate-owned and not-for-profit hospitals. Such comparative analysis adds to our understanding of the quality of care that hospitals provide and factors that might be associated with higher quality care. The research explores two questions. What difference, if any, does physician ownership of hospitals make for quality of care compared to the quality of care in corporate-owned and NFP hospitals? Are there differences in quality of care between specialty and general service POHs?

To lay broader foundations for the study, the rest of this chapter briefly describes quality of care as envisioned by the ACA. The notions of patient-centric care, personalized care, outcomes, patient safety that ACA institutionalized initially got introduced in health care debates in the U.S. through Institute of Medicine's (IOM) quality related reports in late 1990s and early 2000s. The chapter then introduces the definition of patient-centric care as originally given by IOM. It then discusses arguments associating physician ownership in hospitals with better quality of care, and also provides a brief overview of the section 6001 of the ACA that was instituted due to concerns among lawmakers about physician ownership and profit motive. Next, I discuss the study's anticipated scholarly and public affairs contributions. The chapter ends with a road map for how the dissertation proceeds.

1.1 QUALITY OF CARE: PATIENT-CENTRIC CARE AND THE ACA

In the late 1990s, the IOM first advocated patient-centered care as one of the key aims for reinventing the health care system in the U.S. IOM's *To Err Is Human* (1999)² and *Crossing the*

²<http://www.nationalacademies.org/hmd/~media/Files/Report%20Files/1999/To-Err-is-Human/To%20Err%20is%20Human%201999%20%20report%20brief.pdf>

Quality Chasm (2001)³ catalyzed emphases on health care quality and patient safety and inspired more organizational analysis of health care (Mick & Shay, 2014). The IOM 2001 report introduced a set of six aims as part of its strategy to improve quality of care and reinvent health care systems in the U.S. It also identified key constituencies that should be targeted for advancing the goal of effectively “meeting patient needs” (p. 3). Among them included lawmakers, regulators, organization managers, and consumers. IOM also ruled that care should be “customized according to patient needs and values”, and “[p]atients should be given the necessary information and opportunity to exercise the degree of control they choose over health care decisions that affect them” (pp. 3-4). IOM defined patient-centric care as care “that is respectful of and responsive to individual patient preferences, needs, and values, and ensur[es] that patient values guide all clinical decisions.” Prior to the IOM’s 2001 report, health care in the U.S. had already started focusing on consumers as early as 1980’s and early 1990’s when more market-based policies got introduced (Scott et al., 2000). Later, ACA in its push for designing more patient-centric care combined more substantive aims advanced by IOM as well as consumer evaluations to create a pay-for-performance health care system in the U.S.^{4,5}

The IOM reports in general pushed health care towards issues of patient safety (Stelfox, Palmisani, Scurlock, Orav, & Bates, 2006), while simultaneously influencing the views of policymakers and health care administrators.

Such changes laid the groundwork for the so-called quality movement in U.S. health care (Leape & Berwick, 2005). Quality care from this perspective should be safe, effective, patient-

³<http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2001/Crossing-the-Quality-Chasm/Quality%20Chasm%202001%20%20report%20brief.pdf>

⁴ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs.html>

⁵ https://www.healthaffairs.org/doi/10.1377/hpb20121011.90233/full/healthpolicybrief_78.pdf

centered⁶, timely, efficient, and equitable.⁷ Among the tools IOM suggested for providing higher quality care are greater physician accountability, use of patient surveys, quality management programs at the national and local levels⁸, and performance-based reimbursement (Mick & Shay, 2014, p. 14).

These sorts of ideas and initiatives gained renewed currency with passage of the ACA. By focusing on providing “value-based care” to patients and creating pay for performance cultures, the ACA pushed for medical care based on improved patient safety, inpatient experiences and outcomes⁹. Patient feedback and satisfaction became significant factors in measuring hospital performance and for achieving a patient-centered, value-based general system of health care.

Value-based care (care that is “better, smarter, healthier”) is part of the broader quality strategy of the Centers for Medicare and Medicaid Services (CMS), a key actor in implementing the ACA. CMS has proposed pursuing value-based care by providing incentives to hospitals, developing innovative payment models, better coordinating among service providers, leveraging health care information, and creating healthier communities.¹⁰ For example, in pay-for-performance reimbursement models, such as those ACA created, hospitals receive quality performance bonuses under the “Hospitals Value Based Purchasing Program” (HVBP). Under

⁶ <http://www.nationalacademies.org/hmd/~media/Files/Report%20Files/2001/Crossing-the-Quality-Chasm/Quality%20Chasm%202001%20%20report%20brief.pdf>

⁷ https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/sixdomains.html#_ftn1

⁸ Illustrations at the national level were the National Strategy for Quality Improvement, the National Committee for Quality Assurance certification programs, and the Beacon Community Program; local illustrations included Aligning Forces for Quality (Robert Wood Johnson Foundation), Transformative Care at the Bedside, and Hospital Quality Network initiatives (Mick & Shay, 2014, p. 14)

⁹ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalHCAHPS.html>

¹⁰ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/CMS-Quality-Strategy.html>

performance-based reimbursement models, hospitals are not paid for services they provide to patients; instead payments are linked to patient satisfaction and outcomes.

According to the insurance provider Aetna, the aims of value-based care are to improve the quality and efficiency of care. In the value-based approach, payments made to hospitals depend on improvements in patient health; payments depend not on the quantity but the quality of care provided. Higher quality may be achieved through better coordination and greater engagement among key stakeholders, which also may reduce health care costs in the longer run.¹¹ However, little is known about how hospitals perform on these dimensions of quality based on their ownership. Evidently, ownership of hospitals affects their practices, goals, and in turn, that affects quality of care they provide to patients (Scott et al., 2000; Donabedian, 1980). As Chapter 2 elaborates, strategies for patient-centric care are based on the logic of economic markets. Next sections, here, describe arguments associating physician ownership in hospitals with quality of care, and also section 6001 of the ACA that was instituted due to concerns among lawmakers about profit motive associated with physician ownership in hospitals.

1.2 PHYSICIAN OWNERSHIP IN HOSPITALS AND QUALITY ASSOCIATION

Scholars, like, Herzlinger (2004, 2007) argue for-profit physician owned hospitals are best suited to deliver best quality and most cost effective care to patients, and that not-for-profit hospitals are responsible for deteriorating quality of care in the U.S. She argues that physician investments in hospitals and greater professional autonomy because of ownership are better ways of improving the quality and cost effectiveness of medical care. Other proponents of physician ownership in hospitals (for e.g., trade association like PHA) contend that POHs may be better suited for achieving triple aims of the ACA, improving quality of care, enhancing societal health

¹¹ <https://news.aetna.com/2017/10/value-based-care-new-patient-centered-approach-health-care/>

and controlling the costs of care.¹² POHs evidently also get more 5-Star ratings than other hospitals in Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys, as the CMS’s “Hospital Compare” data suggest. Higher ratings indeed suggest POHs might be better, at least, according to patients’ subjective assessments and perceptions.

Using interview data from the Community Tracking Study (CTS) of the Center for Studying Health System Change and surveys of chief executive officers (CEOs) and medical directors of specialty hospitals, Casalino, Devers, & Brewster (2003) found “medical group leaders emphasized that having a facility that they control and that is designed specifically for their needs increases their productivity, decreases costs, and increases quality” (p. 60). These authors also found higher efficiency and better scheduling in specialty facilities because of fewer disruptions due to emergencies (p. 60). Their survey reported that patients have better overall experiences because of shorter wait times and facilities like easily accessible parking that other hospitals might not provide. Physician-owned “specialty facilities could improve quality simply because their physicians and other staff work together daily providing the same services again and again” (p. 62). Having a “dedicating staff, equipment, and management attention to the treatment . . . both inpatient (specialty hospitals) and outpatient (ambulatory surgery centers) focused factories could provide better quality health care, at lower cost, and with higher patient satisfaction” (Casalino et al., 2003, p. 56). If so, POHs would be expected to have greater patient satisfaction as well as better patient outcomes than other hospitals. Scott et al. (2000), however, argue that quality of care is associated with professional authority and a nonprofit ethos.

That said, some evidence exists of an association between professional control and better productivity in health care. Evidence shows physician-hospital consolidation increased between

¹² <https://www.beckershospitalreview.com/hospital-physician-relationships/10-things-to-know-about-physician-owned-hospitals.html>

2007-17. According to Nikpay, Richards, & Penson (2018), vertical integration between physician practices and hospitals increased by 34% in cardiology and oncology in the same period. Greater integration was observed in surgical specialties and primary care practices saw lowest growth rates (p. 1123). Courtney, Darrith, Bohl, Frisch, & Della Valle (2017) also found POHs had lower complications and costs, and higher patient satisfaction in case of total hip arthroplasty (THA) and total knee arthroplasty (TKA) than non-POHs. Greater vertical integration potentially suggests physicians may be adding value of more professional interventions, which might make quality of care relatively better in POHs than other hospitals.

Better performance of POHs might be true in case of specialty and surgical hospitals, but the relationships among physician ownership, patient experience and clinical outcomes are not clearly known in general service POHs. It is possible that specialty surgical POHs have better patient outcomes than general service POHs. Whether specialty and general service POHs differ in performance is not known. Blumenthal et al.'s (2015) analysis of quality care in POHs and non-POHs did not explicitly compare performance between specialty and general service POHs. Moreover, the higher percentage of top 5-Star ratings POHs receive in HCAHPS patient satisfaction surveys do not distinguish between specialty and general service POHs. This research would show if any performance differences exist between specialty and general service POHs. If there are no performance differences between specialty and general service POHs, regulations on physician ownership in hospitals may be reconsidered. Currently, section 6001 of the ACA regulates physician investments and capacity in POHs due to potential conflicts related to physician ownership and self-referrals. Chapter 2 describes POHs and controversies surrounding POHs in greater detail. Next section, here, provides a brief overview of section 6001 of the ACA.

Section 6001, ACA: Most directly relevant to POHs, though, has been the section 6001 of the ACA. Section 6001, Subtitle A, Title VI¹³ regulates physician ownership in hospitals to prevent conflicts of interest between referring physicians who might be owners or investors in a health care facility that receives Medicare funding. The law restricts physicians' ownership stake to only the original ownership percentage, and it prohibits physicians from increasing their ownership stakes in any health care facility.¹⁴ In addition, the ACA prohibits hospitals from making special accommodations for investor physicians, and it does not allow existing physician-owned hospitals to add new operating rooms, beds or procedure rooms. However, such hospitals may submit an exception¹⁵ request to the Secretary of the HHS for a proposed increase in capacity but only on the main campus of the hospital; all exceptions approved the Secretary must be restricted to less than "200 percent of the baseline number of operating rooms, procedure rooms, and beds of the applicable hospitals" (124 STAT. 687).

1.3 SIGNIFICANCE OF ANALYSIS

This is the first known study that simultaneously analyzes hospitals based on their ownership and medical profiles, the practices associated with quality care, and the outcomes of care.¹⁶ From a policy perspective, this study might contribute to making better-informed decisions about, for example, existing ACA provisions pertaining to physician-ownership in hospitals. More specifically, if there are quality variations between specialty and general POHs,

¹³ "Subtitle A – Physician Ownership and Other Transparency", "SEC. 6001. LIMITATION ON MEDICARE EXCEPTION TO THE PROHIBITION ON CERTAIN PHYSICIAN REFERRALS FOR HOSPITALS", PUBLIC LAW 111-148 – March. 23, 2010 - <https://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>

¹⁴ The ACA regulations made March 23, 2010 as the cutoff date for POHs. After March 23, 2010, POHs were not allowed to add any additional capacity, for example, more number of beds. Physicians could not increase their ownership stake either after March 23, 2010. <https://www.lexology.com/library/detail.aspx?g=50c8ba06-538c-4ba5-a3a1-08e60a672707>

¹⁵ https://www.cms.gov/Medicare/Fraud-and-Abuse/PhysicianSelfReferral/Physician_Owned_Hospitals.html

¹⁶ Medical profile, here, means whether hospitals are acute care or surgical specialty hospitals.

it might caution policymakers against using a better performing POH to represent POHs generally. Separate policies might be needed for specialty and general service POHs. Broadly, from a market linked health care perspective, this research examines whether the profit motive improves or reduces the overall quality of care patients receive in hospitals. Similarly, prospective patients may be able to make better-informed decisions about choosing hospitals.

The research is relevant for policy scholars as well. They may be better able to identify organizing values associated with varying levels of quality care. This knowledge might inform normative notions associated with “quality”. Better understanding of possible relations between hospital ownership, practices, and quality may provide further insight into the dynamics of market-based relations and activities. If the data show relatively lower quality care in for-profit hospitals (both POHs and corporate-owned hospitals) compared with not-for-profit hospitals, this would support Scott’s (2003) arguments about the replacement of professional autonomy and physician control by a market-managerial logic (cf. Scott et al., 2000). If so, claims about physician ownership being associated with stronger patient-focus and more patient-centric care might be questioned.

1.4 CHAPTER ORGANIZATION

The chapters that follow begin, in Chapter 2, with an introduction to quality of care in market-based health care environment. It then describes POHs from the perspective of market-based quality of care perspective, and also describes concerns related to cost of care, patient referrals and quality of care in POHs. Then chapter then briefly describes other two major hospital forms in the market-based health care environment, i.e., corporate-owned and NFP

hospitals. Next, the chapter describes quality of care in consumer markets and factors that might affect quality of care. Chapter concludes with a brief discussion about CMS's Quality Strategy

Chapter 3 introduces the conceptual framework used for this research. The framework is based on the measurement of patient satisfaction by the HCAHPS survey through patients' perceptions of providers' practices and patient outcomes. Both patients' perceptions as well as outcomes here define "quality care," because hospital reimbursements are based on them. The chapter first discusses patient satisfaction in the context of the ACA, and then the nature of provider-patient relationship in a consumer-driven health care environment. Chapter then describes Donabedian's (1980) SPO model, which is also used by AHRQ for assessing quality of care. The chapter concludes with a conceptual framework that is based on both market-based consumer-driven health care as well as Donabedian's model, and hypotheses drawn from the framework.

Chapter 4 describes the research design I used to examine them. The chapter discusses the data sources, hospital samples, operationalizations of the key variables, and data analysis methods.

Chapter 5 presents the findings, exploring how the hypotheses performed. Finally, Chapter 6 concludes the dissertation by briefly summarizing the findings and discussing their implications for practitioners, public affairs, and organizational theory scholarship. After noting the study's limitations, the chapter concludes with directions for future research.

CHAPTER 2: MARKET LOGIC, HOSPITALS, AND QUALITY OF CARE

Hospitals have been “the central workplace of the American health care system” (White, 1982, p. 143) for decades, and they are “undergoing dramatic changes in structure; and all struggling to survive” (Scott et al., 2000, p. 39). Delivery of health care related services was once assumed to be “immune from market forces” (Scott et al., 2000, p. 61). However, due to the rapid rise in for-profit medical care providers and specialty clinics (Gray, 1986), along with corporatization of hospitals and the emergence of hospital networks (Burns, 1990; Starr, 2008; White, 1982), the health care sector has become highly reactive to market changes, consumer sentiments and demands (Scott et al., 2000). “These changes are reflected both in ownership arrangements and in the behavior of healthcare organizations” (Scott et al., 2000, p. 61). Ownership affects not only organizational goals and expectations, but also the behavior of organizational members (p. 109). Meanwhile, the “shift from professional service norms and models to more commercial and market-oriented approaches” (pp. 61 – 62) may well affect the quality of inpatient care in hospitals.

This chapter is organized into two parts. The first describes several key factors that may have contributed to the rise of for-profit hospitals generally in the U.S. and then some that may have led to the rise to POHs. Second, the chapter discusses implications of the POH form for the quality of patient care. Arguments for and against physician ownership and its association with quality care are discussed here in greater detail, including cost of care, patient referrals, and ACA section 6001. The chapter then turns to more general factors that might affect quality of care, for example, ACA-proposed quality sanctions, information asymmetries, variations in medical practices and uncertainties associated with quality care. Discussion next considers CMS’s

Quality Strategy to improve quality of care in the U.S. Finally, quality is discussed from the perspective of consumer markets.

2.1 THE RISE OF FOR-PROFIT HOSPITALS

Since the late 1980s and early 1990s, when more market-based approaches to health care started dominating in the U.S. emphasis on broader coverage (i.e., greater access to health care) was slowly overtaken by consumer driven health care practices (Perry, 2012, pp. 377-379; Scott, 2003). With this shift, more entrepreneurial and specialized physician services influenced “the relational dynamics of physician-patient relationships [that had been] governed by principles of nonmaleficence and beneficence” (Perry, 2012, p. 378).

The 1990s were tumultuous and consequential years for U.S. health care, largely because of federal government-backed reforms and the reemergence of efficiency emphases.¹⁷ Mostly due to the overall failure of federal efforts to more effectively balance costs, quality and access, the private sector became a prominent player in the organization and distribution of health care in the U.S. (Sultz & Young, 2006, p. 2); containing the rising costs of health care became a primary concern (p. 3). Market-oriented approaches also shifted influence to providers and insurers, which now had greater autonomy to “work out what care would be delivered and how, as long as they met government requirements for budgetary and cost controls.”¹⁸

Yet general instability in health care markets tested the effectiveness of market-oriented approaches, as market fluctuations produced even more uncertainty in the health care sector

¹⁷ The Clinton administration referred to David Osborne and Ted Gaebler’s (1992) *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector* for guiding its reform efforts.

¹⁸ With the unsuccessful governmental interventions in health care, the “third goal, equitable access, seems to have been deferred indefinitely” (Sultz & Young, 2006, p. 30). To achieve greater equity in access to health care, government’s dependence on non-profits may further increase (Worth, 2012, pp. 46 - 49). Market-oriented approaches may, in fact, have been beneficial to non-profits generally as they created a gap in service delivery that only nonprofits could fulfill.

(Sultz & Young, 2006). Such fluctuations further prioritized organizational values of efficiency over quality or equity (Sultz & Young, 2006, p. 5). That market orientations made providers more concerned with costs rather than with quality suggests that the health care sector in general and hospitals more specifically pursued efficiency-based practices as they struggled to survive.

The Medicare Modernization Act of 2003 also contributed to the rising influence of the private sector and brought additional uncertainties to the American health care sector (Doherty, 2004; Mick & Shay, 2014). Although the Act had some initial positive effects on controlling health care expenditures through “consumer-driven health plans” (Wilensky, 2006, p. 175), its long-term effects on the overall quality of care seemed uncertain after expenditures began rising again (Feldman, Parente, & Christianson, 2007; Gold, 2009; Buntin, Damberg, Haviland, Kapur, Lurie, McDevitt, & Marguis, 2006).

Since the beginning of the 21st century, the “shift from professional service norms and models to more commercial and market-oriented approaches signals an important change in the meanings associated with” the activities and logics of each field and its actors (Scott et al., 2000, pp. 61 – 62). For example, in the case of hospitals, “[o]wnership status frequently signifies important differences in organizational goals, in the expectations and evaluations placed on organizations, and in the identity and behavior displayed by” (Scott et al., 2000, p. 108) different actors. In market-based health care, evidently the “logics have shifted from an emphasis on quality and equity to cost containment and efficiency” (Scott et al., 2000, p. 235). Meanwhile, improving the quality of patient-centric care might require shifting prevailing market-oriented institutional norms to more patient-centered norms (Banaszak-Holl & Keith, 2014).

One potential influence on the priorities that health care providers pursue might be the type of hospital that provides care. When hospitals are categorized by ownership status, they

typically include for-profit, “corporate and other proprietary form[s]” like POHs; “non-profit facilities, including religious” hospitals; and “government-owned” facilities (Scott et al., 2000, p. 109).¹⁹ Because ownership of an organization mediates its goals, this suggests in the case of hospitals that potential variations in their activities and practices, patient focus, and general goals may be due to differences in underlying organizing values (Scott et al., 2000; Donabedian, 1980). Whether hospitals are nonprofit or for-profit may well affect the characteristics of their patient-centered services (Scott et al., 2000, p. 59). For example, for-profit hospitals might focus on structuring their activities in a manner that leads to higher profits, and a not-for-profit hospital might structure its practices based on patient outcomes and broader societal value.

Ownership also affects utilization rates for “therapeutic and diagnostic procedures” prescribed by providers (Sultz & Young, 2006, p. 4). For example, Horwitz (2005, p. 790) argues that for-profit hospitals “are most likely to offer relatively profitable medical services” than not-for-profit hospitals. For-profit hospitals are also most “responsive to service profitability” (Horwitz, 2005, p. 790). Variations in practices, in turn, may influence patients’ perceptions of the quality of medical care they receive and their satisfaction with it. Practices related variations may exist even among for-profit hospitals (See for e.g., Jindal, Gauri, Singh, & Nicholson, 2018; Zheng, Zhang, Yoon, Lam, Khasawneh, & Poranki, 2015; Herrin, Andre, Kenward, Joshi, Audet, & Hines, 2015).

2.1.1 Hospital Profits and Quality of Care

¹⁹ Hybrid or cross-over hospital forms also exist, such as those created through joint ventures between for-profit and not-for-profit hospitals (Gray, 1986, pp. 42 – 43). Some POHs are joint ventures between proprietary physicians and not-for-profit hospitals, and some form between physicians and health management companies. From an ecological perspective (Hannan & Freeman, 1993), these might be understood as “experimental organizational forms”, and they “may well become the future norm of organizational delivery forms that new environmental circumstances favor” (Mick & Shay, 2014, p. 37). However, doubts remain about the quality of care the hybrids promise to deliver, and their legitimacy is not yet established (Mick & Shay, 2014; Scott et al., 2000)

According to Wolfe, Woolhandler, & Himmelstein (2018, p. 980), quality of care varies among hospitals based on their profits. A CEO of a hospital told them “no margin, no mission.” They argue that when hospital reimbursements are market-driven, “[e]ven non-profit hospitals live or die based on profit margins”, which they often report as “surpluses” (p. 980). According to Ly & Cutler (2018), from 2003 through 2013, hospitals improved profit margins mainly by increasing the prices of medical services, not by serving a more diverse patient-mix or improving operational efficiencies. Hospitals that lost profits were those that served more publicly insured than privately insured patients. They also found not-for-profit hospitals made more profits (or surpluses) than for-profit hospitals.²⁰ A MedPAC report (2017),²¹ however, suggests profit margins were higher for for-profit hospitals. “The price-boosting that Ly identifies as a key profit-driver (among non-profit as well as investor-owned hospitals) is just one of the ill-effects of making profit margin the mission” (p. 981). Wolfe et al. (2018, p. 981) argue, “[a]s long as profit-centered care remains the key to hospital survival, patient-centered and community-centered care will suffer.” Some, like Herring, Gaskin, Zare, & Anderson (2018), and Mass, Wooll, & Carey (2018) contend that charitable and non-profit hospitals abuse their tax-exempt status behind the veil of serving the poor and elderly, and make huge profits.²²

2.1.2 Corporate-Owned and Not-For-Profit Hospitals, and Market Consolidation

The Federation of American Hospitals (FAH) was established in 1966 to represent and advocate for investor-owned private hospitals before policymakers.²³ In 1968, Drs. Thomas F. Frist, Thomas F. Frist, Jr. and Jack C. Massey in Nashville, Tennessee, founded the Health

²⁰ <https://www.forbes.com/sites/brucelee/2016/05/08/very-profitable-nonprofit-hospitals-but-where-are-the-profits-going/#4951a49f36b2>; <https://www.acsh.org/news/2017/07/19/non-profit-hospitals-can-be-extremely-profitable-11572>.

http://www.medpac.gov/docs/default-source/reports/mar17_entirereport224610adfa9c665e80adff00009edf9c.pdf.

²² <http://aid.wildapricot.org/resources/Documents/WHITE%20PAPER-Saving%20America%20from%20Four%20Horsemen%20of%20Health%20Care%20PPA%20AID.pdf>

²³ <https://fah.org/about-fah/mission-statement>

Corporation of America (HCA), one of the first hospital corporations in the U.S.²⁴ For-profit hospitals began to grow rapidly in the 1980s. Before that, not-for-profit hospitals mostly functioned independently (Prince & Ramanan, 1994). According to the 2018 American Hospital Association's (AHA) update on registered hospitals in the U.S., of 5,534 registered hospitals, 2,849 are not-for-profit hospitals, and 1,035 are for-profit hospitals (including corporate-owned and physician-owned hospitals).²⁵ Until the late 1970s, most hospitals in the U.S. were not-for-profit and government funded, with only some private for-profit hospitals (Prince & Ramanan, 1994).²⁶

The expanding network of hospitals and influence of professional hospital associations (like FAH, AHA) led to the consolidation of health care markets by for-profit and not-for-profit hospitals due to rising competition and the emergence of more market-oriented models of health care delivery and reimbursements to hospitals (Scott et al., 2000; Mick & Shay, 2014). However, the effects of market consolidation on the quality of care are inconclusive. According to Haas, Gawande, & Reynolds (2018)²⁷, “new patient populations”, “unfamiliar infrastructure”, and “new settings for physicians” affect quality of care negatively in more consolidated networks (p. 1765). They argue, because the “primary impetus [for consolidation] is often financial rather than clinical,” the teams in charge of mergers and acquisitions have little expertise in issues affecting quality of care. Physicians and other medical staff are asked later to coordinate provision of medical care as if medical care was a secondary concern. Clinicians are not involved

²⁴ <https://hcahealthcare.com/about/our-history.dot>

²⁵ <https://www.aha.org/system/files/2018-02/2018-aha-hospital-fast-facts.pdf>

²⁶ Section 501c (3) of the 1969 Tax Reform Act established the legal status of many private voluntary, religious, and charitable hospitals as not-for-profit hospitals. The Medicare and Medicaid programs (established in 1965) began funding medical care for the elderly and the poor, and the National Institutes of Health also supported medical research in for-profit and not-for-profit hospitals (Callahan & Wasunna, 2006).

²⁷ <https://www.statnews.com/2018/07/31/hospital-mergers-acquisitions-patient-safety/>

in decision-making about mergers and that potentially affect quality of care.²⁸ “Goals and responsibility for safety and quality are frequently unclear. As a result, risks to patients arise at the ‘sharp end’ of care”, and may not be fully anticipated beforehand (pp. 1765-1766).

Meanwhile, consistent with the evolution of market logic in health care since the 1990s, a third form of hospitals, the POHs, emerged as a competitive form in the health care sector since the 1990s.

2.2 PHYSICIAN-OWNED HOSPITALS

Physician-owned hospitals (POHs) comprise a relatively new, experimental organizational form in the health care sector (Hannan & Freeman, 1993; Mick & Shay, 2014). POHs are a type of for-profit hospital in which physicians or their immediate family members have ownership stakes (as defined in 42 CFR §489.3)²⁹. POHs also may be established as joint venture hospitals between physicians and health management companies or between physicians and not-for-profit hospitals. For example, the Hoag Orthopedic Institute in Irvine, California, is a 70-bed joint venture hospital established by a partnership between a group of orthopedic doctors and the not-for-profit Hoag Memorial Presbyterian Hospital. Of all hospitals that became operational between 2004 through 2009, 65% were estimated to be POHs, as were 40% between 2011 through 2013.^{30, 31}

POHs often are specialized hospitals. In 2003, a GAO report found that almost 70% of specialty hospitals had some form of physician ownership, and all specialty hospitals that had

²⁸ <https://www.beckershospitalreview.com/quality/viewpoint-why-hospital-mergers-raise-patient-safety-problems.html>

²⁹ <https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/downloads/R58GI.pdf>

³⁰ <https://www.advisory.com/daily-briefing/2016/08/15/study-finds-aca-restrictions-limited-growth-of-physician-owned-hospitals>

³¹ Considering AHA’s 2018 estimates of total numbers of hospitals in the U.S., POHs may comprise approximately about 5% of all hospitals nationwide. There were approximately 265 POHs in the U.S. by 2010 (Cole, 2013).

opened after 1990 were for-profit ventures (p. 8).³² According to Blumenthal et al. (2015), almost all specialty POHs are located in urban areas and are smaller in size than other hospitals. According to 2017 AHA data, of the 5534 hospitals in the U.S., about 270 were POHs, including specialty and general service hospitals.

Although POHs exist in 34 states,³³ the majority are located in states that have weaker “Certificate of Need” (CON) laws (e.g., Texas, Louisiana and Oklahoma)³⁴, with 106 POHs in Texas alone (Plummer & Wempe, 2016).³⁵ According to the Federal Trade Commission (FTC)³⁶, approximately 83% of POHs are located in states that do not have CON requirements. That said, 55% of all full-service hospitals and 50% of the total U.S. population are in states that do not have CON regulations. The FTC report (2004) and another report on the effectiveness of CON regulations³⁷ suggested that because certificates of need are difficult to obtain, they may shield existing health care providers from competition from more innovative providers. After the Reagan administration’s push towards market-based solutions to health care problems, several states repealed their CON regulations but they remain in 38 states (Perry, 2012).³⁸

³² <https://www.gao.gov/new.items/d04167.pdf>

³³ <https://www.forbes.com/sites/gracemarieturner/2015/11/06/lift-the-ban-on-physician-owned-hospitals/#2a19137c1531>

³⁴ American Hospital Association. April 2008. Trendwatch: Physician Ownership and Self - Referral in Hospitals: Research on Negative Effects Grows (Washington, D.C.: AHA). <http://www.aha.org/research/reports/tw/twapr2008selfreferral.pdf> ; cf. <https://www.chrt.org/document/physician-ownership-in-hospitals-and-outpatient-facilities/>

³⁵ <https://www.advisory.com/daily-briefing/2016/08/15/study-finds-aca-restrictions-limited-growth-of-physician-owned-hospitals>; <https://www.fiercehealthcare.com/hospitals/physician-owned-hospitals-increased-just-before-feds-put-limits>

³⁶ <https://www.ftc.gov/sites/default/files/documents/reports/improving-health-care-dose-competition-report-federal-trade-commission-and-department-justice/040723healthcarerpt.pdf>

³⁷ https://www.ftc.gov/sites/default/files/documents/advocacy_documents/ftc-staff-comment-north-carolina-state-goals-and-policy-board-concerning-certificate-need-regulation/v890028.pdf

³⁸ CON regulations are state laws that require establishment of a proven need for any new health care facility. So, any existing hospital that intends to expand its capacity by increasing number of beds, or any new proposed hospital must first prove an unmet medical need in its geographical region. In order to contain rising health care costs and oversupply of health care services, CON laws were enacted as part of the Health Planning Resources Development Act of 1974. <http://www.ncsl.org/research/health/con-certificate-of-need-state-laws.aspx>

2.2.1 Rise of Physician-Owned Hospitals

According to Perry (2012), POHs grew in numbers due to several reasons. They include responses to the loss of physician autonomy and professional authority over recommending best medical practices. The organizing values of hospitals may conflict with professional norms, thereby creating a dissatisfactory working environment for physicians (Gray, 1986). Greater hospital investment in hiring professional administrators took governing agency further away from physicians. Reduced physician income per surgery and hospitals giving lower shares of Medicare reimbursements to referring physicians added to physicians' frustrations with the hospitals (Welle-Powell, 2009; Perry, 2012, p. 388; Pham, Devers, May, & Berenson, 2004; Choudhary, Choudhary, & Brennan, 2005). In POHs, because of their financial investments and ownership stake, physician owners had greater "*physician-system integration*" (Scott et al., 2000, p. 291), i.e., "the extent to which physicians are economically linked to a system; use its facilities and services; and actively participate in its planning, management and governance" (Gillies, Shortell, Anderson, Mitchell, & Morgan, 1993, p. 469).³⁹ With greater integration between physicians, hospitals and hospital networks, many expected that the quality of care would improve as well: POHs should have higher quality care compared to other hospitals.

2.2.2 Physician-Owned Hospitals and Quality of Care

Scholars like Professor Regina Herzlinger of Harvard Business School, whom *Money Magazine* referred as the "godmother" of market and consumer driven health care systems, maintains that not-for-profit and community hospitals "killed" health care in the U.S. (2007). She staunchly supports repeal of regulations on for-profit POHs that prevent competition among

³⁹ Although individual physicians on average own approximately 2% of a POH, collectively physician ownership averages more than 50 %.(<https://www.gao.gov/assets/100/91815.pdf>).

hospitals. Herzlinger argues that “regulatory straightjackets” (Herzlinger, 2004, p. 2378) bind entrepreneurial specialist physicians.

National legislation like the ACA also evidently has had an impact. Nine POHs opened in Texas after passage of the ACA (i.e., after 2010), but they could not accept Medicare reimbursements. Largely because of the Medicare restrictions ACA imposed, all nine of these POHs eventually ceased operations, with some filing for bankruptcy and the rest being sold to more established hospitals.⁴⁰

Herzlinger suggested a three-way solution to manage costs and improve quality: simultaneously empowering prospective patients by first increasing their awareness of the value of care (cost) so that they know “what they are buying”; creating “a market of competitive suppliers – physicians and other providers – who know what they are doing”; and removing excess regulations (2004, p. 2378). For Herzlinger, physician investors “represent the best hope for a higher-quality and higher-productivity healthcare system” that not only “reduces costs”, but simultaneously provides owner physicians “an important additional incentive . . . to provide the best value for money” (2004, p. 2376). Casalino et al. (2003) also noted the potential of POHs to reduce costs and improve quality.

Yet, available evidence does not fully support Herzlinger’s arguments. The medPAC report found, for instance, that physician-owned hospitals have higher costs than other hospitals. A 2003 report by the U.S. General Accountability Office (GAO) found a more homogeneous patient mix in 21 of the 25 physician-owned specialty hospitals surveyed compared to other general full-service hospitals that had more diverse sets of patients.⁴¹

⁴⁰ <https://www.beckershospitalreview.com/hospital-physician-relationships/10-things-to-know-about-physician-owned-hospitals.html>

⁴¹ <https://www.gao.gov/assets/100/91815.pdf>

Meanwhile, for-profit hospitals more generally provide medical care that is costlier than that provided by not-for-profit hospitals (Woolhandler & Himmelstein, 1997; Devereaux and colleagues, 2002, 2004; Woolhandler & Himmelstein, 2004). Costlier health care in for-profit hospitals may indicate that they are contributing to rising health care expenditures, rather than meeting cost containment targets. Yet, according to Herzlinger (2004, p. 2377), a key reason for the high profits of cardiac and orthopedic care specialty hospitals is that “insurance and government bureaucrats” have insulated themselves from market forces and set generous reimbursement rates for these specialty services on their own (Perry, 2012, p. 380). Her arguments, however, may overlook or mask values and motivations that investing physicians or other private investors hold beyond professional and free-market orientations; she assumes that there would be no opportunism by investing physicians or patients. Operational and regulatory challenges aside, multiple concerns remain regarding the impact of POHs on quality of care in general service hospitals, conflict of interest due to profit motive of physicians, and rising costs of care. The next section describes lawmakers’ worries about POHs.

2.2.3 Physician-Owned Hospitals and Quality Concerns

Patients rank POHs as top rated hospitals in most of the states in which they operate (Perry, 2010). Yet some research suggests that POHs increase overall costs in the health care system because of higher utilization of services, which negatively impacts efforts to balance access, cost and quality (Perry, 2012; Mick & Shay, 2014). Due to the frequently contradictory nature of these goals of health policy, policymakers typically can address only two of the three at any given time, leaving the third difficult to achieve (Sultz & Young, 2006, p. 30). Meanwhile, higher profits might motivate POHs to offer more profitable services (like cardiac and orthopedic

surgeries) and to “cherry pick” patients (Plummer & Wempe, 2016; Blumenthal et al., 2015; Perry, 2012, p. 389; Gabel, Fahlman, Kang, Wozniak, Kletke, & Hay, 2008). By one estimate, the largest source of revenues (almost 42%) for POHs is the number of surgeries they perform in outpatient settings. The average adjusted expenses and revenues per patient day are higher in POHs than in non-POHs.⁴²

Cost and Quality Concerns: Physician ownership of hospitals has been an ongoing concern of government agencies and lawmakers as they struggle with balancing access, costs, and quality in health care.⁴³ A Medicare Payment Advisory Commission (medPAC)⁴⁴ report found specialty POHs limited access to care to less risky patients, while over utilizing more profitable services and claiming Medicare reimbursements. Although a 2005 CMS report⁴⁵ found no clear patterns in physician referrals, it did discover substantial physician referrals to hospitals that physicians had financial interests in. These findings support the claim that POHs might be “cherry picking” (Perry, 2012, p. 388, Swanson, 2013) profitable, healthier and wealthier patients and leaving riskier patients for other hospitals (Blumenthal et al., 2015). Meanwhile, a 2016 study by Avalon Health Economics projected that POHs would save approximately \$3.2 billion in Medicare costs over ten years because POHs receive lower Medicare reimbursements than other full service hospitals for similar services.⁴⁶

⁴² Average adjusted expenses and revenues per patient-day in POHs are approximately \$2,307 and \$2,710; compared to \$1,424 and \$1,201 in non-POHs. (<https://www.beckershospitalreview.com/hospital-physician-relationships/10-things-to-know-about-physician-owned-hospitals.html>)

⁴³ https://www.law.uh.edu/hjhlp/volumes/Vol_6_1/Heard.pdf

⁴⁴ <https://asipp.org/documents/PhysicianOwnedSpecialtyHospitals.pdf>;

⁴⁵ <https://www.cms.gov/Medicare/Fraud-and-Abuse/PhysicianSelfReferral/Downloads/RTC-StudyofPhysOwnedSpecHosp.pdf>

⁴⁶ <https://waysandmeans.house.gov/wp-content/uploads/2016/10/20160907HL-SFRs.pdf>;

<http://www.physicianhospitals.org/news/345640/Senator-James-Lankford-R-OK-Introduces-Bill-to-Improve-Access-to-Physician-Owned-Hospitals.htm>;

<http://waysandmeans.house.gov/wp-content/uploads/2016/08/20150519HL-SFR-Johnson-PHA-Summary-Value-Manuscript-.pdf>.

Yet if cream skimming practices are widely present in POHs, they might negatively affect bottom-lines as well as the general quality of care in other full service hospitals (Perry, 2012, p. 389). A possible example is the Heart Hospital of New Mexico, a joint venture between a group of local cardiologists and MedCath Inc.⁴⁷, and the full service Presbyterian Hospital in Albuquerque. The Heart Hospital was considered “a destabilizing threat by . . . administrators and physicians” of the Presbyterian Hospital of New Mexico, as sicker and more complex cases that needed urgent care and more time to recuperate were left to Presbyterian Hospital (Perry, 2012, p. 390). A similar situation involved physician-owned Galichia Heart Hospital and full-service Wesley Medical Center in Wichita, Kansas. Within two years, the physician-owned hospital that opened in 2001 contributed to the reduction of revenues at Wesley Hospital from almost \$16 million to \$2 million. Wesley Hospital’s neurosurgery revenues also declined by more than 90% within one year after the Kansas Spine Hospital, another physician-owned hospital, opened in 2003 (Perry, 2012)⁴⁸.

In addition to broader systemic costs generated by physician-owned hospitals, some have questioned the quality of patient care at physician-owned hospitals. Reverend Wilson’s testimony, included in a report on physician-owned specialty hospitals, submitted at a hearing before the U.S. Senate Committee on Finance, stated: “when doctors own the hospital and operate it to their benefit, when the dollar is the bottom line, then patients are not going to be well served. My mother is an example of what can happen when there is no oversight, no one looking over the doctors’ shoulders.”⁴⁹ Wilson’s mother, 88-year old Helen Wilson, died after a

⁴⁷ MedCath Inc. was a publicly traded health management company specializing in operation of cardiovascular clinics across the U.S., it dissolved its assets in 2011 due to financial losses.

⁴⁸ <http://content.time.com/time/magazine/article/0,9171,1565524,00.html>

⁴⁹ <https://www.finance.senate.gov/imo/media/doc/35439.pdf>

two-hour surgery due to apparent negligence. Dr. Mark Metzger⁵⁰ chose to perform surgery in his hospital, the Physicians' Hospital in Portland, Oregon, instead of at the full-service Portland Adventist Hospital, which had adequate emergency facilities, and where Dr. Metzger was licensed to practice (Perry, 2012, p. 394). "A few tragic and unnecessary deaths suggest a possible proliferation of grave patient safety issues throughout the physician-owned specialty hospital industry" (Perry, 2012, p. 395).

Although medical errors are a leading cause of preventable deaths in hospitals generally (Kohn, Corrigan, & Donaldson, 2000), it is not yet clear "to government officials how extensive these threats to patient well-being might be" (p. 396). It is possible that the Institute of Medicine "may have substantially underestimated the magnitude of the problem" of medical errors (Leape & Berwick, 2005). POHs may not have adequate capacity to handle emergency cases. A 2008 HHS Office of Inspector General report found emergency services in about 55% of POHs; of these hospitals, more than half had only one emergency bed. Some POHs also were found to have violated the mandatory Conditions of Participation (CoP), which CMS requires to participate in the Medicare program. These standards mandate that POHs have adequate capacity for providing emergency services; yet 66% of the 109 hospitals that the OIG reviewed relied primarily on 9-1-1 emergency services, another violation of CoP.⁵¹ Despite the presence of emergency departments in POHs, on average they have fewer patient visits.⁵² The OIG findings may have contributed to negative perceptions of POHs among lawmakers and attracted greater CMS scrutiny (Perry, 2012).

⁵⁰ <http://www.wweek.com/portland/article-4938-doctors-inc.html>

⁵¹ <https://oig.hhs.gov/oei/reports/oei-02-06-00310.pdf>

⁵² <https://www.beckershospitalreview.com/hospital-physician-relationships/10-things-to-know-about-physician-owned-hospitals.html>

Patient Referrals: Concern about possible economic and ethical challenges associated with the financial incentives surrounding health care delivery has led Congress to act multiple times. First, in order to reduce unnecessary testing and to prohibit physicians with financial interests in any medical facility from making self-referrals to bill Medicare, other individuals or third-party payers, Congress passed the Ethics in Patient Referrals Act, sponsored by Democratic Congressman Pete Stark (CA) in 1989 (42 USC § 1395nn).^{53, 54} The original purposes of the statute were to curb physician self-referrals, to pay only fair-market prices for designated health services (DHS), and to contain the rising costs of federal health programs. Over time, expansion of the DHS list led to more complex regulations, which some believe negatively affected the general quality of care.⁵⁵ Due to payment-related constraints and penalties for violating referral clauses, the statute might have delayed the transition to a value-based, fee-for-performance system.⁵⁶ A report on the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), submitted by the Department of Health and Human Services to Congress in 2015, stated that “the fraud and abuse laws may serve as an impediment to robust, innovative programs that align providers by using financial incentives to achieve quality standards, generate cost savings, and reduce waste.”⁵⁷ In the name of reforming value-based care models, and related to the broader efforts of the Trump administration to repeal the ACA, Senator Orrin Hatch (R-Utah) expressed similar concerns that regulations imposed by the Ethics in Referral statute slowed or stopped adoption of value-based quality care models.^{58, 59}

⁵³ <http://www.massmed.org/physicians/legal-and-regulatory/making-sense-of-the-stark-law--compliance-for-the-medical-practice-%28pdf%29/>

⁵⁴ <https://www.beckershospitalreview.com/legal-regulatory-issues/the-stark-act-30-things-to-know.html>

⁵⁵ <https://www.cms.gov/Medicare/Fraud-and-Abuse/PhysicianSelfReferral/index.html>

⁵⁶ <https://www.beckershospitalreview.com/legal-regulatory-issues/15-things-to-know-about-stark-law-021717.html>

⁵⁷ <https://www.cms.gov/Medicare/Fraud-and-Abuse/PhysicianSelfReferral/Downloads/Report-to-Congress-2015.pdf>

⁵⁸ Health practitioners, however, differ on how to amend the Ethics in Patient Referrals Act. Some physicians like the CEO of Asheville, N.C.-based Mission Health, Ronald Paulus, advocate for even stronger ties between physicians and health systems, and believe only a total repeal of the law is the way to achieve value-based care

Section 6001 and legal challenges: In 2010, PHA and the Texas Spine & Joint Hospital (also known as the Texas Hospital) challenged the constitutionality of Section 6001 of the ACA in the U.S. District Court for the Eastern District of Texas.⁶⁰ The plaintiffs argued that the ACA’s sanctions against POHs were based on poor evidence in the medPAC and CMS reports that Congress relied on; “section 6001 was enacted merely to provide a competitive business advantage to general and full-service hospitals” (Perry, 2012, p. 405). In response, the U.S. Department of Health and Human Services argued for the rational basis of section 6001 on four grounds: the correlation between physician investments in health care facilities and overutilization of services, higher Medicare expenditures as a result of physician self-referrals, physician-owned hospitals not providing uncompensated care that other hospitals do, and POHs’ lack of adequate emergency care services (cited in Perry, 2012, p. 405).

In its ruling, the Court “noted the fact that physician-owned specialty hospitals are not economically viable without the ability to bill Medicare for self-referrals, yet concluded that the loss of the ability to bill Medicare for self-referred patients does not constitute an impermissible taking” (Perry, 2012, p. 406). Because section 6001 does not prohibit POHs from expanding or getting Medicare reimbursements for referrals made by non-owner physicians, the Court rejected the plaintiffs’ claims; because hospital participation in Medicare is voluntary, the federal government retained the authority to make amendments to Medicare reimbursement-related provisions. The Court noted as well that the restrictions against POHs in section 6001 were

(<https://www.beckershospitalreview.com/legal-regulatory-issues/johns-hopkins-mission-health-urge-lawmakers-to-modernize-or-repeal-stark-law.html>). On the other hand, the counsel of The Johns Hopkins Health System in Baltimore suggests that imposing more reasonable penalties might allow innovative payment systems to reduce conflict between provisions of the law and value-based care (<https://www.beckershospitalreview.com/legal-regulatory-issues/johns-hopkins-mission-health-urge-lawmakers-to-modernize-or-repeal-stark-law.html>)

⁵⁹<https://www.finance.senate.gov/imo/media/doc/Stark%20White%20Paper,%20SFC%20Majority%20Staff.pdf>.

⁶⁰ <https://www.law.uh.edu/healthlaw/perspectives/2011/GreenStark.pdf>

“almost enacted” by the Congress in 2007 and 2008 before the ACA was instituted (Perry, 2012, pp. 406-407).

After the decision, the PHA has focused its efforts on lobbying Congress to repeal section 6001. Through Representative Sam Johnson (R-TX)⁶¹ and Senator James Lankford (R-OK),⁶² the PHA succeeded in having bills introduced in both chambers of Congress to repeal section 6001. Although the bills did not pass, CMS administrator Seema Verma (who took over from Andy Slavitt in March 2017) has noted that consumer driven health care was here to stay.⁶³ This potentially means that the POH⁶⁴ organizational form will survive as well and continue to compete with more established corporate-owned and not-for-profit hospitals.

2.3 OTHER FACTORS AFFECTING QUALITY OF CARE

2.3.1 The ACA and Quality Sanctions

The ACA mandated that value-based programs link hospital reimbursements to the quality of care that hospitals provide. It introduced a regime of quality sanctions linked to patient mix, hospital acquired infections, and readmissions. For example, section 3001(a) of the ACA lays out a Hospital Value-Based Purchasing Program; section 3008, a Hospital Acquired Condition Reduction Program;⁶⁵ and section 3025, a Hospital Readmission Reduction Program. Each is briefly discussed below (see Figure 2.1).

⁶¹ <http://www.physicianhospitals.org/news/331510/Representative-Sam-Johnson-R-TX-Introduces-Bill-to-Repeal-Ban-on-Physician-Owned-Hospitals.htm>

⁶² <https://www.prnewswire.com/news-releases/senator-james-lankford-r-ok-introduces-bill-to-improve-access-to-physician-owned-hospitals--healthcare-stakeholders-express-support-300459070.html>;
<https://samjohnson.house.gov/news/documentsingle.aspx?DocumentID=334493>.

⁶³ <https://www.cnbc.com/2018/04/30/cms-verma-says-its-time-health-care-caught-up-to-other-industries.html>

⁶⁴ <https://www.lexology.com/library/detail.aspx?g=e0d1c411-6b56-47de-a5bb-51f482e9c2b4>

⁶⁵ <https://www.hhs.gov/sites/default/files/ppacon.pdf>

Section 3001 (a) - Hospital Value-Based Purchasing Program (HVBP)

The VBP program rewards acute care hospitals in the U.S. with incentive-based payments. Payments are made to hospitals through an inpatient prospective payment system (IPPS) according to classification of patient conditions per diagnosis-related group (DRG). Hospitals that treat more low-income patients, teaching hospitals, and those that treat more complicated cases, receive additional payment above the DRG base rate. For example, if a low-income patient with higher comorbidities is treated in a not-for-profit hospital affiliated with a university, the hospital will receive a higher payment compared with another hospital that does not have a teaching affiliation. If not-for-profits usually treat more complicated cases, they may be at an advantage compared to specialty hospitals or hospitals that limit access to care.⁶⁶

Section 3008 - Hospital Acquired Condition Reduction Program (HACRP)

The HACRP imposes a penalty of up to 1% of Medicare reimbursements for hospitals with higher than average infection rates.⁶⁷ Of the 769 hospitals penalized in 2017, 241 were penalized for three consecutive years.⁶⁸ Hospitals are assessed for blood stream infections, surgical site infections, urinary tract infections, MRSA and C. Diff.⁶⁹ Infection rates for hospital acquired conditions have generally declined, according to AHRQ estimates,⁷⁰ but C. Diff bacteria have become resistant to antibiotics. Insurance data show increases in general C. Diff

⁶⁶ <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/index.html>
<https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/HVBP/Hospital-Value-Based-Purchasing.html>

⁶⁷ <https://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>

⁶⁸ <https://khn.org/news/latest-hospital-injury-penalties-include-crackdown-on-antibiotic-resistant-germs/>

⁶⁹ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/HAC/Hospital-Acquired-Conditions.html>

⁷⁰ Agency for Healthcare Research and Quality's (AHRQ) National Scorecard Estimates show a decline of HACs by more than 21% or 3 million less cases in 2010-2015 https://www.ahrq.gov/professionals/quality-patient-safety/pfp/2015-interim.html?utm_source=AHRQ&utm_medium=PR&utm_term=&utm_content=6&utm_campaign=AHRQ_NSOH_AC_2016

infections (43%) as well as recurring infections (189%) since 2001 (Ma, Brensinger, Wu, & Lewis, 2017).⁷¹ The Centers for Disease Control and Prevention (CDC) considers that threats due to invasive MRSA infections remain severe to inpatients.⁷²

Section 3025 - Hospital Readmissions Reduction Program (HRRP)

The HRRP⁷³ levies a penalty of up to 3% of Medicare payments on hospitals with “excess” 30-day readmissions. In 2018, as in 2017, CMS estimates that approximately 50% of all U.S. hospitals will be penalized.⁷⁴ Desai, Ross, Kwon, Herrin, Dharmarajan, Bernheim, Krumholz, & Horwitz (2016) found lower readmission rates in hospitals that had been penalized under HRRP in the previous year. PHA claims that 49% of POHs received no penalties from 2013 through 2015. From 2007 through 2015, 30-day readmission rates have generally declined from 21.5% to 17.8% (Zuckerman, Sheingold, Orav, Ruhter, & Epstein, 2016).⁷⁵

⁷¹ Older females with previous exposures to antibiotics, corticosteroids or proton-pump inhibitors have a higher risk of acquiring C. Diff infections (Ma et al., 2017).

⁷² <https://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf#page=77>

⁷³ <https://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>

⁷⁴ <https://www.advisory.com/daily-briefing/2017/08/07/hospital-penalties>; <https://khn.org/news/under-trump-hospitals-face-same-penalties-embraced-by-obama/>

⁷⁵ These 30-Day readmission rates are for six conditions that CMS uses collectively to assess penalties. The six conditions are AMI, Heart Failure, Pneumonia, COPD, CABG, and hip and knee replacements. Besides the listed quality sanctions, the CMS runs several other value-based programs like Physician Value-Based Modifier Program that was part of original programs, and End-Stage Renal Disease Quality Initiative Program, Skilled Nursing Facility Value-Based Program, and Home Health Value Based Program (<https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs.html>).

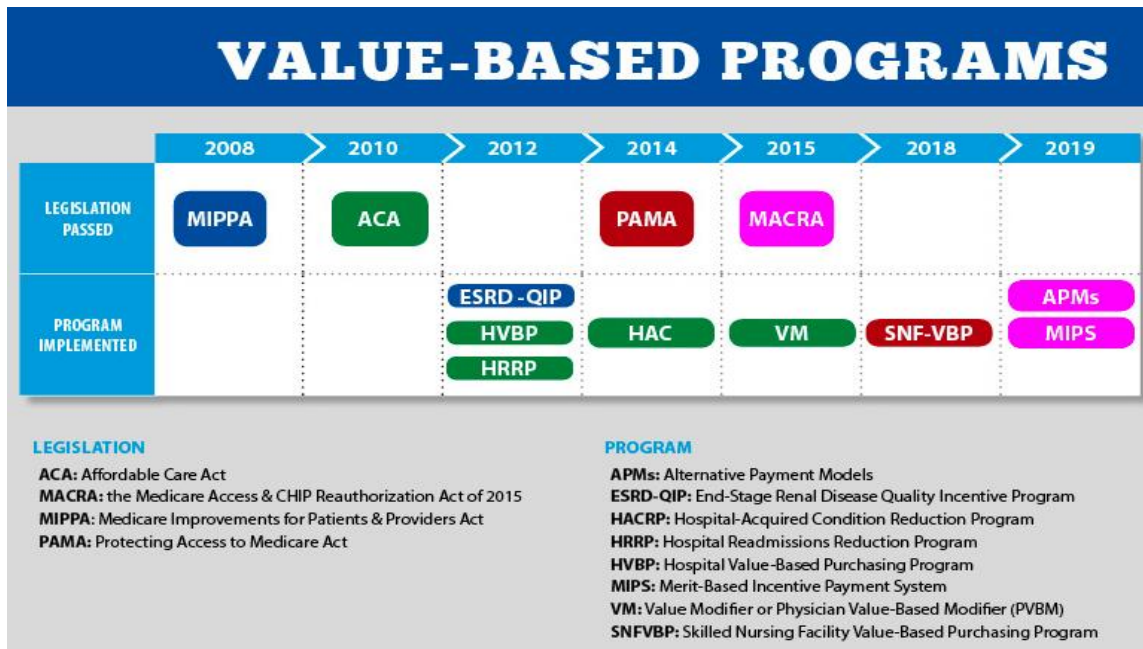


Figure 2.1: Value-based programs initiated after passage of the ACA

Source: <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs.html>

2.3.2 Information Asymmetry

Access, cost, and quality of care may be key structural challenges confronting the health care sector in the U.S., but they are not the only problems (Mick & Shay, 2014). An additional concern is the general lack of public awareness about health, health care, and health care delivery. The “public’s inadequate understanding of health care and its delivery system” not only affects their perceptions of quality but “the lack of public knowledge has allowed much care to be delivered that was less than beneficial and some that was inherently dangerous” (Sultz & Young, 2006, p. 3). Inadequate public knowledge about health systems may have high costs for both existing and prospective patients. The consequences of incorrect health-related decisions, inaccurate assessments, and improper choices may not be limited to patients or their immediate families; the general community and society also pay such costs. According to Bai & Anderson (2015, p. 4), when choosing among potential hospitals for treatment, patients generally face great

information asymmetries and are unable to compare quality of care and reported patient satisfaction. They opine, “Knowing all of the relevant information about the hospital without knowing the price and quality of physician services is like purchasing a suit and only knowing the price of the pants” (p. 4).

2.3.3 Variation in Medical Practices and Quality Uncertainties

Variations in practices: Balancing access, cost, and quality may be broader concerns in the health care system in the U.S., but variations also exist within each area. For example, there are wide variations in the “appropriateness of many diagnostic and therapeutic procedures”, and inaccurate diagnoses potentially also “impact heavily on costs” (Sultz & Young, 2006, p. 31).

According to the GAO Unsustainable Trends report (2004), in high spending areas some overutilization (i.e., higher supply and consumption) of medical services is not associated with better patient experiences, higher patient satisfaction or better health outcomes (cf. Wennberg and colleagues, 1999; Wennberg & Wennberg, 2003). The GAO report also found evidence suggesting wide variation in medical practices in the entire nation. Unexplained and unwarranted variations imply general challenges related to quality and efficiency challenges in the U.S. health care system (GAO Unsustainable Trends, 2004, p. 10)⁷⁶.

Quality uncertainty: The 2004 GAO report pointed out that the primary difficulty of implementing effective care practices that are associated with quality care is that relatively little is known about such causal relations between care practices and patient outcomes in the first place. Among the known practices, many are not supported by “rigorous evidence”, with even

⁷⁶ <https://www.gao.gov/new.items/d04793sp.pdf>. At the same time, According to the Institute of Medicine, an average of 44,000 to 98,000 lives is lost each year because of medical errors.⁷⁶ The National Quality Forum (2001) noted medical errors are a leading cause of preventable deaths in the U.S. generally; in acute care hospitals medical errors “are between the fifth and eighth leading causes of all deaths in the United States” (Sultz & Young, 2006, p. 31).

more limited knowledge about the effect of these practices on overall cost of care (GAO Unsustainable Trends, 2004, p. 17). Moreover, “the uncertainty that pervades current clinical practice is far greater than most people realize” (Sultz & Young, 2006, p. 31). The consistency and appropriateness of care patients receive are questionable as well because they do not “receive the most effective care known” at least 50% of the time (GAO, 2004, p. 17). Meanwhile, the severity of patient conditions, number of comorbidities, and overutilization of services generally are also responsible for rising costs of care (Wennberg and colleagues, 1999; Wennberg & Wennberg, 2003). Because of “high uncertainty surrounding the provision of medical care, referred outcomes cannot be guaranteed and quality of care received is difficult to assess, particularly by consumers” (Scott et al., 2000, p. 6). “Uncertainty as to the quality of the product is perhaps more intense here [in healthcare] than in any other important commodity” (Arrow, 1963, p. 951).⁷⁷

2.4 CMS QUALITY STRATEGY

To reduce uncertainties and address other concerns about the quality of medical care, CMS introduced a Quality Strategy with a broader aim of improving overall health care quality in the U.S. CMS’s Quality Strategy (2013⁷⁸ and 2016⁷⁹) seeks to build a system of health care

⁷⁷ According to Scott et al. (2000), economists have recognized the difficulties associated with quality assessments by consumers and argue that the distinctive characteristics of health care conflict with conventional economic assumptions and “impede the efficiency of market operations” and profoundly “affect market transactions” (p. 125). In a market-driven era when consumers collectively are a key strategic constituency, their perceptions are a key factor in assessments of the quality of product or service provided by an organization (Heskett, Sasser, & Hart, 1990). Aggregate consumer perceptions indicate an inter-subjective reality that might not always be congruent with the substantive nature of the product or service they consumed. Physicians acting as intermediate agents decide the amount and kind of care patients receive, without much consideration for patients’ needs, preferences and choices (Fuchs, 1974; Rossiter & Wilensky, 1983). Additionally, services provided by monopoly providers might be inadequate and consumers may not have a way to get around them (Feldstein, 1971; Kessel, 1970). This might be a clear violation of demand and supply argument because providers affect both the demand and the supply sides.

⁷⁸ “CMS quality strategy 2013 – Beyond” - Retrieved from <https://www.ahrq.gov/sites/default/files/wysiwyg/workingforquality/cms-quality-strategy.pdf>

delivery in the U.S. that is “better, smarter and healthier.” (See Figure 2.2.) The overall strategy aims at simultaneously improving quality of care, containing costs of care and building healthier communities.⁸⁰ According to the latest CMS projections, looking from 2017 through 2026, total health care spending will rise to around \$5.7 trillion by 2026, equivalent to 19.7% of the GDP. The average rate of growth in health care spending is projected to be around 5.5%, lower than the 7.3% observed from 1990 through 2007. Despite rising expenditures, the issue of quality in health care still remains unsettled. Paying for care also is challenging. The total insured population is expected to decline to 89.3% in 2026, lower than the 91.1% in 2017.⁸¹

Three Aims	Six Priorities
<ol style="list-style-type: none"> 1. Better Care: Improve the overall quality of care by making healthcare more person-centered, reliable, accessible, and safe. 2. Healthier People, Healthier Communities: Improve the health of Americans by supporting proven interventions to address behavioral, social, and environmental determinants of health, and deliver higher-quality care. 3. Smarter Spending: Reduce the cost of quality healthcare for individuals, families, employers, government, and communities. 	<ol style="list-style-type: none"> 1. Make Care Safer by Reducing Harm Caused in the Delivery of Care 2. Strengthen Person and Family Engagement as Partners in Their Care 3. Promote Effective Communication and Coordination of Care 4. Promote Effective Prevention and Treatment of Chronic Disease 5. Work with Communities to Promote Best Practices of Healthy Living 6. Make Care Affordable

Figure 2.2: Aims and priorities of the CMS Quality Strategy

Source: <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/Downloads/CMS-Quality-Strategy-Overview.pdf>

The Quality Strategy is based on the National Quality Strategy (2011) initiative of AHRQ and HHS.⁸² Earlier quality initiatives of CMS and HHS, launched in 2001, focused on improving accountability in the U.S. healthcare system through public reporting of quality measures for

⁷⁹ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/Downloads/CMS-Quality-Strategy.pdf>

⁸⁰ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/Legacy-Quality-Strategy.html>

⁸¹ <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/ForecastSummary.pdf>

⁸² <https://www.ahrq.gov/workingforquality/about/index.html>

hospitals, nursing homes and other medical care facilities.⁸³ As part of the Medicare Modernization Act of 2003, the Hospital Inpatient Quality Reporting Program (IQR) also developed to improve consumer awareness and to encourage hospitals to improve quality of care through assembling and analyzing data.⁸⁴

2.5 QUALITY OF CARE IN CONSUMER MARKETS

With the rise of market-based health care services, quality in health care was redefined through a focus on consumers. Earlier health care delivery and payment models, especially before implementation of the ACA, were mostly limited to pay-for-service and did not explicitly consider effects of medical care, either on patient perceptions or on clinical outcomes. In addition, differences in values and ideologies among policymakers further complicate the health care dialogue in the United States. Variations in hospital performance due to ownership⁸⁵ (Donabedian, 1980; Scott et al., 2000) and to the U.S. health care system's complicated relationships with consumers and the federal government affect the meanings of quality care (Sultz & Young, 2006, p. 2).

In market-oriented services industries, consumer perceptions can be employed to measure their satisfaction with the services they consume; these expressions are then used as indicators of service “quality” (Heskett et al., 1990). In health care in the United States, especially after the implementation of the ACA, assessments of quality care frequently are based on patients' perceptions of the quality of their inpatient hospital stays and their inpatient care. The Hospital

⁸³ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/index.html>

⁸⁴ <https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138115987129>

⁸⁵ Chapter 3 details Donabedian's SPO model, which highlights the possible significance of hospital ownership for quality of care.

Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient satisfaction surveys capture these perceptions. Typically, the survey findings are supplemented by more objective measures of patient health outcomes.

Medicare reimbursements for all hospitals are linked to their performance both on the HCAHPS patient satisfaction surveys and on patient outcomes. Hospitals now pay special attention to factors that could influence patient perceptions of the quality of inpatient care, which include both factors related to providers' (doctors and nurses) communication quality and those associated with the aesthetics of inpatient stays (e.g., cleanliness, hospital ambience). In an era of consumer perception-linked quality of care, it is possible patients could rank a hospital higher on overall quality of care if it provides a relatively better inpatient experience and yet not have better patient outcomes. Similarly, a hospital might have better patient outcomes but provide a relatively poorer inpatient experience. Such potentialities not only affect patients' judgments about quality of care, but also may have important policy implications and influence prospective patients' decisions about choosing hospitals. In addition to hospital level factors, more general features like legal mandates for quality improvement created by the ACA, information asymmetries, and lack of public awareness about variations in medical practices may further affect quality of care.

2.6 CONCLUSION

Despite the emergence of newer organizational hospital forms with novel ownership structures like ambulatory surgical centers and retail clinics, nonprofit hospitals outnumber for-profit hospitals and continue to “remain the dominant type” of hospitals in the U.S. Even so, nonprofits may have “commercial” identities similar to for-profit hospitals (Hansmann, 1987;

AHA Fast Facts, 2018⁸⁶). Like for-profit hospitals, the sale of medical services is the primary source of income for nonprofit hospitals, which no longer depend on donations alone (Scott et al., 2000, p. 61).

Although there may not be much difference in business strategies between for-profit and not-for-profit hospitals (Fennell & Alexander, 1993), the former increasingly challenge the latter in a market-oriented competitive environment (Ryan, 1999). “It is conventional wisdom that higher competition pushes a service provider to improve the quality of its service” (Jindal et al., 2018, p. 59). In addition, from a market perspective, if there is not much difference in the business strategies of hospitals, their patient satisfaction levels and clinical outcomes should not vary much. That is, if market logic applies equally to the quality of care offered by all types of hospital, all should deliver almost similar results in patient perceptions and clinical outcomes.

POHs, however, are more controversial because of potential risks related to overutilization of services, lowering of quality and declining revenues in competing general service hospitals; some also believe POHs have the potential to become “focused factories” (Casalino et al., 2003, p. 56). In this view, hospital ownership likely affects hospital practices that in turn may affect patient outcomes.

Less is known about how POHs compare with more established hospital forms like corporate-owned and not-for-profit hospitals. The next chapter introduces a conceptual framework based on market logic and hospital ownership to explore possible variations in quality care among for-profit and not-for-profit hospitals in the U.S.

⁸⁶ <https://www.aha.org/statistics/fast-facts-us-hospitals>

CHAPTER 3: CONCEPTUAL FRAMEWORK

This chapter introduces the conceptual framework that will be used to compare the quality of patient-centric care in POHs, corporate-owned hospitals, and not-for-profit hospitals. The chapter first briefly situates patient satisfaction in the context of the ACA and market-based approaches. Next, the chapter discusses the potential significance of provider-patient relationships for quality of care generally and for patient satisfaction specifically. The discussion then turns to Donabedian's SPO model, which informs the conceptual framework. The chapter concludes with that framework, which is based on a market-based theory of health care delivery and quality care.

3.1 THE ACA AND PATIENT SATISFACTION

According to Berkowitz (2016), the ACA, with its focus on patients as consumers and on quality, has stimulated attention to patient experience. The CMS Quality Strategy (2013 and 2016) also focuses on increasing patient engagement through effective communication and coordination of care so as to improve quality of care generally in the U.S. According to Berkowitz (2016), the Quality Strategy creates multiple opportunities for providers, patients and their families to become more engaged with the process of inpatient care. Arguably, by design it brings "experience of care into the quality equation" (Berkowitz, 2016). The quality of provider communication quality, timeliness of care, courteous staff, medication education, and efficient use of patient resources are some of the key mechanisms identified to improve patient experience (CMS, 2015).⁸⁷

Because of policy changes, market orientation, or possibly also because of different notions of value-based care, the U.S. health care sector is becoming more experiential in nature.

⁸⁷ CMS Center for Medicare. (2015). *CAHPS survey for accountable care organizations Participating in Medicare initiatives*. Retrieved from <http://acocahps.cms.gov/Content/Default.aspx>

For example, POHs might claim better patient experience as a hallmark of their medical care and often cite top HCAHPS ratings as supporting evidence. A study of “chief patient experience officers” in 416 hospitals suggested patient experience is negatively affected by disconnects between hospital management and providers (Manary, Staelin, Kosel, Schulman, & Glickman, 2014). In such cases, there may be higher likelihood of harm to patients in the form of more complications, readmissions or mortality. According to this study, lower patient satisfaction may indicate an organizational culture that does not support provision of a quality patient experience. In POHs, hospital management arguably is more attentive to patients and their treatments, which might create more satisfied patients (Casalino et al., 2003). It is possible that other hospitals may not have comparable quality related practices. If so, patient satisfaction should be lower in all other hospitals.

That said, Tsai, Orav, & Jha (2015) argue that quality patient experience does not necessarily indicate quality clinical outcomes. Price, Elliott, Cleary, Zaslavsky, & Hays (2014) provide a list of criticisms associated with measurement of patient experiences. The criticisms include subjective measures of patient satisfaction, consumers’ lack of quality evaluation experience, low survey response rates, and fear of bias (patients’ perceptions of experience could be modified using customized techniques such as priming). Measuring patient experiences might shift the providers’ focus to simply meeting patients’ desires; that is, there may be a tradeoff between quality experience and quality clinical outcomes. Nonetheless, Price et al. (2014) argue that measuring patient experiences is critical and using a standard instrument like the HCAHPS survey at least might improve reliability in measuring patient experiences.

Prior to the passage of the ACA, the Institute for Healthcare Improvement (IHI) developed a “Triple Aim” framework to simultaneously improve population health, lower cost

and improve patient experience. The goals of value-based care proposed under the ACA are similar.⁸⁸ IHI proposed using mortality rates as a measure of population health and measuring patient experience of care with an instrument like the HCAHPS survey.⁸⁹ IHI also proposed an approach to improve the system level quality of care through defining quality from an individual's perspective.⁹⁰ According to Berwick, Nolan, and Whittington (2008), the triple aims of the IHI framework are interdependent, and they must be ethically and simultaneously balanced to achieve desirable outcomes and to improve the general state of quality care. Lewis, Kirkham, Duncan, & Vaithianathan (2011) provide evidence that clinical failures (like unplanned 30-day readmissions, invasive treatment, and poor patient safety) negatively affect quality, patient experience and cost of care. Poor clinical outcomes would invert the Triple Aims (IHI) to "Triple Fail". In the quality domain of the Triple Aim approach, they argue, unplanned readmissions indicate higher complications, premature discharge, and poor coordination.

Patient satisfaction also reflects other factors (Jacobs, 2016). Kupfer & Bond (2012) argue patient satisfaction is correlated with service quality, but patients' preferences and expectations are subjective and moderated by their culture, environment and relationships. Older patients report higher satisfaction than younger patients (Jackson, Chamberlin, & Kroenke, 2001; Williams, 1994; Hall & Dornan, 1990), but other patient characteristics like sex and race are not important factors in satisfaction judgments (Zastowny, Roghman, & Hengst, 1983; Marple, Lucey, Kroenke, Wilder, & Lucas, 1997). Nieman, Benke, & Boss (2015) found similar results in pediatric surgical care. They found "patient age, sex, race/ethnicity, insurance type, neighborhood SES, neighborhood diversity, or surgical department did not significantly

⁸⁸ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs.html>

⁸⁹ <http://www.ihl.org/Engage/Initiatives/TripleAim/Documents/ConceptDesign.pdf>

⁹⁰ http://www.ihl.org/Engage/Initiatives/TripleAim/Documents/BeasleyTripleAim_ACHEJan09.pdf

influence satisfaction” (p. 620). Such findings support Berkowitz’s (2016) and Tsai et al.’s (2015) argument that patient satisfaction does not necessarily indicate good quality outcomes.⁹¹

The significance of engaging patients for improving their satisfaction is worth noting. However, because factors like patients’ employment, genetics, family background, and demographics also affect the provider-patient relationship, such relationships are highly variable (Berkowitz, 2016).

In addition to individual patient level subjectivities, medical care related practices vary among hospitals based on their ownership. When individual, organizational, and institutional level factors operate simultaneously and in turn affect provider-patient relationships, the reliability of patients’ reporting about factors affecting their satisfaction may be questioned. . It also makes inclusion of outcomes important for quality measurements.

Nonetheless, in an era of market-based rationality and consumerism (Scott et al., 2000), consumer experiences and perceptions are key not only to building markets building and organizational legitimacy but also for judging quality (Scott et al., 2000, p. 234; Heskett et al., 1990). When “satisfaction” is a key measure of quality, the quality of provider-patient relationships, and factors that could potentially impact such relationships and the patients’ relationship with the hospital setting may affect judgments about the quality of care (Brennan, Barnes, Calnan, Corrigan, Dieppe, & Entwistle, 2013; Chang, Chen, & Lan, 2013; Birkhäuser, Gaab, Kossowsky, Hasler, Krummenacher, Werner, & Gerger, 2017; Donabedian, 2005). By addressing relational issues “that are unique to health care delivery” (Perry, 2012, p. 380) quality

⁹¹ Some believe patients may use their baseline health status as a referent for judgments about satisfaction (See for e.g., Hermann, Ettner, & Dorwart, 1998; Williams & Calnan, 1991; Temkin-Greener, & Winchell, 1991). Also, when we analyze Donabedian’s arguments of “effectiveness” of care and “outcome” (Donabedian, 1990), it seems he also implied patient’s baseline health status as a referent for health care quality. He defined effectiveness of care as the “actual improvement in health” (p. 1117). By “outcome”, he meant “a change in patient’s current and future health status that can be attributed to antecedent health care” (Donabedian, 1980, pp. 82-83).

of care may be improved (Robinson, 2016). More specifically, as Casalino et al. (2003) argued, physicians might design a facility (e.g., a POH) and govern it in a way that increases productivity and promotes better patient engagement through greater patient focus. In turn, patient satisfaction may improve (p. 56).

The next section describes provider-patient relationships in a consumer driven health care environment.

3.2 PROVIDER-PATIENT RELATIONSHIPS IN A CONSUMER-DRIVEN ENVIRONMENT

Thorne & Robinson (1989) identify four major types of provider-patient relationships. They argue that quality provider-patient relationship depends on the nature of the relationship and the patient's perception of their own competence (see Figure 3.1). A relationship of *consumerism* (depicted in the lower right quadrant) is marked by low trust in providers and high consumer trust in their own problem solving capacity (Thorne & Robinson, 1989). Patient's "self-perceived health status at admission" evidently is a strong predictor of patient satisfaction (Thi, Briançon, Empereur, & Guillemin, 2002). Consumer driven relationships put "patients and family members squarely in the driver's seat of their own health care and involved taking responsibility for problem solving and decision making" (Robinson, 2016, p. 8). In such relationships, consumers have more faith in their ability to communicate to providers the care they desire.⁹²

⁹² However, the "downside to this relationship type was that it took a great deal of work, but it also offered a high level of control" to providers (Robinson, 2016, p. 8) because providers need to invest resources in trust building with patients first, which may not be easy.

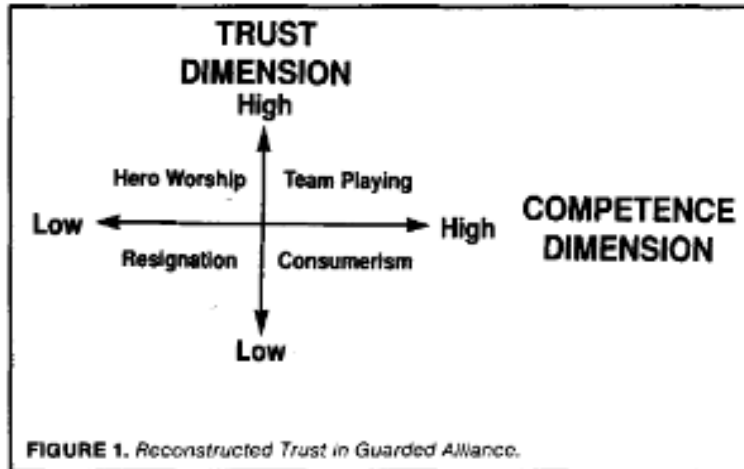


Figure 3.1: Types of provider-patient relationships (Thorne & Robinson (1989, p. 156))

It should also be recognized that one hospital may allow more active patient participation than another, but this does not necessarily mean that providers would act on information shared by patients. Enabling participation is one thing, but using critical pieces of information in designing and delivering patient-centered care is another. Multiple organizational and institutional level factors (like efficiency concerns, profit motive, or regulatory requirements) might prevent some hospitals from responding responsively.

Moreover, as Parsons (1951) noted, illnesses reduce patients' critical analysis skills. A direct risk could be higher susceptibility to manipulation by providers. Hospitals that report higher quality provider-patient relationships and yet have lower quality care (based on either patient satisfaction or outcomes) might be hospitals that enable active participation but do not necessarily use critical patient information. It is only an expectation that active provider-patient participation would result in higher satisfaction and better outcomes, but there is no guarantee that higher communication quality will result in higher satisfaction and better outcomes. That said, "[m]ore recently . . . recognizing the benefits of more proactive roles for patients and the

improved outcomes that result, both health care providers and consumers are encouraging significant patient participation in every health care decision” (Sultz & Young, 2006, p. 6).

Meanwhile, higher patient satisfaction may not at all be possible without quality provider-patient communication and relationship. A study of cancer patients in Romania by Gadalean, Cheptea, & Constantin (2011) found compassionate treatment and promptly addressing patients’ needs to be significantly related to patient satisfaction. Gadalean, et al. defined patient satisfaction as an “element of psychological health that influences the results of medical care” (p. 41). According to their research, factors like inadequate explanation of medical care, lack of privacy, high noise levels, absence of medical staff when needed, nurses’ focusing on tools and devices not patients, and improper room temperatures reduced patient satisfaction significantly. Similar variations may exist among hospitals in the U.S., which might affect the overall quality of care they offer.

The significance of provider communication and explanations of medical care is not limited to inpatient care. Communication also is important for the discharge period. Because the “period of discharge from the hospital is one of the most vulnerable and complex times for a patient during their journey through the health-care continuum”, it is often characterized by higher levels of patient anxiety and uncertainty (Waniga, Gerke, & Shoemaker, 2016, p. 64). Variations also exist in “the quality of discharge instructions . . . between the providers responsible for producing and educating patients about their hospitalization and post discharge care”, which may further affect patients’ health following discharge (Waniga et al., 2016, p. 64). According to Forster, Murff, Gandhi & Bates (2003), because of poor delivery and understanding of discharge instructions, almost 19% of patients experience post discharge

adverse events like being readmitted, which in turn may “impact the overall [patient] perception of the hospital experience” (Waniga et al., 2016, p. 64).

Higher reported quality of physician and nurse communication with patients in some hospitals might indicate greater potential to engage patients better than hospitals with lower provider communication quality. Jacobs (2016) argues that patient satisfaction extends beyond provider communication; instead it reflects “the entire experience,” which includes both “the service” as well as “the product”. When hospital practices are not designed to “facilitate patient-centered care,” quality may suffer (p. 316). After passage of the ACA, hospitals focused more on improving the quality of inpatient experience because performance linked reimbursements “have become normative within healthcare, [and] patient satisfaction has become a metric to measure quality” (p. 316).

Some hospitals may be better than others on provider communication, environmental factors, and discharge quality. Donabedian (1980) and Scott et al. (2000) previously argued medical care related practices and processes are more likely to vary among hospitals according to their ownership. Physician ownership of hospitals and market logic suggest that POHs and other for-profit hospitals would have greater patient focus than not-for-profit hospitals, which should translate into higher patient satisfaction and better patient outcomes.

Donabedian (1980) argued that structure of a hospital indicates propensity to higher or lower quality care. Among POHs, corporate-owned, and not-for-profit hospitals, variations in patient satisfaction and outcomes also might suggest values other than market orientation that may be more compatible with quality patient-centric care. The next section describes Donabedian’s S-P-O model for analysis of quality care.

3.3 DONABEDIAN MODEL

Among the prominent models of health care quality, only Donabedian's structure-process-outcome (SPO) model analyzes quality of care in a manner that seems most suitable for an organizational-level analysis of quality care. The Agency for Healthcare Research and Quality (AHRQ) also uses the Donabedian model for quality assessments.⁹³

The Donabedian model has three elements, each of which is described below.⁹⁴

Structure

One feature of assessing care involves structure:

[The] relatively stable characteristics of the providers of care, of the tools and resources they have at their disposal, and of the physical and organizational settings in which they work.... [It] goes beyond the factors of production to include the ways in which the financing and delivery of health services are organized, the manner in which physicians conduct their work, the organization of the medical and nursing staff in a hospital, [and] quality review. ... The basic characteristics of structure are that it is relatively stable, that it functions to produce care . . . and that it influences the kind of care that is provided (Donabedian, 1980, p. 81).

Different hospital structures, like for-profit and not-for-profit hospitals, then would be expected to have direct effects on the ways in which physicians and nurses work, approach patients, and influence patients' health. "Structure, therefore, is relevant to quality in that it increases or decreases the probability of good performance" (Donabedian, 1980, p. 82).

Structures also may limit or enable providers' responses to patients' needs according to the values they represent. If this is the case, arguments could be made about the association between underlying organizational values and patients' health.

⁹³ <https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/types.html>

⁹⁴ Apart from the Donabedian model, several other models focus on health care quality, including the Anderson Behavioral Model (ABM) (Anderson, 1968, 1995), the Health Belief Model (HBM), and the theory of Reasoned Action (TRA). ABM is used as a benchmark model that examines an individual's understanding of a potential problem and whether medical care is needed to address it. According to Cornelius & Bankins (2009, p. 47), HBM was developed by Godfrey Hochbaum, Irwin Rosenstock, and Stephen Kegels in the 1950s as a response to failures in tuberculosis screening.⁹⁴ The theory of reasoned action (Fishbein & Azjen, 1975) assumes consumer rationality, and patients' ability to weigh costs and benefits is key in making decisions about seeking medical care.

In this model, a “good” structure not only has adequate resources but also is designed systematically to simultaneously protect and promote quality care (Donabedian, 1980, p. 82). Variations in quality of care might be expected among POHs, corporate-owned and NFP hospitals.

Process

The process of providing care comprises both the technical and interpersonal aspects of medical care. Patients, their families, and other societal stakeholders may judge its quality by the impact it has on the “health and welfare of individuals” (Donabedian, 1980, p. 80). The process of care is largely governed by normative standards of professional and social life. For example, research publications and advances in science and technology guide the *technical* quality of care, and values and ethical conduct prescribed by the medical profession or general society govern the *interpersonal* aspect and expectations associated with medical care (p. 80).

Donabedian implied that processes of care may be designed to accommodate both technical and interpersonal values. This potentially means providers must not only engage patients by providing adequate explanations about various aspects of inpatient care directly related to their conditions, but must also appeal to patients’ comfort. Patients’ comfort in an inpatient setting may be managed by responsiveness and attentiveness of the medical staff to the patients’ needs and also by appealing to their mood through “amenities” (Donabedian, 1980, pp. 4-5). CMS’s standard HCAHPS survey collects data on technical, interpersonal and other comfort related factors associated with inpatient care.

Good medical care must produce uniform results; and a breakdown in consistency would indicate lapses of professional standards and values. That is, if patients’ expectations are met by

processes of care that engage patients and providers jointly, across all structural types, consistency and quality of care should be expected. “The good physician is required only to do what is known or believed to be best for the patient” (Donabedian, 1980, p. 80). Whether structural obligations enable or hinder providers from practicing care that they deem fit is not fully clear. It is possible some hospital structures may value organizational efficiency over patient-centric care due to value constraints and that might conflict with professional standards guiding the process of providing medical care.

Outcome

Reliance on structure alone “as a means for assessing the quality of care . . . is a rather blunt instrument; it can only indicate tendencies. The usefulness of structure as an indicator of the quality of care is also limited because of our insufficient knowledge about the relationships between structure and performance” (Donabedian, 1980, p. 82). The third feature in Donabedian approach to quality assessment is analysis of outcomes. He defines outcome as “a change in patient’s current and future health status that can be attributed to antecedent health care” (pp. 82 - 83). This definition considers mediation by inpatient care in explaining changes in patient’s health, but it does not specify the time period that might be associated with changes in patient health. The length of time for patient recovery, though, is an important criterion of quality under the ACA, which has a 30-day window for hospital readmissions and mortality.

Donabedian conceptualizes health care broadly to include psychological functions along with the usual “physical and physiological aspects of performance” (p. 83). He adds that changes in a patient’s behavior, knowledge, and attitudes, including satisfaction, as a result of the care a patient receives could be seen as “contributions to future health” (p. 83), but only substantive

change in patients' health indicates quality of care. The HCAHPS survey, for example, for assessing quality care measures patient attitudes and satisfaction, as well as the recovery-related knowledge (for e.g., recovery information that patients receive at the time of discharge and their understanding of recovery information) that patients acquire due to their inpatient experience.

Two points arise here. One is that patients' behaviors potentially already have different levels of these "change" related aspects prior to individuals being admitted to a hospital, which patients might use as referents for judgments about their current care. Second, it seems "change" is a theme that Donabedian uses to make judgments about the outcomes of health care patients receive. This becomes clearer when one views his definition of "effectiveness of care" (1990, p. 1117) in conjunction with "outcomes". He defines effective care as "actual improvement in health" (1990, p. 1117). He also notes that "elements of process of care" must "reasonably" explain "such changes" in patients' health status (p. 83). For Donabedian, then, measures like unexpected readmissions, mortality and complications may indicate quality of care than simply patients' satisfaction.

3.4 CONCEPTUAL FRAMEWORK

Because causality may be hard to establish (Donabedian, 1980, p. 4; Mick & Shay, 2014), there may never be objective standards with which to judge the quality of care. In addition, quality judgments "are often made not about medical care in itself, but indirectly about the persons who provide care, and about the settings within which care is provided" (Donabedian, 1980, p. 3). Donabedian argues that quality is much more than simply describing how one perceives different attributes and the phenomena they correspond to. Limiting judgments to the perceptions of individuals alone might not resolve ambiguities surrounding

quality judgments. He suggests that definitions of quality that consider “complete module[s] of care” might be used to analyze quality of care more holistically (p. 4).⁹⁵

Regardless of the setting in which medical care is provided, the management of care can be divided into technical and personal care. “Technical” care refers to the technological quality of medicine and “personal” care to reciprocal social engagements between patients and providers (Donabedian, 1980, p. 4). He argues that quality medical care has intertwined elements of science and art. “Technical care is far from curative” and lacks predictive power (Donabedian, 1980, p. 4; Mick & Shay, 2014). A third element, “amenities,” might be added for making quality judgments. In general, amenities refer to the ambiance and aesthetics of a medical care setting, including features like a “pleasant and restful waiting room, a comfortably warm examining room, clean sheets, a comfortable bed, a telephone by the bedside, good food, and so on” (Donabedian, 1980, p. 5). In his view, amenities must not be used as substitutes for the technical quality of care in making quality judgments, because they are “primarily” part of “management of the interpersonal relationship” and “signify concern for patient satisfaction” (p. 5). Only technical care that “maximizes its benefits to health” through “the most favorable balance of risks and benefits” and interpersonal care that meets “socially defined values and norms” that may be professionally defined, are good indicators of quality care (p. 5). In comparing quality care among different types of hospitals, for example, some hospitals may emphasize practices that are associated with higher patient satisfaction, and yet not achieve corresponding recovery levels. Meanwhile, other hospitals might achieve better recovery results

⁹⁵ By “module of care,” Donabedian means care provided by physicians and other providers for an episode of illness, which most likely pertains to an inpatient setting (Donabedian, 1980, p. 4). According to *Stedman’s Medical Dictionary* an “episode of care” refers to “All services provided to a patient with a medical problem within a specific period of time across a continuum of care in an integrated system.” For Young & Fisher (1980), an episode of care requires admitting patients to a hospital and patients getting discharged afterwards.

despite providing relatively less care.

Previous empirical research has highlighted several key attributes of medical care generally, and of consumer driven, market-oriented health care more specifically. Medical care practices vary nationally, including physician communication with patients, explanations of medical care, pain control, patient comfort, and delivery and understanding of discharge instructions. Such practices are likely to affect patient satisfaction (GAO, 2004; Sultz & Young, 2006). Consumer experience and service quality shape consumer satisfaction; consumer satisfaction is a key judgment criterion for quality measurements. Yet patient satisfaction may not always be associated with clinical outcomes among patients or hospitals.

Meanwhile, we do not know how professional orientation and market logic apply in different hospital forms. Some scholars have argued that better quality care is associated with more professionally oriented and professionally owned hospital forms. From this perspective, the quality of care should decline with a reduction in professional ownership of hospitals. In this view, POHs should have the best quality of care, corporate-owned intermediate quality, and not-for-profit the lowest quality of care. Analyzing quality of care among hospitals in this way could help one understand whether the for-profit nature in general and physician investments in hospitals actually improve quality of care and provide more cost effective care, as Herzlinger (2004, 2007) and the PHA claim it would.

If market logic applies equally to all hospital forms, and variation exists generally in medical practices, one should not expect much variation in the performance of hospitals. If there is variation in patient satisfaction and outcomes, this raises questions about the underlying values of the hospitals. That is, one hospital form might be more inclined towards profits than others;

one might be more focused on managing patients' perceptions only without much consideration for outcomes; or one might be more concerned with providing better value of care to patients, and better outcomes but may not be as good in managing patients' perceptions. Furthermore, we do not know how general service POHs fare compared to other general service corporate-owned and not-for-profit hospitals. If there is variation in the performance of specialty and general service POHs, one should not use the better performing category as a surrogate for the entire POH organizational form.

This study's conceptual framework (see Figure 3.2) connects professional ownership and market logic to better understand possible variations in performance among physician-owned, corporate-owned, and not-for-profit hospitals. The unit of analysis is the organization (hospital).

The framework suggests two components of patient-centric care that together constitute a personalized care experience for patients. The quality of patient-centric care combines patient satisfaction and clinical outcomes. Because hospitals (most notably POHs) often cite higher patient satisfaction ratings as evidence of quality care and use such ratings to lobby legislators and attract patients, it is important to know the relationship between patient satisfaction and outcomes. Using patient satisfaction and outcomes together to make quality judgments captures not just observable attributes (i.e., medical care practices) but also perhaps the underlying values of an organizational form.

In the framework, POHs, corporate-owned, and not-for-profit hospitals vary by physician ownership and market based orientation. Inpatient and discharge care components are distinguished as parts of the sequence of delivering care. In a market-driven environment, evaluation of quality is usually based on consumer experience and consumer satisfaction. Notably, the framework shows patient satisfaction connected with a solid line with elements of

the personalized patient care experience. For example, here “provider communication quality” refers to patients’ perceptions of the quality of doctors’ and nurses’ communication.

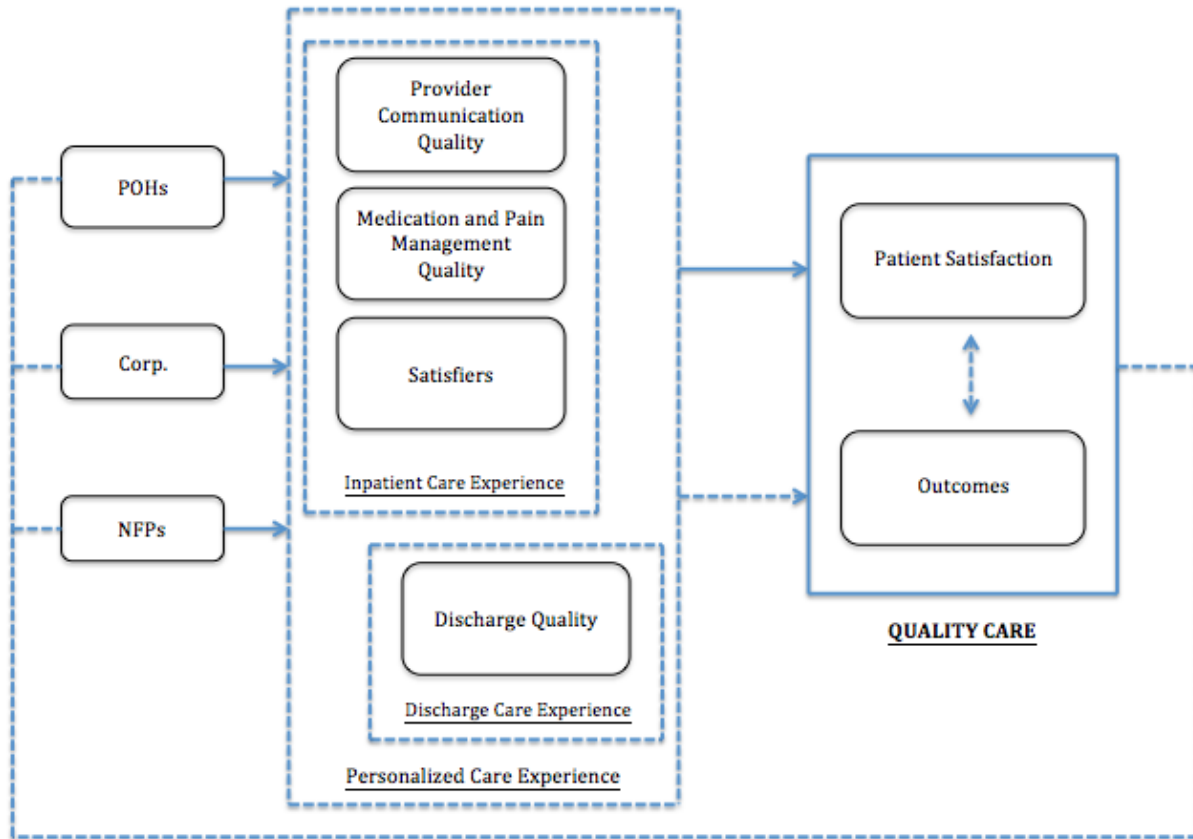


Figure 3.2: Conceptual framework

“Medication and pain management quality” taps patients’ perceptions of those aspects of care that might be directly related to treatment of their conditions (like management of pain levels, promptness of hospital staff in responding to their needs, and staff-patient engagements).

“Satisfiers” refer to hospital environmental factors related to hospital amenities as Donabedian (1980) suggested. “Discharge quality” means patients’ views of the quality of transitioning out of the hospital, while “patient satisfaction” refers to patients’ perceptions of the overall quality of their hospital stay. “Outcomes” are similar to Donabedian’s (1990) definition of effectiveness of

care. The relationship between medical care practices and clinical outcomes is shown via a dotted line to reflect known variation in practices and their lack of predictable effects.

The existence and direction of relationships between patient satisfaction and outcomes also are uncertain. The framework treats quality as an encompassing concept, one that is not based on efficiency alone. The conceptual framework considers effects more holistically, examining individual psychological (patient satisfaction) as well as substantive effects (outcomes), much like Donabedian's (1980) conception of quality care.

The relationships among types of hospitals, practices, and their effects on patient satisfaction and outcomes yield several hypotheses to be examined empirically. The next section introduces these hypotheses.

3.5 HYPOTHESES

The hypotheses all follow the same logic: professional ownership of hospitals, combined with consumer driven market incentives, will be associated with better quality care. The quality of patient-centric care is expected to be better in for-profit hospitals than in not-for-profit hospitals, and the quality of care is predicted to be better in POHs than in corporate-owned hospitals.

Hypotheses H1 and H2 examine patient satisfaction and outcomes among hospitals, using both inpatient care and discharge care components of the personalized care experience. These hypotheses predict that professional ownership and governance of hospitals by physicians will be associated with greater consumer (patient) focus, which in turn will translate into greater patient satisfaction and better patient outcomes. In an inpatient hospital setting, the focus of providers is expected to be on the personalized care experience of patients (tapped here by reported patient

satisfaction), especially in a consumer driven health care environment. H1 is further divided into two sub-hypotheses. The first hypothesis predicts a positive association between the professional ownership (i.e., by physicians) of hospitals and patient satisfaction.

H1a: Patients receiving medical care in POHs will report greatest patient satisfaction; patient satisfaction will be intermediate in corporate-owned hospitals, and lowest in NFP hospitals.

Several mediating factors, like the content and quality of providers' communication regarding inpatient stays, the level of providers' focus on managing patients' conditions, hospital's environmental factors (e.g., Iannuzzi, Kahn, Zhang, Gestring, Noyes, & Monson, 2015; Schmocker, Stafford, Siy, Levenson, & Winslow, 2015; Berkowitz, 2016), and the extent to which providers manage patients' discharge related anxieties (for e.g., Waniga et al., 2016) may help shape patient perceptions. H1b predicts mediation by such factors for patient satisfaction.

H1b: Provider practices will be associated with the greatest reported patient satisfaction for patients receiving medical care in POHs, intermediate patient satisfaction in corporate-owned hospitals, and lowest patient satisfaction in NFP hospitals

If providers' practices perform as mediating variables, then the direct relationship between ownership and satisfaction will weaken or disappear altogether (Baron & Kenny, 1986).

The second set of hypotheses concerns outcomes (i.e., the association of ownership and of provider practices on patient health). It is more relevant to the “technical” quality of hospitals. Similar to H1a and H1b, H2a predicts a positive association between the professional ownership of hospitals and patient outcomes, and H2b tests for mediation by providers’ practices.

H2a: Patients receiving medical care in POHs will have the best outcomes; patient outcomes will be intermediate in corporate-owned hospitals, and lowest in NFP hospitals

H2b: Providers’ practices will be associated with the best patient outcomes for patients receiving medical care in POHs, intermediate in corporate-owned hospitals, and lowest in NFP hospitals

If, in addition to higher patient satisfaction, POHs and corporate-owned hospitals are associated with better outcomes, then one might well argue for a market driven profit-oriented approach in health care. To the contrary, if lower quality outcomes (e.g., higher readmissions, higher patient complications, or higher mortality) are related to higher patient satisfaction, or, more generally, if outcomes are negatively related to patient satisfaction, the quality of patient-centric care provided by hospitals may be questioned. Hypothesis H3 focuses on the relationship between patient satisfaction and outcomes, controlling for hospital ownership.

H3: Patient satisfaction and outcomes will have the highest positive association in POHs, intermediate in corporate-owned hospitals, and weakest in NFP hospitals.

3.5.1 Controls

Thi et al. (2002) found shorter stay durations of less than one week were associated with higher patient satisfaction. Longer inpatient stay durations may have harmful effects on patient health (Caminiti, Messchi, Braglia, Diodati, Iezzi, Marcomini, Nouvenne, Palermo, Prati, Schianchi, & Borghi (2013). The complexity of a patient's health problems also seems to vary according to hospital's teaching affiliations (Mendez, Harrington, Christenson, & Spellberg (2014), and that potentially could impact quality of care. Surgical volume and size of hospital (number of beds) are also associated with patient satisfaction (Kennedy, Tevis, & Kent, 2014). However, here, because quality comparisons are not strictly among surgical hospitals, I used hospital's capacity and admissions capacity as variants of size and surgical volume. Aiken, Clarke, Sloane, Sochalski, & Silber (2002) found hospitals with "high patient-to-nurse ratios" negatively impact patient mortality (p. 1987). Cimiotti, Aiken, Sloane, & Wu (2012) found lower nursing staff levels are associated with higher patient acquired infections, probably because of greater workloads and nurse burnouts.

Because there are no data available on the share of costs of care borne by insurance companies, I used hospitals' Medicare cost (Medicare Spending per Beneficiary, MSPB) as an indicator of cost of care. Using MSPB as an indicator of costs may be appropriate, since POHs are expected to save more than 3 billion dollars in Medicare costs in next ten years.⁹⁶ Using MSPB gives one better indication of how much share of Medicare money is being used by each hospital type and the quality of care they provide.

⁹⁶ <https://www.forbes.com/sites/gracemarieturner/2015/11/06/lift-the-ban-on-physician-owned-hospitals/#147fc9801531>

Hospital capacity, admissions capacity, patient complexity (e.g., case mix), average lengths of stay, hospitals' teaching and system affiliations, and Medicare costs are all used as controls.⁹⁷

3.6 CONCLUSION

This study applies notions of health care quality to distinctive organizations, i.e., hospitals, comparing quality under different kinds of hospital structures (not-for-profit, corporate, and physician owned). In the SPO model, “the structural characteristics of the setting in which care takes place have a propensity to influence the process of care so that its quality is diminished or enhanced. Similarly, changes in the process of care, including variations in its quality, will influence the effect of care on health status, broadly defined” (Donabedian, 1980, pp. 83 – 84). Yet “structure . . . is perhaps the most important single factor in what most people now call ‘quality assurance’ . . . [and] an important method for assessing the propensity of an organization to encourage or discourage ‘good behavior’.” Structure indicates “the potential, capacity, or propensity to perform badly or well” (Donabedian, 1980, p. 100). Looking at hospital structures based on ownership allows one to see which if any has a higher propensity to deliver consistent quality patient-centric care. The next chapter describes the research setting for probing this issue.

⁹⁷ Hospital capacity is simply the ratio of total personnel per bed; admissions capacity is the ratio of total admissions per bed.

CHAPTER 4: RESEARCH DESIGN

This chapter describes how the hypotheses Chapter 3 introduced were explored. The study is a non-experimental design that compares the quality of care in hospitals based on their ownership status in October 2017 and January 2018.⁹⁸ The chapter details the research design, including data sources, operationalization of key variables, sampling, data, and the methods used for analysis.

4.1 DATA SOURCES

Prior to systematic data collection, in 2017 I had several exploratory meetings with representatives of the three types of hospital to better understand their perspectives on quality care. I scheduled meetings with officials of the trade group, PHA, representing for-profit POHs, and with quality managers from a corporate-owned and a not-for-profit hospital in Virginia. These meetings helped me in developing a more thorough sense of the perspectives of each type of hospital on patient satisfaction and hospitals' practices.

Thereafter, I subscribed to online magazines (e.g., *Becker's Hospital Review*, *Clinical Leadership & Infection Control*, *ASC Review*, and *Spine Review*) to remain up-to-date on issues related to different hospital types, physicians, patients, technological advancements, infections, mergers and acquisitions, and hospital staff. I also attended multiple webinars organized by industry experts and practitioners that were advertised by Becker's. Daily emails on health care issues and access to research papers made available by Becker's improved my contextual understanding of health care issues in the U.S.

⁹⁸ January 2018 was selected because when this research began these were the latest data released by CMS. On May 23, 2018, CMS released more quality data.

Much of the research here is based on secondary data. Data collection and cleaning began in late January 2018 and lasted through April 2018. The U.S. Department of Health and Human Services launched the Hospital Quality Initiative in 2001 to improve quality care generally for all Americans through public reporting of quality data, consumer empowerment and a push for higher provider accountability. In 2008, data from Medicare patients were brought under the ambit of the Hospital Quality Initiative. Medicare patients' data are collected using HCAHPS patient satisfaction surveys.⁹⁹ Patient satisfaction survey data, data on outcomes and hospitals' general information are publicly available via the "Hospital Compare" link, which is accessible through the CMS website and through a separate site.¹⁰⁰

Publicly available hospital, state, and national Medicare datasets are on the website <https://data.medicare.gov/data/>. Of these, I used the hospital level datasets to obtain data on each sampled hospital. For each hospital level Medicare dataset used here, there are corresponding national level datasets. I used national level datasets for obtaining national average rates for practices, patient satisfaction, and outcomes. For example, the national rates for practices and patient satisfaction are available on "Patient survey (HCAHPS) – National" dataset.¹⁰¹ In addition to differences among practices and patient satisfaction rates, I calculated percentage differences from the national average for hospital specific outcome rates.

4.2 OPERATIONALIZATION

4.2.1 Dependent variables

⁹⁹ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/downloads/HospitalOverview.pdf>

¹⁰⁰ <https://www.medicare.gov/hospitalcompare/Data/About.html>; <https://data.medicare.gov/data/hospital-compare>

¹⁰¹ <https://data.medicare.gov/Hospital-Compare/Patient-survey-HCAHPS-National/99ue-w85f/data>

The dependent variable, quality of patient-centric care provided in hospitals, is multi-dimensional, tapped here by patient perceptions of quality and by outcomes. Patient perceptions of quality are measured by “top-box” responses for the overall hospital experience and a recommendation for the hospital (see Figure 4.1).¹⁰² CMS also measures patient satisfaction using overall ratings for the inpatient hospital stay and patient recommendation about a hospital (Tevis et al., 2015, p. 222).¹⁰³

In the HCAHPS survey, overall satisfaction with inpatient stay is tapped by patient ratings of their hospital stay on a scale of 0 to 10 and patient willingness to recommend a hospital. CMS considers patients rating their inpatient experience 9 or 10 and patients responding “Definitely yes” to recommending a hospital as “top-box” responses or the “most positive response.”¹⁰⁴ Following Tsai et al. (2015), Tevis et al. (2015), Jha, Orav, Zheng, & Epstein (2008), this research also used top box responses for patient satisfaction. The January 2018 CMS data (for the full sample) produced a high correlation between top box responses for both predictors of patient satisfaction, i.e., patients rating a hospital 9 or 10 and patients definitely recommending a hospital (.806**, p=.000). October 2017 data (full sample) also yields a correlation of .921** between both predictors of patient satisfaction (p=.0000. Therefore, I focused on patients definitely recommending a hospital as primary predictor of patient satisfaction as Tsai et al. (2015) did. Similarly, correlations between 30-day hospital-wide unplanned readmissions and excess readmissions are statistically significant .471 (p=.000) for 2018 and .536 (p=.000) for 2017. Therefore, I used 30-day hospital-wide unplanned readmissions as an indicator of hospital readmissions.

¹⁰²http://www.hcahpsonline.org/globalassets/hcahps/facts/hcahps_fact_sheet_november_2017a.pdf

¹⁰³ <http://www.hcahpsonline.org/globalassets/hcahps/survey-instruments/mail/jan-1-2018-and-forward-discharges/click-here-to-view-or-download-the-updated-english-survey-materials.pdf>.

¹⁰⁴ <http://www.hcahpsonline.org/globalassets/hcahps/technical-specifications/calculation-of-hcahps-scores2.pdf>

According to CMS¹⁰⁵, in a fee-for-service medical culture “outcomes measures look at the morbidity and mortality arising from” patients’ conditions.” Greenwald, Cromwell, Adamache, Bernard, Drozd, Root, & Devers (2006, p. 113) examined mortality, patient safety, and readmission rates as measures of quality care. In the medical literature, scholars have analyzed different outcome measures. For example, Tarchichi, Garrison, Jeong, & Fabio (2017) examined length of stay, costs, and readmissions; Carter, Ward, Wexler, & Donelan (2018) and Boulding, Glickman, Manary, Schulman, & Staelin (2011) readmissions and patient satisfaction; and Kennedy, Tevis, & Kent (2014) mortality rates.

OVERALL RATING OF HOSPITAL

Please answer the following questions about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

21. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?

0 0 Worst hospital possible
 1 1
 2 2
 3 3
 4 4
 5 5
 6 6
 7 7
 8 8
 9 9
 10 10 Best hospital possible

22. Would you recommend this hospital to your friends and family?

1 Definitely no
 2 Probably no
 3 Probably yes
 4 Definitely yes

Figure 4.1: HCAHPS Survey Items on Patient Satisfaction (Tevis et al., 2015, p. 223)

CMS, however, measures outcomes through 30-day risk adjusted mortality rates for Heart failure (HF), Pneumonia (PN), Acute Myocardial Infarction (AMI); 30-day risk adjusted

¹⁰⁵ https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/downloads/QualityMeasurementRoadmap_OEA1-16_508.pdf

readmission rates for AMI, HF, PN, hip and knee replacement; and patient safety indicators.¹⁰⁶

The patient safety measures include complications or harm that patients might face during various parts of their inpatient stays due to provider practices¹⁰⁷; readmissions and mortality measures indicate the potential consequences of CMS's use of patient safety indicators as a measure of quality suggests that higher patient safety or lower patient complications during inpatient stays likely are associated with lower readmission rates and lower mortality.

Following CMS standards, this research employed similar outcomes measures. It used two measures of readmissions: 30-day Excess Readmissions due to HF, PN, AMI, Compulsive Obstructive Pulmonary Disease (COPD), Coronary artery bypass surgery (CABG), and Hip & Knee replacements, and 30-day Hospital-wide unplanned Readmissions. I used the mean of excess readmission rates for all six conditions to obtain one standard readmission rate for each hospital. Two readmissions measures are used because readmissions may not be limited to these six conditions; instead multiple other factors might cause unplanned readmissions. For example, higher comorbidities among patients or treatment to manage one condition may create imbalances in other existing conditions upon discharge. Research by McCrum, Joynt, Orav, Gawande, & Jha (2013) finds that mortality rates for AMI, HF and PN predict care related patterns at a hospital. I averaged six conditions for readmissions because Dharmarajan, Hsieh, Lin, Bueno, Ross, Horwitz, Barreto-Filho, Kim, Suter, Bernheim, Drye, & Hines Jr. (2013) argue that general strategies rather than condition-specific strategies might reduce overall readmissions rates. Therefore, using readmissions rates for six conditions is a better indicator of a general

¹⁰⁶ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/index.html>

¹⁰⁷ https://www.qualityindicators.ahrq.gov/news/psi90_factsheet_faq.pdf

hospital level quality strategy to reduce readmissions. Finally, the PSI 90¹⁰⁸ patient safety measure is used to indicate other complications patients might face.¹⁰⁹

4.2.2 Independent variables

The primary independent variable is hospital ownership. Here, ownership in hospitals is measured by whether there is physician ownership in hospitals and hospitals' for-profit or not-for-profit status. The mediating variables ("practices") from the conceptual framework include communication between providers and patients, pain and medication management quality, hospital's environmental factors, and patient recovery related care after discharge from a hospital. Data on measures associated with inpatient care and with discharge care come from the HCAHPS patient satisfaction survey. (Please see Appendix C). This survey measures patients' perceptions of their complete inpatient care experience. CMS then uses patients' experiences to assign star ratings to each participating hospital.¹¹⁰

A study by Jackson et al. (2001) examined factors of patient satisfaction in a general medicine walk-in clinic in the U.S. using a 2-week and a 3-month follow-up survey of 500 patients. They found correlations between patient satisfaction and eight satisfaction-specific questions on the RAND-9 Patient Satisfaction Survey (Rubin, Gandek, Rogers, Kosinski, McHorney, & Ware, 1993).¹¹¹ The questions related to various domains of care like explanation of medical care (for example, related to symptoms and tentative recovery time), technical competence of physicians or health care professionals, personal manners (like courtesy, respect,

¹⁰⁸ https://www.qualityindicators.ahrq.gov/news/psi90_factsheet_faq.pdf

¹⁰⁹ CMS uses an additional patient safety indicator, PSI 04, as an outcome measure, but I did not use PSI 04 because this particular indicator pertains to surgical inpatients only and is used for reporting deaths among surgical inpatients due to treatable complications post-surgery.

¹¹⁰ <https://www.medicare.gov/hospitalcompare/Data/HCAHPS-Star-Ratings.html>

¹¹¹ https://www.rand.org/health/surveys_tools/vsq9.html

and friendliness), time spent by providers, convenience of location, and ease of appointments. However, their study did not consider nurse-patient communication, but only physician-patient communication. They suggested that patient satisfaction surveys should be careful of sampling time frame and patient mix for more informed measurement of patient satisfaction (p. 609). CMS requires participating hospitals to survey patients every month, and they are not limited to Medicare beneficiaries only¹¹².

Kahn, Iannuzzi, Stassen, Bankey, & Gestring (2015) analyzed 182 trauma and acute care surgery patients and found patient perceptions of interaction with providers (physicians and nurses) predicted patient satisfaction. Pain control, hospital cleanliness and staff responsiveness were found to be associated with patient satisfaction. A second study by Iannuzzi et al. (2015) analyzed 978 surgery patients, and found clinical complications and provider communication were associated with patient satisfaction. Schmocker et al. (2015) used a variant of HCAHPS survey called S-CAHPS¹¹³ that primarily assesses surgical care based on preoperative care and care provided on the day of the surgery. They found physician communication with patients at the preoperative stage predicted patient satisfaction.

In the HCAHPS survey, seven composite topics relate to nurse communication, physician communication, staff responsiveness, pain management, medication explanation, and discharge care and care transition. Together, these constitute personalized care practices. From the composite topics, patients reporting that their doctor and their nurse “always communicated well” measure provider communication quality. Pain control, staff responsiveness and medication explanation are measures of medication and pain management quality. Patients reporting that they always received help as soon as they requested it, their pain always was well

¹¹² <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Downloads/HospitalHCAHPSFactSheet201007.pdf>

¹¹³ <https://www.facs.org/advocacy/quality/cahps/surgical-care-survey>

controlled and they were given adequate explanations for medicines tapped pain and medication management quality. Patients reporting that their room and bathroom were always clean, and that the rooms were quiet at night (hospital environment quality measures included under “Individual topics” in the survey) tap the “satisfiers” in the conceptual framework. Finally, patients reporting they were given adequate recovery information and agreeing that they strongly understood recovery information tapped discharge care quality.

4.3 SAMPLE

Sampling of the hospitals on which data were collected was carried out in two stages (McNabb, 2002). First, POHs were randomly selected from a list that PHA compiled using CMS data. (The complete list of POHs is in Appendix, Section A.) I first copied all POHs into an MS Excel file and identified their Provider IDs from the CMS HCAHPS January 2018 dataset.¹¹⁴ Then I randomly selected 100 POHs using the Excel RAND function. This list included both specialty as well as general service POHs. Of the POHs selected, two are now permanently closed but data on one of them were available for the January 2018 and October 2017 quarters. Three POHs were psychiatric and rehab hospitals, and data were missing on eight other POHs. The POH sample had 97 POHs after removing the psychiatric and rehab hospitals; I removed these, because the HCAHPS survey is not administered to psychiatric patients.¹¹⁵

The second stage consisted of sampling corporate-owned and not-for-profit hospitals. I downloaded the HCAHPS hospital survey for January 2018 from the Medicare data website. From this master list of hospitals, I removed all known POHs. The CMS dataset on “Hospital

¹¹⁴ The archived HCAHPS data are available using the following link: <https://data.medicare.gov/data/archives/hospital-compare>. This list had a total of 4,806 hospitals. Of these, 3,488 were assigned ratings 1 through 5, and 1318 hospitals did not have any ratings.

¹¹⁵ Scott et al. (2000) too excluded psychiatric hospitals in their analysis of hospitals in the San Francisco Bay Area because they operate under different policies and functionally differ from acute care and critical access hospitals.

General Information”¹¹⁶ that has data on ownership of hospitals does not provide enough information to distinguish hospitals. This particular CMS dataset lists only 69 POHs, and the remaining POHs are identified in the “Proprietary” category. Therefore, deleting known POHs (listed in the PHA list) from the January 2018 HCAHPS survey dataset seemed like a good strategy to reduce *sampling frame error* (McNabb, 2002, p. 121) before sampling the remaining hospitals. After removing the POHs, I drew a random sample of 250 hospitals. Table 5.1 lists the categories and frequencies of selected hospitals. From this list of 250, I retained 96 not-for-profit and 75 corporate-owned hospitals for analysis, and discarded the remaining hospitals. The American Hospital Association’s “Free Hospital Look-up”¹¹⁷ was the source for identifying ownership of these hospitals. (See Appendix – Section B for the list of selected hospitals.)

Not-for-profit hospitals (N)	Corporate-owned hospitals (N)	Government Hospitals (N)	Others (Children’s & Tribal) (N)	Total (N)
96	75	73	6	250

Table 4.1: Types and Numbers of Sampled Hospitals

4.3.1 Full and Restricted Samples

In total four datasets were created in SPSS, two each for January 2018 and for October 2017. For each time period, the first dataset (the “full” sample) included all hospitals, and the second (the “restricted” sample) only general service POHs along with other general service corporate-owned and NFP hospitals. Distinguishing between specialty and general service POHs for analysis of quality is useful for detecting potential quality related differences between physician-owned hospitals. If such differences do appear, the evidence could inform future policy considerations about section 6001 of the ACA. No corporate-owned hospital appeared to

¹¹⁶ <https://data.medicare.gov/Hospital-Compare/Hospital-General-Information/xubh-q36u>

¹¹⁷ The American Hospital Association’s “Free Hospital Look-up”

be a specialty hospital, and only one NFP was listed as a specialty hospital. The remaining NFP hospitals were general medical service hospitals, falling into two main subcategories, acute care or critical access. The lone specialty NFP hospital was removed from the restricted sample. (See Table 4.2)

Although in both time periods the hospitals in the samples remain the same, the patients responding to the surveys differed; looking at two time periods gives an additional opportunity to analyze provider practices from the perspective of different patients. Even though the two periods selected (January 2018 and October 2017) are separated by three months, consistency in patient satisfaction and outcomes add at least incrementally to understanding quality of care in for-profit and not-for-profit hospitals through commonalities between two groups of patients.

Type of Hospitals	Full Sample (N)	Restricted Sample (N)
POH	100	50
Corp.	75	75
NFPs	96	95
Total	271	220

Table 4.2: Hospitals and Numbers in the Final Sample

4.3.2 HCHAPS Summary Ratings

Of the hospitals sampled, the HCAHPS summary ratings show differences in patients' assessments of POHs. Table 4.3 shows modes of HCAHPS summary ratings of all hospital types in the sample. Modes of summary ratings provide a rough estimate of quality of care that is most likely perceived by patients in different hospitals. For example, ratings for POHs change from the full sample to the restricted sample in the 2018 data from 5 Star to 3 Star. The 2017 data show patients in hospitals in the restricted sample perceived similar quality of care in POHs and

NFP hospitals. In the full sample, however, higher ratings of POHs indicate better quality of care than in NFP hospitals. Corporate-owned hospitals had the lowest Star ratings in both time periods.

Ownership Category	Summary Ratings, 2018 – Full Sample	Summary Ratings, 2018 - Restricted Sample	Summary Ratings, 2017 – Full Sample	Summary Ratings, 2017 – Restricted Sample
POH	5	3	5	4
Corp.	2/3	2/3	2/3	2/3
NFP	4	4	4	4

Table 4.3: HCAHPS summary ratings: Modes

4.4 DATA

After drawing the sample, I created a new MS Excel file that listed all sampled hospitals. The patient satisfaction data were downloaded from the HCAHPS hospital level survey dataset and added to this file. For data on patient outcomes, I used other publicly available Medicare datasets. Data on 30-day readmissions for the six conditions and hospital wide unplanned readmissions are available at “Unplanned Hospital Visits – Hospital”.¹¹⁸ CMS data¹¹⁹ on

¹¹⁸ <https://data.medicare.gov/Hospital-Compare/Unplanned-Hospital-Visits-Hospital/632h-zaca>. This data set includes data for both readmissions-related measures. For example, 30-day readmissions for AMI, HF, PN, Hip & Knee replacement, COPD, CABG (READM_30_AMI, READM_30_CABG, READM_30_COPD, READM_30_HF, READM_30_HIP_KNEE, READM_30_PN), and 30-day unplanned hospital-wide readmissions (READM_30_HOSP_WIDE). CMS data¹¹⁸ on mortality rates for AMI, HF and PN (MORT_30_AMI, MORT_30_HF, MORT_30_PN), and patient safety (PSI_90_SAFETY) are from the “Complications and Deaths – Hospital” dataset.

¹¹⁹ CMS datasets links given here are for the current quarter data. January 2018 and October 2017 data are now archived, and available via CMS’ archived datasets link (<https://data.medicare.gov/data/archives/hospital-compare>). When January 2018 and October 2017 data were “current”, they were available through same dataset links as mentioned with each dataset in this study. In July 2018 the direct links to CMS datasets show data that CMS released in May 2018.

mortality rates for AMI, HF and PN (MORT_30_AMI, MORT_30_HF, MORT_30_PN), and on patient safety (PSI_90_SAFETY) are from the “Complications and Deaths – Hospital” dataset.¹²⁰

I collected additional data for each selected hospital on the timeliness of care from the “Timely and Effective Care – Hospital” dataset¹²¹; costs incurred by patients for AMI, HF, PN and Hip & Knee replacement from “Payment and value of care - Hospital”¹²²; and Medicare expenditures on each beneficiary from the “Hospital Value-Based Purchasing (HVBP) – Efficiency Scores” dataset.¹²³ Data on hospital medical profiles (surgical, or general service), size (number of beds), staffing (personnel), admissions, and hospital’s teaching and network affiliations were obtained from the AHA’s “Free Hospital Look-up”. Data on average length of stay, number of Medicare inpatients, and Medicare Case-Mix Index were collected from the American Hospital Directory’s free hospital profiles.¹²⁴

All data were entered in an MS Excel file, on separate sheets for January 2018 and October 2017 quarters. I also created separate sheets for general service POHs and other general service hospitals (corporate-owned and not-for-profit).

4.5 ANALYZING THE DATA

Because the hospitals in the sample are located nationwide, and because one of the objectives was to identify hospitals that might be performing worse than the national average, I examined the differences in hospital specific practices from their corresponding national averages. For example, for patients’ perception that “Doctors “always” communicated well,”¹²⁵ I

¹²⁰ <https://data.medicare.gov/Hospital-Compare/Complications-and-Deaths-Hospital/ynj2-r877>

¹²¹ <https://data.medicare.gov/Hospital-Compare/Timely-and-Effective-Care-Hospital/yv7e-xc69>

¹²² <https://data.medicare.gov/Hospital-Compare/Payment-and-value-of-care-Hospital/c7us-v4mf/data>

¹²³ <https://data.medicare.gov/Hospital-Compare/Hospital-Value-Based-Purchasing-HVBP-Efficiency-Sc/su9h-3pvj/data>

¹²⁴ https://www.ahd.com/free_profile.php?hcfa_id=9a00ca1fc1ed43796472e33706abc536&ek=78671a07285db0646cb0c0c1b7031b67

¹²⁵ <https://data.medicare.gov/Hospital-Compare/Patient-survey-HCAHPS-National/99ue-w85f/data>

measured the difference between the percentages of patients reporting their doctors always communicated well for each hospital from the national average rate of 82%.¹²⁶

I created new variables for these differences for each practice, patient satisfaction and outcomes. I then converted the Excel files into SPSS. In SPSS, I recoded practice and patient satisfaction measures into new interval level variables, which measured the percentage differences between hospital specific patient perception rates, patient satisfaction levels, and national rates. I created equidistant intervals for all recoded variables after running their frequency distributions.

After readying the datasets for further analyses, I used summary statistics for describing structural characteristics of hospitals (for example, size, personnel, capacity, CMI, total patients admitted, Medicare inpatients, length of stay, and admissions capacity), timeliness of care, and cost of care. Then, I compared the means of provider practices, environmental factors, patient satisfaction, and outcome measures among hospitals, and checked for the significance of variations in means using ANOVA.¹²⁷ Hypotheses were then tested using regression analyses.

First, I created dummy variables for the three hospital types and regressed patient satisfaction using dummy variables only (with NFP hospitals as the omitted category). Next, for each sample and each dependent variable, multivariate regression analyses examined possible mediating effects of providers' practices on patient satisfaction and on outcomes. To reduce multicollinearity due to correlations between providers' practices,¹²⁸ I centered variables around their mean to improve regression coefficients (see, e.g., Afshartous & Preston, 2011; Iacobucci, Schneider, Popovich, & Bakamitsos, 2017).

¹²⁶ The national average rates are also publicly available via CMS's "Hospital Compare" and also in their national level datasets

¹²⁷ Bivariate correlations were calculated for all providers' practices, patients' perceptions and outcomes for all hospital categories (Appendix – Section D).

¹²⁸ <https://www.hcahponline.org/en/summary-analyses/>. HCAHPS Patient-level correlations table: www.hcahponline.org/globalassets/hcahps/summary--analyses/correlations/report_april_2018_corr_pain_removed.pdf.

Patient satisfaction (H1a and H1b) and outcomes (H2a and H2b) were then regressed on hospital ownership, providers' practices and with controls. Similar regression analyses were carried out to test overall quality (H3). The next chapter turns to the results of examining the hypotheses about associations between hospital ownership and quality of care.

CHAPTER 5: FINDINGS

Previous chapters introduced concerns about variation in the quality of patient care in the United States and about the impact of market-based incentives and influences. Less clear are the effects of hospital ownership and practices. This chapter discusses the findings of examining hypotheses about the quality of patient care.

The chapter first describes the structural characteristics of hospitals (e.g., number of beds, personnel, capacity, case mix, number of patients, average length of stay, and admissions capacity), the timeliness of care and costs of care. The chapter then turns to the hypotheses introduced in the previous chapter.

5.1 DESCRIPTIVE INFORMATION

5.1.1 Structural Characteristics

Table 5.1 provides information on the structural characteristics of the hospitals in the sample. According to the CMS, the Case Mix Index (CMI) of a hospital taps the diversity and complexity of patients served by a hospital¹²⁹. A higher CMI means, on average, that a hospital is treating more diverse, complex patients that need more resources.¹³⁰ CMIs for POHs are slightly higher than those for other hospital forms.

In general, the cost of care is higher at for-profit hospitals than at not-for-profit hospitals. Not-for-profit hospitals also admit more Medicare patients than do other types of hospital. This means they likely receive more Medicare reimbursements, and their cost per patient might be lower than other hospitals despite having a lower CMI than POHs. This suggests that not-for-

¹²⁹ <https://healthdata.gov/dataset/case-mix-index>

¹³⁰ <http://www.healthandhospitalcommission.com/docs/May26Meeting/CasemixIndexDefintion.pdf>. Mendez, Harrington, Christenson, & Spellberg (2014) argue that although CMI “has become a standard indicator of hospital disease severity in the United States and internationally”, its original purpose was related to hospital payment and not for tracking disease severity. They suggest using CMI with caution “to adjust for disease severity” among hospitals (p. 28).

profits may be making more net revenues than other hospitals. Table 5.2 shows differences between types of hospitals are statistically significant for personnel, capacity and length of stay in the restricted sample.

Means Full Sample (Restricted Sample)			
Ownership Category	POH	Corp.	NFP
Number of Beds	79.28 (119.22)	220.19	175.95 (176.61)
Total Personnel	389.9 (579.51)	741.51	1161.68 (1165.14)
Capacity	6.6804 (6.8015)	4.608	6.7947 (6.7669)
Case Mix Index	1.9165 (1.7155)	1.3875	1.416 (1.4023)
Total Patients Admitted	3345.63 (5014.73)	9494.53	8063.45 (8108.16)
Medicare Inpatients	1125.91 (1437.53)	2684.66	2741.77 (2749.61)
Inpatient Stay (Days)	3.3285 (3.8238)	4.8472	4.3311 (4.3232)
Admissions Capacity	42.15 (41.1009)	44.5444	40.0748 (40.0396)

Table 5.1: Structural characteristics of sampled hospitals

ANOVA Table - Structural Features, Full Sample (Restricted Sample)							
			Sum of Squares	df	Mean Square	F	Sig.
Number of Beds * Ownership Category	Between Groups	(Combined)	883980.757 (301028.530)	2 (2)	441990.378 (150514.265)	7.741 (2.229)	.001 (.110)
	Within Groups		14788346.74 (14518895.1)	259 (215)	57097.864 (67529.745)		
	Total		15672327.5 (14819923.6)	261 (217)			
Total Personnel * Own. Cate.	Between Groups	(Combined)	27926192.09 (13470733.5)	2 (2)	13963096.05 (6735366.74)	11.897 (4.853)	.000 (.009)
	Within Groups		302803661.1 (297019806)	258 (214)	1173657.601 (1387943.02)		
	Total		330729853.2 (310490539)	260 (216)			
Capacity * Own. Cate.	Between Groups	(Combined)	241.25 (229.825)	2(2)	120.625 (114.913)	10.446 (9.154)	.000 (.000)
	Within Groups		2979.357 (2686.300)	258 (214)	11.548 (12.553)		
	Total		3220.608 (2916.125)	260 (216)			
Total Patients Admitted * Own. Cate.	Between Groups	(Combined)	1786720398 (600065208)	2 (2)	893360199 (300032604)	9.082 (2.584)	.000 (.078)
	Within Groups		25379511990 (2.485E+10)	258 (214)	98370201.52 (116112064)		
	Total		27166232390 (2.545E+10)	260 (216)			
Length of stay * Own. Cate.	Between Groups	(Combined)	106. 519 (32.13)	2 (2)	53.26 (16.065)	20.192 (7.469)	.000 (.001)
	Within Groups		706.885 (466.723)	268 (217)	2.638 (2.151)		
	Total		813.404 (498.853)	270 (219)			
Admissions Capacity * Own. Cate.	Between Groups	(Combined)	831.855 (872.562)	2 (2)	415.927 (436.281)	1.078 (1.241)	0.342 (.291)
	Within Groups		99557.576 (75250.794)	258 (214)	385.882 (351.639)		
	Total		100389.43 (76123.356)	260 (216)			

Table 5.2: ANOVA Table - Structural Characteristics

5.1.2 Timeliness of Care

In addition to structural characteristics, timeliness of care might inform understanding of efficiency variations among hospitals. Table 5.3 indicates that POHs and not-for-profit hospitals are better than corporate-owned hospitals on the timeliness of care dimension. ED1 is the median time that patients spend in an emergency department, measuring the difference between arrival and departure time. ED2 taps the time taken to decide to admit patients after they have departed an outpatient department. Both ED1 and ED2 are calculated in minutes and apply only to patients who visit an outpatient department or the emergency room and are eventually admitted to the hospital, i.e., they become inpatients.¹³¹ On their own, ED1 and ED2 may not tell one much, since each case is different, but lower ED1 and ED2 times may indicate greater hospital efficiency. The lower capacity of corporate-owned hospitals may be a factor in their relatively lower quality in providing timely care to patients in emergency or outpatient departments, as they have more beds but fewer personnel.¹³²

Timeliness	2018 - Full Sample Mean (Restricted Sample)			2017 - Full Sample Mean (Restricted Sample)		
	POH	Corp.	NFP	POH	Corp.	NFP
ED1	-34.33 (-13.55)	10.2	-4.1 (-4.1)	-30.04 (-11.32)	7.8	-2.54
ED2	-5.87 (1.62)	8.3	-0.1 (-.1)	-4.59 (1.90)	8.9	1.33

Table 5.3: Emergency department timeliness of care by hospital type

¹³¹ https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/downloads/EH_EDThroughputStratificationTable.pdf

¹³² ED1 = Median Time from Emergency Department (ED) Arrival to ED Departure for Admitted ED Patients; (hospital-national avg., 280 minutes). ED2 = Admit Decision Time to ED Departure Time for Admitted Patients; (hospital-national avg., 100 minutes). National rates are available on CMS's Hospital Compare website.

5.1.3 Costs of Care

The adjusted cost per patient (average inpatient charges/CMI) for POHs is comparable to that in not-for-profit hospitals when all physician-owned hospitals are examined but substantially higher when specialty and surgical POHs are excluded from the analysis (Table 5.4). Average adjusted costs are highest for corporate-owned hospitals, which suggests they may be providing relatively lower value of care to patients.

In terms of overall costs incurred by Medicare from claims hospitals submit for-profit hospitals, in general, provide costlier care to patients than not-for-profit hospitals. Yet, there is not much difference in the costs of care between POHs and corporate-owned hospitals. In fact, in the restricted sample general services POHs evidently charged the highest prices for medical services provided to patients, costs that Medicare eventually pays. The higher MSPB rates for POHs raise questions about the Medicare costs savings that PHA argued that POHs would generate in their letters to the U.S. Congress.

The higher prices POHs charge may be related to two other features relevant to the POH organization form: scale and the predictive capacity of medical practices and technology. Although medical technology (both hardware and software) has improved notably, variations in practices exist, and considerable room remains for improving predictive capacities of technology (see, e.g., Mick & Shay, 2014; Ginsburg, 2000). Some believe that because of professional autonomy and expertise, physicians in POHs do better cost benefit analysis for purchasing technology, and POHs lead other hospitals in acquiring cutting-edge technology.¹³³

A closer analysis of costs related to AMI, HF, PN, and Hip & Knee replacements reveals additional details about the value of care. (See Table 5.5.) In general, POHs have higher costs for

¹³³ <http://www.arksurgicalhospital.com/why-you-should-choose-a-physician-owned-hospital-for-your-surgical-procedures/>

AMI, HF and PN than not-for-profit hospitals do. It is also cheaper for patients to get hips and knees replaced in not-for-profit hospitals than at for-profit hospitals. Corporate-owned-hospitals are more cost effective for HF and PN patients than are POHs or not-for-profit hospitals.

Cost	2018 - Full Sample (Restricted Sample)			2017 - Full Sample (Restricted Sample)		
Ownership Category	Avg. Inpatient Charges (\$)	Avg. Adjusted Charges (\$)	MSPB	Avg. Inpatient Charges (\$)	Avg. Adjusted Charges (\$)	MSPB
POH	52313.21 (54225.59)	27824.26 (32024.11)	1.0073 (1.0014)	52313.21 (54225.59)	27824.2587 (32024.11)	0.998 (1.0176)
Corp.	55510.54	40111.59	1.0132	55510.54	40111.5919	1.0138
NFP	36720.24 (35846.74)	23976.89 (23762.40)	0.9835 (0.9833)	36720.24 (35846.74)	23976.8858 (23762.40)	0.9826 (.9820)

Table 5.4: Cost of Care - Inpatient Charges and MSPB

Adjusted Inpatient Charges = Average Inpatient Charges / CMI

MSPB = Medicare Spending Per Beneficiary

Ownership Category	Cost difference (AMI)	Cost difference (HF)	Cost difference (PN)	Cost difference (Hip & Knee replacement)
POH	393.74 (444.54)	636 (534)	907.72 (736.03)	-358.43 (323.9)
Corp.	588.53	351.42	465.62	703.5
NFP	495.8 (462.57)	362.42 (321.46)	190.11 (189.87)	-704.12 (-704.12)

Table 5.5: Value of care differences among hospitals for AMI, HF, PN, and Hip & Knee conditions¹³⁴

Average national cost for AMI (Acute Myocardial Infarction or heart attack) patients = \$23,119

Average national cost for HF (heart failure) patients = \$16,190

Average national cost for PN (pneumonia) patients = \$17,026

Average national cost for Hip & Knee replacement = \$22,567

(National rates are available on CMS's Hospital Compare website)

Cost difference = hospital's cost - national average cost

5.1.4 Providers' Practices

NFP hospitals generally appear to have the best patient-centric practices compared to corporate-owned hospitals and POHs. (See Tables 5.6a, b.) POHs are better than NFP hospitals only on hospitals' environmental factors, specifically in managing noise levels at night.

Corporate-owned hospitals have the worst patient-centric practices when compared with POHs and NFP hospitals. Tables 5.7a, b show statistically significant differences in providers' practices among hospitals.

¹³⁴ Costs in brackets are national average costs for treatments of AMI, HF, PN and Hip & Knee replacements. These are also publicly available via CMS national level datasets.

2018 - Full Sample Mean Differences* (Restricted Sample)

Ownership Category	Doctor Communication	Nurse Comm.	Medication explanation	Help as soon as wanted	Pain well controlled	Clean rooms and bathrooms	Quiet rooms at night	Recovery information given	Strong understanding of recov. info.
POH	3.89 (3.40)	4.11 (3.47)	4.26 (3.53)	5.63 (4.64)	4.23 (3.62)	5.2 (4.53)	6.19 (5.30)	3.01 (2.66)	5.58 (4.70)
Corp.	3.08	2.96	2.92	3.55	3.04	3.28	4.01	2.44	3.63
NFP	3.48 (3.48)	3.75 (3.75)	3.64 (3.63)	4.43 (4.43)	3.51 (3.50)	4.66 (4.67)	4.04 (4.07)	2.71 (2.69)	4.76 (4.75)

Table 5.6a: Mean differences in providers' practices, 2018

2017 - Full Sample Mean Differences* (Restricted Sample)

Ownership Category	Doctor Comm.	Nurse Comm.	Medication explanation	Help as soon as wanted	Pain well controlled	Clean rooms and bathrooms	Quiet rooms at night	Recov. info. given	Strong understanding of recov. info.
POH	3.9 (3.47)	4.06 (3.36)	4.36 (3.55)	5.51 (4.36)	4.07 (3.45)	5.1 (4.34)	6.26 (5.36)	2.98 (2.62)	5.66 (4.64)
Corp.	3.14	3.03	2.92	3.51	3.07	3.42	4.14	2.38	3.64
NFP	3.53 (3.53)	3.66 (3.66)	3.67 (3.66)	4.49 (4.49)	3.57 (3.57)	4.61 (4.62)	4.17 (4.18)	2.69 (2.68)	4.76 (4.75)

Table 5.6b: Mean differences in providers' practices, 2017

* Differences of hospital specific rates from national average rates for each practice

ANOVA Table - Practices, Full Sample (Restricted Sample) – 2018							
			Sum of Squares	df	Mean Square	F	Sig.
Doctor Comm. * Ownership Category	B/w Groups	(Combined)	25.382 (6.442)	2 (2)	12.691 (3.221)	11.841(3.257)	.000 (.041)
	Within Grps		262.581 (200.767)	245 (203)	1.072 (.989)		
	Total		287.964 (207.209)	247 (205)			
Nurse Comm. * Own. Cate.	B/w Grps.	(Combined)	53.879 (24.852)	2 (2)	26.939 (12.426)	22.427(12.181)	.000 (.000)
	Within Grps.		294.299 (207.075)	245 (203)	1.201 (1.020)		
	Total		348.177 (231.927)	247 (205)			
Medication Expln. * Own. Cate.	B/w Grps.	(Combined)	71.201 (21.597)	2 (2)	35.601 (10.799)	19.255 (7.410)	.000 (.001)
	Within Grps.		452.976 (295.820)	245 (203)	1.849 (1.457)		
	Total		524.177 (317.417)	247 (205)			
Pain Control * Own. Cate.	B/w Grps.	(Combined)	57.296 (11.982)	2 (2)	28.648 (5.991)	22.599 (5.847)	.000 (.003)
	Within Grps.		310.575 (207.980)	245 (203)	1.268 (1.025)		
	Total		367.871 (219.961)	247 (205)			
Help Soon * Own. Cate.	B/w Grps.	(Combined)	173.502 (43.689)	2 (2)	86.751 (21.845)	29.196 (9.355)	.000 (.000)
	Within Grps.		727.978 (474.019)	245 (203)	2.971 (2.335)		
	Total		901.48 (517.709)	247 (205)			
Clean Room & Bath. * Own. Cate.	B/w Grps.	(Combined)	151.025 (84.202)	2 (2)	75.512 (42.101)	34.224 (19.991)	.000 (.000)
	Within Grps.		540.572 (427.512)	245 (203)	2.206 (2.106)		
	Total		691.597 (511.714)	247 (205)			
Quiet Room * Own. Cate.	B/w Grps.	(Combined)	265.397 (57.147)	2 (2)	132.699 (28.573)	38.046 (9.086)	.000 (.000)
	Within Grps.		854.522 (638.407)	245 (203)	3.488 (3.145)		
	Total		1119.919 (695.553)	247 (205)			
Recovery Info. * Ownership Category	B/w Grps.	(Combined)	13.106 (2.824)	2 (2)	6.553 (1.412)	10.932 (2.499)	.000 (.085)
	Within Grps.		146.858 (114.734)	245 (203)	0.599 (.565)		
	Total		159.964 (117.558)	247 (205)			
Strong Understanding * Own. Cate.	B/w Grps.	(Combined)	148.932 (56.322)	2 (2)	74.466 (28.161)	33.663 (15.585)	.000 (.000)
	Within Grps.		541.967 (366.809)	245 (203)	2.212 (1.807)		
	Total		690.899 (423.131)	247 (205)			

Table 5.7a: Variance between providers' practices in hospitals, 2018

ANOVA Table - Full Sample (Restricted Sample) - 2017							
			Sum of Squares	df	Mean Square	F	Sig.
Doctor Comm. * Own. Cate	B/w Grps.	(Combined)	22.831 (6.475)	2	11.415 (3.237)	10.651(3.286)	.000 (.039)
	Within Grps.		530.372 (199.991)	245 (203)	1.072 (0.985)		
	Total		691.996 (206.466)	247 (205)			
Nurse Comm. * Own. Cate.	B/w Grps.	(Combined)	42.176 (15.51)	2	21.088 (7.755)	18.164(8.354)	.000 (.000)
	Within Grps.		284.433 (188.451)	245 (203)	1.161 (0.928)		
	Total		326.609 (203.961)	247 (205)			
Medication Expln. * Own. Cate.	B/w Grps.	(Combined)	83.012 (23.446)	2	41.506 (11.723)	24.368(8.789)	.000 (.000)
	Within Grps.		417.307 (270.772)	245 (203)	1.703 (1.334)		
	Total		500.319 (294.218)	247 (205)			
Pain Control * Own. Cate.	B/w Grps.	(Combined)	158.871 (41.382)	2	79.436 (20.691)	25.609(8.813)	.000 (.000)
	Within Grps.		759.963 (476.584)	245 (203)	3.102 (2.348)		
	Total		918.835 (517.966)	247 (205)			
Help Soon * Own. Cate.	B/w Grps.	(Combined)	39.645 (10.427)	2	19.823 (5.213)	16.756(5.358)	.000 (.005)
	Within Grps.		289.835 (197.534)	245 (203)	1.183 (0.973)		
	Total		329.48 (207.961)	247 (205)			
Clean Room & Bath. * Own. Cate.	B/w Grps.	(Combined)	116.65 (59.658)	2	58.325 (29.829)	23.031(12.146)	.000 (.000)
	Within Grps.		620.443 (498.536)	245 (203)	2.532 (2.456)		
	Total		737.093 (558.194)	247 (205)			
Quiet Room * Own. Cate.	B/w Grps.	(Combined)	251.634 (52.16)	2	125.817 (26.08)	33.215(7.472)	.000 (.001)
	Within Grps.		928.043 (708.52)	245 (203)	3.788 (3.49)		
	Total		1179.677 (760.68)	247 (205)			
Recovery Info. * Ownership Category	B/w Grps.	(Combined)	14.374 (3.831)	2	7.187 (1.916)	12.44(3.635)	.000 (.028)
	Within Grps.		141.545 (106.97)	245 (203)	0.578 (0.527)		
	Total		155.919 (110.801)	247 (205)			
Strong Understanding * Own. Cate.	B/w Grps.	(Combined)	161.623 (53.989)	2	80.812 (26.995)	37.33(15.311)	.000 (.000)
	Within Grps.		530.372 (357.899)	245 (203)	2.165 (1.763)		
	Total		691.996 (411.888)	247 (205)			

Table 5.7b: Variance between providers' practices in hospitals, 2017

5.1.5 Patient satisfaction and outcomes

Differences among hospitals also exist in patient satisfaction and outcomes. NFP hospitals have lower complications and mortality rates than POHs, and corporate-owned hospitals have the highest rates of readmissions, complications, and patient mortality, and the lowest rates of patient satisfaction. (See Tables 5.8a, b.) Both indicators of patient satisfaction (patients rating a hospital 9 or 10 and definitely recommending a hospital) are lowest in corporate-owned hospitals.

The mean differences in providers' practices (table 5.6b) suggest variation in practices in specialty and general service POHs. Providers' practices seem to be better in specialty and surgical POHs compared to general service POHs. Among general service POHs and NFP hospitals, for example, POHs have lower means than NFP hospitals for most practices, except quiet rooms at night (5.36 vs. 4.18, in 2017; and 5.30 vs. 4.07 in 2018). 2018 data also show POHs have relatively higher means than NFP hospitals for controlling patients' pain (3.62 vs. 3.50) and providing help as soon as wanted (4.64 vs. 4.43).

Differences in quality indicators also exist between specialty and general service POHs. Tables 5.8a, b and 5.9a, b show differences in both samples. For example, unplanned readmissions, excess readmissions, serious complications and mortality are lower in NFP hospitals than in general service POHs in both time periods. In the full sample, however, POHs do better than NFP hospitals. On the quality perception dimension, the results were inconsistent. For example, general service POHs performed better than NFP hospitals in 2018 but not in 2017.

2018 - Full Sample Mean Differences* (Restricted Sample)						
Ownership Category	Patients rating hospital 9 or 10	Definitely recommend	Unplanned Readmissions	Excess Readmissions	Serious Complications	Mortality
POH	5.85 (4.85)	6 (4.89)	-0.709 (-.048)	0.9794 (1.0268)	-0.0518 (-.0098)	0.0588 (.0893)
Corp.	3.42	3.48	0.49	1.0262	0.0132	0.5435
NFP	4.7 (4.69)	4.87 (4.84)	-0.057 (-.057)	0.9845 (.9839)	-0.0152 (-.0147)	-0.7438 (-.07063)

Table 5.8a: Quality of care differences, 2018

2017 - Full Sample Mean Differences* (Restricted Sample)						
Ownership Category	Patients rating hospital 9 or 10	Definitely recommend	Unplanned Readmissions	Excess Readmissions	Serious Complications	Mortality
POH	5.76 (4.68)	5.9 (4.7)	-0.1941 (-.0478)	0.9424 (.9955)	-0.0518 (-.0098)	0.0588 (.0893)
Corp.	3.47	3.53	0.4890	1.0277	0.0132	0.5435
NFP	4.75 (4.74)	4.85 (4.83)	-0.0567 (-.0565)	1.0004 (1.0001)	-0.0152 (-.0147)	-0.7438 (-.7063)

Table 5.8b: Quality of care differences, 2017

* Differences of hospital specific percent rates from national average rates for each indicator
 Excess Readmissions = average of 30-day readmissions rates for six conditions (AMI, CABG, COPD, HF, PN, Hip & Knee replacement).
 Mortality = sum of mortality rates for AMI, HF, and PN.
 Unplanned readmissions: 30-day hospital-wide unplanned readmissions

ANOVA Table - Full Sample (Restricted Sample) - 2018							
			Sum of Squares	df	Mean Square	F	Sig.
Patients rating hospital 9 or 10 * Own. Cate.	Between Groups	(Combined)	232.21 (82.117)	2 (2)	116.105 (41.059)	42.364 (17.355)	.000 (.000)
	Within Groups		668.722 (477.902)	244 (202)	2.741 (2.366)		
	Total		900.931 (560.020)	246 (204)			
Definitely recommending * Own. Cate.	Between Groups	(Combined)	249.771 (88.745)	2 (2)	124.885 (44.372)	35.908 (14.208)	.000 (.000)
	Within Groups		852.1 (633.959)	245 (203)	3.478 (3.123)		
	Total		1101.871 (722.704)	247 (205)			
Unplanned Readmissions * Ownership	Between Groups	(Combined)	57.707 (13.999)	2 (2)	28.853 (7.000)	8.755 (11.108)	.000 (.000)
	Within Groups		823.944 (130.444)	250 (207)	3.296 (.630)		
	Total		881.651 (144.443)	252 (209)			
Excess Readmissions * Ownership	Between Groups	(Combined)	0.092 (.079)	2 (2)	0.046 (.039)	2.713 (3.545)	0.069 (.031)
	Within Groups		3.652 (1.972)	216 (178)	0.017 (.011)		
	Total		3.744 (2.051)	218 (180)			
Serious Complications * Ownership	Between Groups	(Combined)	0.164 (.029)	2 (2)	0.082 (.015)	3.808 (.634)	0.024 (.532)
	Within Groups		4.844 (4.235)	225 (183)	0.022 (.023)		
	Total		5.008 (4.264)	227 (185)			
Mortality * Ownership	Between Groups	(Combined)	46.16 (43.133)	2 (2)	23.08 (21.567)	1.686 (1.526)	0.189 (.221)
	Within Groups		1930.353 (1894.097)	141 (134)	13.69 (14.135)		
	Total		1976.513 (1937.231)	143 (136)			

Table 5.9a: Variance in quality of care indicators, 2018

ANOVA Table - Full Sample (Restricted Sample) - 2017							
			Sum of Squares	df	Mean Square	F	Sig.
Patients rating hospital 9 or 10 * Ownership Category	Between Groups	(Combined)	207.531 (72.593)	2	103.765 (36.297)	36.192 (15.127)	.000 (.000)
	Within Groups		702.433 (487.077)	245 (203)	2.867 (2.399)		
	Total		909.964 (559.67)	247 (205)			
Definitely recommending a hospital * Ownership Category	Between Groups	(Combined)	222.445 (77.464)	2	111.222 (38.732)	33.106 (12.927)	.000 (.000)
	Within Groups		823.104 (608.231)	245 (203)	3.36 (2.996)		
	Total		1045.548 (685.694)	247 (205)			
Unplanned Readmissions * Ownership Category	Between Groups	(Combined)	20.194 (14.062)	2	10.097 (7.031)	15.177 (11.02)	.000 (.000)
	Within Groups		164.986 (132.712)	248 (208)	0.665 (0.638)		
	Total		185.18 (146.774)	250 (210)			
Excess Readmissions * Ownership Category	Between Groups	(Combined)	0.285 (.037)	2	0.143 (0.018)	8.603 (4.218)	.000 (.016)
	Within Groups		3.595 (.766)	217 (177)	0.017 (0.004)		
	Total		3.88 (.803)	219 (179)			
Serious Complications * Ownership Category	Between Groups	(Combined)	0.164 (.029)	2	0.082 (0.015)	3.808 (0.634)	.024 (.532)
	Within Groups		4.844 (4.235)	225 (183)	0.022 (0.023)		
	Total		5.008 (4.264)	227 (185)			
Mortality * Ownership Category	Between Groups	(Combined)	46.16 (43.133)	2	23.08 (21.567)	1.686 (1.526)	.189 (.221)
	Within Groups		1930.353 (1894.097)	141 (134)	13.69 (14.135)		
	Total		1976.513 (1937.231)	143 (136)			

Table 5.9b: Variance in quality of care indicators, 2017

5.2 TESTING OF HYPOTHESES

Hypothesis 1

The first set of hypotheses focused on hospital ownership, providers' practices and patient satisfaction. H1a predicts patients receiving medical care in POHs will report greatest patient satisfaction; patient satisfaction will be intermediate in corporate-owned hospitals and lowest in NFP hospitals. H1b predicts provider practices will be associated with the greatest reported patient satisfaction for patients receiving medical care in POHs, intermediate patient satisfaction in corporate-owned hospitals, and lowest patient satisfaction in NFP hospitals.

Model 1 (Tables 5.10a-d) shows regressions with type of hospital as the primary independent variable and patient satisfaction as the dependent variable (tapped here by patients definitely recommending a hospital). In the full sample (Tables 5.10a, c), Model 1 in both time periods shows POHs with significantly higher patient satisfaction than NFP hospitals, and corporate-owned hospitals have significantly lower patient satisfaction than NFP hospitals.¹³⁵ However, in the restricted sample (Tables 5.10b, d) effects of physician ownership on patient satisfaction disappear. Model 1 in the restricted sample shows only significant lower patient satisfaction in corporate-owned hospitals. In the restricted sample POHs do not seem to have higher patient satisfaction than NFP hospitals. Corporate-owned hospitals had significantly lower patient satisfaction than NFP hospitals in both samples in both time periods.

H1b tests mediating effects of providers' practices on patient satisfaction in hospitals. That is, adding practices (possible mediators) is expected to weaken or eliminate direct relationships between type of hospital and patient satisfaction. H1b predicts associations between providers' practices, patient satisfaction and hospital types. Model 2 in tables 5.10a, c (full sample 2018, 2017) suggest ownership effects are not significantly related to patient satisfaction;

¹³⁵ The excluded category is NFP hospitals.

instead specific practices like controlling patients' pain levels and ensuring they have strong understanding of recovery information are positively and significantly related to patient satisfaction. It is true in the restricted sample as well.

After introducing controls (Model 3, tables 5.10a-d), ownership effects still are not significantly related to patient satisfaction. In addition to practices like controlling patients' pain and understanding of recovery information, the quality nurse-patient communication is significantly associated with patient satisfaction in the full and restricted samples.

Statistically significant controls indicate patients prefer shorter inpatient stays; more efficient hospitals (as admissions capacity suggests, i.e., hospitals that might have higher number of patients admitted per bed); hospitals that handle complex patients; and those with teaching affiliations. Hospitals' affiliations with a system or network of other hospitals do are not associated with patient satisfaction.

In general, these results indicate hospitals handling more complex patients, having more capacity to admit patients, and providing shorter stays are more likely to have greater numbers of satisfied patients.

Hypothesis 2

H2a predicted that patients receiving medical care in POHs would have the best outcomes; patient outcomes would be intermediate in corporate-owned hospitals, and lowest in NFP hospitals. Here, three indicators for outcomes are used: 30-day hospital-wide unplanned readmissions, serious complications, and patient mortality.

Model 1 in table 5.11a-d (full sample, 2018) shows unplanned readmissions are significantly lower in POHs, but readmissions are higher in corporate-owned hospitals in both samples at both time periods. However, the statistical significance of physician ownership for

reducing readmissions is not consistent. For serious complications, for-profit hospitals, in general, do not seem to have lower patient complications than NFP hospitals do. In both the full and restricted samples, the quality of care tapped by complications is comparable among hospital types. This also is the case for patient mortality in both samples and time periods. Physician ownership and for-profit hospitals do not have any lower patient mortality than NFP hospitals. (See tables 5.11a-d.)

H2b tests mediating effects of providers' practices on patient outcomes in hospitals. H2b predicts that providers' practices will be associated with the best patient outcomes for patients receiving medical care in POHs, intermediate in corporate-owned hospitals, and lowest in NFP hospitals. In the full sample (Models 2 and 3, tables 5.11e-1), regression results show physician ownership effects disappear for unplanned readmissions. For-profit corporate-owned hospitals have significantly higher readmissions than NFP hospitals in both samples and time periods.

In addition to corporate ownership of hospitals, practices like controlling patients' pain and strong understanding of recovery information also have significant relationships with unplanned readmissions. Regression results suggest paying attention to both practices may further reduce unplanned readmissions in hospitals. Among the controls, CMI and MSPB may impact unplanned readmissions. In the full sample in 2017, hospitals with higher CMI had lower readmissions, and lowering MSPB might in fact be related with reducing readmissions. The statistical significance of MSPB for readmissions indicates that NFP hospitals have lower unplanned readmissions than for-profit hospitals, as for-profits that usually have higher MSPB rates than NFP hospitals. The negative relationship between CMI and readmissions suggests that as hospitals capacity to handle more complex patients increases, their readmissions rates decline. Hospitals with teaching affiliations also have higher readmissions. (See table 5.11d.) The

reasons for this are not clear; higher readmissions may be because more readmissions create more research opportunities. If so, teaching hospitals might in fact have different readmissions-related policies than hospitals with no teaching affiliations. It also could reflect the more serious conditions of patients receiving treatment in such hospitals.

For serious complications, the results are inconclusive on ownership and practices in both samples. However, only in the restricted sample do the regression results suggest that hospitals' system affiliation and higher Medicare spending might suggest more complications. Similarly, for patient mortality, neither physician nor corporate ownership of hospitals is statistically significant after the mediating effects of practices are considered. However, hospitals with higher CMI and with teaching affiliations might have lower mortality rates than hospitals that have lower CMI and no teaching affiliation. Regression results for the restricted sample suggest providing help to patients as soon as wanted is significantly associated with reducing patient mortality (tables 5.11e-h).

Regression results for both samples in 2017 suggest higher mortality rates are associated with providing recovery information to patients, but not in 2018. This raises questions about the quality of recovery information shared with patients. From these data, one does not know how adequate or relevant the recovery information that was shared with patients was. Nonetheless, this might be one area that hospital managers and providers might need to focus on in order to reduce patient mortality (tables 5.11i-l).

Hypothesis 3

The third hypothesis predicts that patient satisfaction and outcomes will be more strongly and positively associated in POHs, of intermediate strength in corporate-owned hospitals, and weakest in NFP hospitals. In the full sample, Model 1 (tables 5.12a, c) shows statistically

significant ownership effects between NFP and corporate-owned hospitals, and corporate-owned hospitals have significantly lower patient satisfaction than NFP hospitals. Unplanned readmissions and mortality are associated with lower patient satisfaction. In the restricted sample (2018), physician ownership is associated with lower patient satisfaction compared to patient satisfaction in NFP hospitals. Unplanned readmissions and mortality also have significant negative relationships with patient satisfaction (tables 5.12b, d).

When considering providers' practices along with patient outcomes (Model 2, tables 5.12a-d), the regression results for both samples and time periods indicate mortality rates and strong understanding of recovery information have statistically significant relationships with patient satisfaction. Higher mortality rates are associated with lower patient satisfaction and better understanding of recovery information is related to higher levels of patient satisfaction.

In the full model (Model 3), the results suggest hospitals in which patients report higher levels of understanding of recovery information and those that admit more patients, handle complex patients and have shorter inpatient stays have higher levels of patient satisfaction. In the restricted sample, however, hospitals with higher CMI, shorter stays, and patients reporting strong understanding of recovery information have more satisfied patients.

5.3 SUMMARY OF FINDINGS

These findings suggest that the association between hospital ownership and patient satisfaction and outcomes weakens or disappears when providers' practices and controls are introduced, providing some evidence that provider practices are important mediating variables. Only in the case of the third hypothesis in the 2018 restricted sample when overall quality of care is examined, is physician ownership significantly associated with patient satisfaction; the relationship, however, is negative. Physician ownership is related with lower patient satisfaction

when analyzed with outcomes (see tables 5.12a-d). When overall quality is analyzed, it seems patient mortality, strong understanding of recovery information, CMI and inpatient stay duration seem to be significant factors affecting patient satisfaction, rather than the ownership of hospitals. Similarly, when only outcomes are examined, physician ownership does not seem to improve patient outcomes more than NFP ownership does. Among all hospital types, however, corporate-owned hospitals have significantly lower patient satisfaction and lower quality patient outcomes.

These results do not support the expectation that market oriented health care will be associated with higher quality care, tapped by higher patient satisfaction and better outcomes. The relatively lower patient satisfaction and outcomes for POHs in the restricted sample also suggest that data from surgical and specialty POHs strengthened the overall patient satisfaction and outcomes for POHs in the full sample.

The concluding chapter discusses the implications of these findings for policy, administration and organizational scholarship.

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	4.865** (.198)	4.863** (.144)	-0.385 (1.165)
POH	1.135** (.280)	0.263 (.219)	-0.121 (.23)
Corp.	-1.386** (.297)	-0.297 (.223)	-0.362 (.226)
Doctor Communication		-0.062 (.131)	0.121 (.148)
Nurse Communication		0.098 (.161)	0.264 (.173)
Medication Explanation		0.169 (.095)	-0.041 (.133)
Help As Soon As Wanted		-0.149 (.099)	-0.133 (.119)
Pain Control		0.306* (.122)	0.235 (.147)
Clean Rooms and Bathrooms		0.153 (.086)	0.126 (.091)
Quiet Rooms		0.05 (.062)	-0.029 (.065)
Recovery Information Given		0.238 (.124)	0.072 (.136)
Strong Understanding of Recov. Info.		0.554** (.086)	0.654** (.104)
Admissions Capacity			0.022** (.007)
Capacity			-0.061 (.047)
CMI			1.216** (.241)
MSPB			3.359** (1.158)
Teaching Status			0.405* (.173)
Length of Stay			-0.2** (.073)
System Affiliation			0.194 (.215)
R sq.	0.227	0.669	0.716
Adjusted R sq.	0.22	0.654	0.685
S.E.	1.865	1.243	0.987
F	35.908**	43.387**	21.271**

*p < .05

**p < .01

Table 5.10a: Summary of regression analysis for variables predicting patient satisfaction - Full Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	4.852** (.195)	4.854** (.137)	2.488** (1.042)
POH	1.045** (.276)	0.199 (.208)	0.033 (.226)
Corp.	-1.324** (.291)	-0.296 (.209)	-0.397 (.215)
Doctor Communication		-0.007 (.125)	0.087 (.131)
Nurse Communication		0.287 (.160)	0.363* (.161)
Medication Explanation		0.131 (.104)	0.044 (.111)
Help As Soon As Wanted		-0.054 (.091)	-0.083 (.096)
Pain Control		0.162 (.114)	0.35** (.133)
Clean Rooms and Bathrooms		0.003 (.073)	0.014 (.081)
Quiet Rooms		0.019 (.059)	-0.075 (.06)
Recovery Information Given		0.048 (.13)	-0.056 (.13)
Strong Understanding of Recov. Info.		0.627** (.089)	0.458** (.1)
Admissions Capacity			0.016** (.005)
Capacity			-0.031 (.029)
CMI			0.795** (.195)
MSPB			1.2 (1.017)
Teaching Status			0.375* (.167)
Length of Stay			-0.215** (.066)
System Affiliation			0.155 (.19)
R sq.	0.213	0.672	0.757
Adjusted R sq.	0.206	0.657	0.735
S.E.	1.712	1.206	1.074
F	33.106**	43.943**	34.184**

*p < .05

**p < .01

Table 5.10b: Summary of regression analysis for variables predicting patient satisfaction - Full Sample, 2017

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	4.841** (.188)	4.849** (.147)	-0.894 (1.211)
POH	0.053 (.319)	0.067 (.249)	-0.069 (.241)
Corp.	-1.362** (.282)	-0.255 (.229)	-0.349 (.234)
Doctor Communication		-0.236 (.142)	0.146 (.153)
Nurse Communication		0.097 (.175)	0.331 (.18)
Medication Explanation		0.129 (.114)	-0.054 (.139)
Help As Soon As Wanted		-0.185 (.115)	-0.169 (.125)
Pain Control		0.328** (.133)	0.229 (.150)
Clean Rooms and Bathrooms		0.108 (.091)	0.094 (.094)
Quiet Rooms		0.054 (.068)	-0.029 (.067)
Recovery Information Given		0.208 (.133)	0.076 (.14)
Strong Understanding of Recov. Info.		0.75** (.1)	0.665** (.105)
Admissions Capacity			0.019** (.007)
Capacity			-0.059 (.05)
CMI			1.444** (.281)
MSPB			3.838** (1.217)
Teaching Status			0.388* (.179)
Length of Stay			-0.237** (.082)
System Affiliation			0.148 (.228)
R sq.	0.123	0.584	0.7
Adjusted R sq.	0.114	0.561	0.663
S.E.	1.767	1.245	0.996
F	14.208**	24.777**	18.796**

*p < .05

**p < .01

Table 5.10c: Summary of regression analysis for variables predicting patient satisfaction - Restricted Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	4.828** (.186)	4.866** (.145)	1.684 (1.172)
POH	-0.04 (.313)	0.074 (.247)	0.098 (.244)
Corp.	-1.3** (.276)	-0.317 (.224)	-0.401 (.222)
Doctor Communication		-0.003 (.144)	0.186 (.15)
Nurse Communication		0.221 (.181)	0.409* (.173)
Medication Explanation		0.084 (.12)	-0.126 (.128)
Help As Soon As Wanted		-0.031 (.104)	-0.01 (.107)
Pain Control		0.215 (.127)	0.382* (.148)
Clean Rooms and Bathrooms		-0.034 (.080)	-0.046 (.086)
Quiet Rooms		0.04 (.065)	-0.061 (.063)
Recovery Information Given		0.023 (.145)	-0.11 (.141)
Strong Understanding of Recov. Info.		0.665** (.099)	0.508** (.104)
Admissions Capacity			0.02** (.005)
Capacity			-0.062 (.033)
CMI			1.166** (.256)
MSPB			1.471 (1.164)
Teaching Status			0.422* (.181)
Length of Stay			-0.227** (.070)
System Affiliation			0.151 (.223)
R sq.	0.113	0.552	0.688
Adjusted R sq.	0.104	0.527	0.653
S.E.	1.731	1.258	1.062
F	12.927**	21.742**	19.502**

*p < .05

**p < .01

Table 5.10d: Summary of regression analysis for variables predicting patient satisfaction - Restricted Sample, 2017

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.057 (.188)	-0.044 (.092)	-1.144 (.911)
POH	-0.652* (.27)	-0.052 (.14)	0.054 (.18)
Corp.	0.547 (.285)	0.385** (.144)	0.459** (.177)
Doctor Communication		-0.013 (.085)	0.052 (.116)
Nurse Communication		0.008 (.106)	0.12 (.135)
Medication Explanation		0.048 (.061)	0.031 (.104)
Help As Soon As Wanted		0.091 (.064)	-0.056 (.093)
Pain Control		-0.191* (.081)	-0.263* (.115)
Clean Rooms and Bathrooms		-0.044 (.056)	-0.028 (.071)
Quiet Rooms		0.016 (.04)	0.028 (.051)
Recovery Information Given		-0.098 (.08)	-0.038 (.106)
Strong Understanding of Recov. Info.		-0.106 (.055)	-0.068 (.081)
Admissions Capacity			0.005 (.005)
Capacity			-0.032 (.037)
CMI			-0.31 (.188)
MSPB			1.653 (.905)
Teaching Status			0.139 (.135)
Length of Stay			-0.026 (.057)
System Affiliation			-0.198 (.168)
R sq.	0.065	0.202	0.293
Adjusted R sq.	0.058	0.164	0.201
S.E.	1.8154	0.7929	0.7648
F	8.755**	5.306**	3.168**

*p < .05

**p < .01

Table 5.11a: Summary of regression analysis for variables predicting unplanned readmissions - Full Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.057 (.083)	-0.071 (.092)	-0.955 (.949)
POH	.009 (.143)	-0.008 (.157)	0.066 (.189)
Corp.	0.547** (.125)	0.384** (.145)	0.473* (.183)
Doctor Communication		0.007 (.089)	0.073 (.12)
Nurse Communication		0.059 (.111)	0.118 (.141)
Medication Explanation		0.031 (.072)	-0.015 (.109)
Help As Soon As Wanted		0.038 (.072)	-0.011 (.098)
Pain Control		-0.221** (.084)	-0.256* (.117)
Clean Rooms and Bathrooms		-0.01 (.058)	-0.012 (.074)
Quiet Rooms		0.016 (.042)	0.03 (.052)
Recovery Information Given		-0.086 (.085)	-0.059 (.11)
Strong Understanding of Recov. Info.		-0.132* (.063)	-0.075 (.083)
Admissions Capacity			0.008 (.006)
Capacity			-0.047 (.039)
CMI			-0.316 (.22)
MSPB			1.308 (.954)
Teaching Status			0.184 (.141)
Length of Stay			0.007 (.064)
System Affiliation			-0.213 (.179)
R sq.	0.097	0.201	0.278
Adjusted R sq.	0.088	0.155	0.189
S.E.	0.7938	0.7748	0.7805
F	11.108**	4.355**	3.108**

*p < .05

**p < .01

Table 5.11b: Summary of regression analysis for variables predicting unplanned readmissions - Restricted Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.057 (.085)	-0.047 (.091)	-1.533 (.779)
POH	-0.137 (.122)	-0.042 (.139)	0.086 (.169)
Corp.	0.546** (.128)	0.389** (.14)	0.467** (.16)
Doctor Communication		0.029 (.085)	0.012 (.1)
Nurse Communication		-0.119 (.108)	-0.147 (.12)
Medication Explanation		0.066 (.07)	0.082 (.083)
Help As Soon As Wanted		0.071 (.061)	0.103 (.072)
Pain Control		-0.037 (.076)	-0.023 (.1)
Clean Rooms and Bathrooms		-0.024 (.049)	-0.053 (.061)
Quiet Rooms		-0.003 (.039)	-0.016 (.045)
Recovery Information Given		-0.076 (.087)	-0.087 (.097)
Strong Understanding of Recov. Info.		-0.14* (.061)	-0.092 (.075)
Admissions Capacity			-0.006 (.003)
Capacity			0.019 (.022)
CMI			-0.293* (.145)
MSPB			2.033** (.763)
Teaching Status			0.189 (.125)
Length of Stay			-0.032 (.049)
System Affiliation			0.099 (.142)
R sq.	0.109	0.192	0.282
Adjusted R sq.	0.102	0.153	0.216
S.E.	0.8156	0.8015	0.799
F	15.177**	4.985**	4.259**

*p < .05

**p < .01

Table 5.11c: Summary of regression analysis for variables predicting unplanned readmissions - Full Sample, 2017

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.057 (.083)	-0.055 (.09)	-1.24 (.882)
POH	0.009 (.144)	-0.057 (.156)	0.048 (.183)
Corp.	0.546** (.125)	0.357* (.141)	0.448** (.166)
Doctor Communication		0.048 (.091)	0.077 (.112)
Nurse Communication		-0.092 (.113)	-0.109 (.13)
Medication Explanation		0.021 (.076)	-0.025 (.096)
Help As Soon As Wanted		0.072 (.065)	0.093 (.08)
Pain Control		-0.092 (.08)	-0.074 (.11)
Clean Rooms and Bathrooms		-0.018 (.05)	-0.037 (.065)
Quiet Rooms		-0.004 (.041)	-0.017 (.047)
Recovery Information Given		-0.049 (.091)	-0.046 (.105)
Strong Understanding of Recov. Info.		-0.00945	-0.113 (.078)
Admissions Capacity			-0.001 (.004)
Capacity			0.012 (.025)
CMI			-0.299 (.191)
MSPB			1.496 (.88)
Teaching Status			0.277* (.136)
Length of Stay			0.006 (.052)
System Affiliation			-0.096 (.167)
R sq.	0.096	0.186	0.26
Adjusted R sq.	0.087	0.14	0.176
S.E.	0.7988	0.7862	0.7949
F	11.02**	3.98**	3.083**

*p < .05

**p < .01

Table 5.11d: Summary of regression analysis for variables predicting unplanned readmissions - Restricted Sample, 2017

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.015 (.017)	-0.027 (.018)	-0.486** (.182)
POH	-0.037 (.023)	-0.001 (.027)	-0.002 (.036)
Corp.	0.028 (.025)	0.013 (.027)	0.007 (.035)
Doctor Communication		0.002 (.017)	0.032 (.023)
Nurse Communication		-0.015 (.02)	-0.024 (.027)
Medication Explanation		-0.004 (.012)	-0.003 (.021)
Help As Soon As Wanted		-0.01 (.012)	-0.011 (.019)
Pain Control		0.021 (.017)	0.009 (.023)
Clean Rooms and Bathrooms		0.013 (.011)	0.028 (.014)
Quiet Rooms		-0.007 (.008)	-0.002 (.01)
Recovery Information Given		-0.017 (.016)	-0.009 (.021)
Strong Understanding of Recov. Info.		-0.017 (.011)	-0.03 (.016)
Admissions Capacity			.000 (.001)
Capacity			0.008 (.007)
CMI			0.015 (.038)
MSPB			0.281 (.181)
Teaching Status			0.017 (.027)
Length of Stay			0.012 (.011)
System Affiliation			0.067 (.034)
R sq.	0.033	0.114	0.13
Adjusted R sq.	0.024	0.068	0.027
S.E.	0.1467	0.144	0.1544
F	3.808*	2.501**	1.263

*p < .05

**p < .01

Table 5.11e: Summary of regression analysis for variables predicting serious complications - Full Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.015 (.018)	-0.023 (.02)	-0.481** (.188)
POH	0.005 (.028)	0.012 (.033)	-0.001 (.037)
Corp.	0.028 (.026)	0.016 (.03)	0.007 (.036)
Doctor Communication		0.004 (.02)	0.033 (.024)
Nurse Communication		-0.014 (.024)	-0.02 (.028)
Medication Explanation		0.002 (.016)	-0.009 (.022)
Help As Soon As Wanted		-0.009 (.015)	-0.006 (.019)
Pain Control		0.016 (.02)	0.009 (.023)
Clean Rooms and Bathrooms		0.017 (.012)	0.03 (.015)
Quiet Rooms		-0.006 (.009)	-0.001 (.01)
Recovery Information Given		-0.006 (.018)	-0.01 (.022)
Strong Understanding of Recov. Info.		-0.024 (.013)	-0.033 (.016)
Admissions Capacity			0.001 (.001)
Capacity			0.008 (.008)
CMI			0.011 (.043)
MSPB			0.229 (.189)
Teaching Status			0.025 (.028)
Length of Stay			0.019 (.013)
System Affiliation			0.079* (.035)
R sq.	0.007	0.059	0.147
Adjusted R sq.	-0.004	-0.001	0.041
S.E.	0.1521	0.1527	0.1543
F	0.634	0.983	1.384

*p < .05

**p < .01

Table 5.11f: Summary of regression analysis for variables predicting serious complications - Restricted Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.015 (.017)	-0.023 (.018)	-0.417* (.138)
POH	-0.037 (.023)	-0.005 (.027)	-0.001 (.03)
Corp.	0.028 (.025)	0.001 (.027)	-0.002 (.028)
Doctor Communication		-0.011 (.016)	-0.003 (.017)
Nurse Communication		-0.009 (.021)	-0.013 (.021)
Medication Explanation		-0.003 (.014)	.000 (.015)
Help As Soon As Wanted		-0.01 (.012)	-0.002 (.013)
Pain Control		0.022 (.017)	0.013 (.018)
Clean Rooms and Bathrooms		0.004 (.01)	0.007 (.011)
Quiet Rooms		0.001 (.008)	0.001 (.008)
Recovery Information Given		-0.008 (.017)	-0.004 (.017)
Strong Understanding of Recov. Info.		-0.019 (.012)	-0.02 (.013)
Admissions Capacity			.000 (.001)
Capacity			0.006 (.004)
CMI			-0.018 (.026)
MSPB			0.339 (.134)
Teaching Status			0.007 (.022)
Length of Stay			0.01 (.009)
System Affiliation			0.03 (.025)
R sq.	0.033	0.122	0.185
Adjusted R sq.	0.024	0.077	0.11
S.E.	0.1467	0.1433	0.1419
F	3.808*	2.695**	2.481**

*p < .05

**p < .01

Table 5.11g: Summary of regression analysis for variables predicting serious complications - Full Sample, 2017

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.015 (.018)	-0.022 (.02)	-0.509**(.166)
POH	0.005 (.028)	0.006 (.032)	-0.003 (.035)
Corp.	0.028 (.026)	0.006 (.029)	-0.008 (.031)
Doctor Communication		-0.014 (.019)	0.005 (.021)
Nurse Communication		-0.005 (.025)	-0.011 (.025)
Medication Explanation		-0.004 (.017)	-0.004 (.018)
Help As Soon As Wanted		-0.01 (.014)	-0.002 (.015)
Pain Control		0.019 (.02)	0.007 (.021)
Clean Rooms and Bathrooms		0.008 (.012)	0.012 (.012)
Quiet Rooms		0.001 (.009)	0.001 (.009)
Recovery Information Given		-0.001 (.019)	0.002 (.002)
Strong Understanding of Recov. Info.		-0.02 (.013)	-0.025 (.015)
Admissions Capacity			.000 (.001)
Capacity			0.005 (.005)
CMI			-0.005 (.036)
MSPB			0.36* (.165)
Teaching Status			0.012 (.026)
Length of Stay			0.013 (.01)
System Affiliation			0.051 (.032)
R sq.	0.007	0.057	0.131
Adjusted R sq.	-0.004	-0.003	0.033
S.E.	0.1521	0.1529	0.1509
F	0.634	0.948	1.334

*p < .05

**p < .01

Table 5.11h: Summary of regression analysis for variables predicting serious complications - Restricted Sample, 2017

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.744 (.463)	-1.182* (.583)	9.8 (5.019)
POH	0.803 (.785)	0.791 (.896)	1.032 (.929)
Corp.	1.287 (.715)	0.913 (.89)	0.823 (.947)
Doctor Communication		-0.251 (.583)	-0.654 (.622)
Nurse Communication		0.206 (.749)	0.167 (.739)
Medication Explanation		-0.152 (.543)	0.352 (.543)
Help As Soon As Wanted		-0.791 (.533)	-1.021 (.538)
Pain Control		0.402 (.605)	0.648 (.604)
Clean Rooms and Bathrooms		-0.045 (.387)	-0.22 (.413)
Quiet Rooms		-0.007 (.284)	-0.25 (.293)
Recovery Information Given		1.108 (.594)	1.01 (.602)_
Strong Understanding of Recov. Info.		0.018 (.382)	0.537 (.422)
Admissions Capacity			-0.038 (.028)
Capacity			-0.219 (.205)
CMI			-2.675** (.994)
MSPB			-4.33 (5.042)
Teaching Status			-1.2 (.674)
Length of Stay			0.293 (.291)
System Affiliation			-0.537 (.857)
R sq.	0.023	0.072	0.232
Adjusted R sq.	0.01	-0.005	0.116
S.E.	3.7001	3.7273	3.5381
F	1.686	0.934	1.995*

*p < .05

**p < .01

Table 5.11i: Summary of regression analysis for variables predicting mortality - Full Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.706 (.474)	-1.166 (.598)	10.987* (5.235)
POH	0.796 (.854)	0.833 (.988)	0.754 (.985)
Corp.	1.25 (.729)	0.841 (.913)	0.312 (1.005)
Doctor Communication		-0.327 (.599)	-0.768 (.635)
Nurse Communication		0.198 (.769)	0.014 (.757)
Medication Explanation		-0.131 (.566)	0.518 (.569)
Help As Soon As Wanted		-0.878 (.557)	-1.233* (.555)
Pain Control		0.409 (.614)	0.596 (.607)
Clean Rooms and Bathrooms		-0.055 (.397)	-0.181 (.424)
Quiet Rooms		-0.011 (.296)	-0.297 (.298)
Recovery Information Given		1.346 (.619)	1.302 (.622)
Strong Understanding of Recov. Info.		0.07 (.4)	0.542 (.425)
Admissions Capacity			-0.024 (.032)
Capacity			-0.256 (.22)
CMI			-3.884** (1.284)
MSPB			-5.123 (5.311)
Teaching Status			-1.304 (.697)
Length of Stay			0.452 (.349)
System Affiliation			-0.167 (.906)
R sq.	0.022	0.083	0.26
Adjusted R sq.	0.008	0.002	0.142
S.E.	3.7597	3.7699	3.5457
F	1.526	1.028	2.207**

*p < .05

**p < .01

Table 5.11j: Summary of regression analysis for variables predicting mortality - Restricted Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.744 (.463)	-0.975 (.547)	6.352 (4.936)
POH	0.803 (.785)	0.581 (.91)	0.36 (.957)
Corp.	1.287 (.715)	1.003 (.846)	0.686 (.899)
Doctor Communication		-0.263 (.574)	-0.665 (.607)
Nurse Communication		0.089 (.752)	-0.302 (.761)
Medication Explanation		0.026 (.519)	0.538 (.546)
Help As Soon As Wanted		-0.576 (.464)	-0.797 (.47)
Pain Control		0.073 (.583)	0.347 (.584)
Clean Rooms and Bathrooms		0.169 (.368)	-0.05 (.386)
Quiet Rooms		0.018 (.278)	-0.12 (.284)
Recovery Information Given		1.263* (.629)	1.634* (.632)
Strong Understanding of Recov. Info.		-0.165 (.391_)	0.359 (.417)
Admissions Capacity			-0.028 (.027)
Capacity			-0.263 (.206)
CMI			-2.502* (.987)
MSPB			-0.213 (4.925)
Teaching Status			-1.527* (.668)
Length of Stay			0.139 (.295)
System Affiliation			-0.398 (.874)
R sq.	0.023	0.065	0.219
Adjusted R sq.	0.01	-0.013	0.1
S.E.	3.7001	3.7424	3.575
F	1.686	0.829	1.849*

*p < .05

**p < .01

Table 5.11k: Summary of regression analysis for variables predicting mortality - Full Sample, 2017

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	-0.706 (.474)	-0.934 (.561)	8.154 (5.183)
POH	0.796 (.854)	0.497 (1.000)	-0.043 (1.012)
Corp.	1.25 (.729)	0.933 (.87)	0.163 (.944)
Doctor Communication		-0.249 (.592)	-0.862 (.626)
Nurse Communication		0.084 (.771)	-0.523 (.785)
Medication Explanation		0.062 (.534)	0.664 (.562)
Help As Soon As Wanted		-0.677 (.489)	-1.037* (.494)
Pain Control		-0.062 (.603)	0.354 (.597)
Clean Rooms and Bathrooms		0.207 (.379)	0.018 (.394)
Quiet Rooms		0.021 (.283)	-0.135 (.286)
Recovery Information Given		1.511* (.655)	1.926** (.654)
Strong Understanding of Recov. Info.		-0.133 (.406)	0.413 (.422)
Admissions Capacity			-0.012 (.03)
Capacity			-0.295 (.223)
CMI			-4.037** (1.304)
MSPB			-1.519 (5.214)
Teaching Status			-1.605* (.686)
Length of Stay			0.341 (.353)
System Affiliation			0.025 (.919)
R sq.	0.022	0.075	0.25
Adjusted R sq.	0.008	-0.006	0.131
S.E.	3.7597	3.7856	3.5757
F	1.526	0.926	2.095**

*p < .05

**p < .01

Table 5.111: Summary of regression analysis for variables predicting mortality - Restricted Sample, 2017

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	4.697** (.191)	4.789** (.174)	-0.879 (1.426)
POH	-0.462 (.321)	0.294 (.258)	-0.119 (.253)
Corp.	-1.018** (.312)	0.16 (.261)	-0.025 (.26)
Unplanned Readmissions	-0.538** (.156)	-0.164 (.119)	-0.174 (.112)
Serious Complications	0.167 (.769)	0.855 (.567)	0.226 (.542)
Mortality	-0.075* (.034)	-0.079** (.025)	-0.026 (.025)
Doctor Communication		-0.057 (.17)	0.178 (.172)
Nurse Communication		0.283 (.218)	0.24 (.203)
Medication Explanation		0.178 (.157)	0.047 (.148)
Help As Soon As Wanted		-0.187 (.156)	-0.135 (.149)
Pain Control		0.193 (.179)	0.13 (.169)
Clean Rooms and Bathrooms		0.034 (.113)	0.195 (.115)
Quiet Rooms		-0.105 (.082)	-0.059 (.08)
Recovery Information Given		0.015 (.174)	-0.046 (.166)
Strong Understanding of Recov. Info.		0.893** (.113)	0.727** (.117)
Admissions Capacity			0.018** (.008)
Capacity			-0.053 (.057)
CMI			0.867** (.281)
MSPB			4.572** (1.394)
Teaching Status			0.417* (.186)
Length of Stay			-0.188* (.079)
System Affiliation			0.122 (.239)
R sq.	0.237	0.637	0.725
Adjusted R sq.	0.209	0.598	0.675
S.E.	1.5	1.07	0.959
F	8.488**	16.065**	14.573**

*p < .05

**p < .01

Table 5.12a: Summary of regression analysis for variables predicting patient satisfaction - Full Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	4.67** (.19)	4.767** (.181)	-1.604 (1.503)
POH	-0.718* (.339)	0.248 (.288)	-0.021 (.27)
Corp.	-1.034 ** (.309)	0.119 (.271)	0.049 (.277)
Unplanned Readmissions	-0.47** (.156)	-0.15 (.123)	-0.162 (.114)
Serious Complications	0.103 (.769)	0.805 (.589)	0.192 (.561)
Mortality	-0.071* (.034)	-0.082** (.026)	-0.021 (.026)
Doctor Communication		-0.084 (.176)	0.188 (.178)
Nurse Communication		0.286 (.226)	0.309 (.209)
Medication Explanation		0.174 (.165)	0.014 (.156)
Help As Soon As Wanted		-0.212 (.165)	-0.134 (.156)
Pain Control		0.188 (.184)	0.137 (.171)
Clean Rooms and Bathrooms		0.039 (.117)	0.168 (.119)
Quiet Rooms		-0.1 (.086)	-0.051 (.082)
Recovery Information Given		0.056 (.184)	-0.053 (.174)
Strong Understanding of Recov. Info.		0.883** (.12)	0.737** (.12)
Admissions Capacity			0.013 (.009)
Capacity			-0.039 (.062)
CMI			1.238** (.37)
MSPB			5.213** (1.474)
Teaching Status			0.422* (.195)
Length of Stay			-0.251* (.097)
System Affiliation			0.056 (.255)
R sq.	0.23	0.609	0.708
Adjusted R sq.	0.2	0.564	0.652
S.E.	1.481	1.094	0.97
F	2.073**	13.455**	12.697**

*p < .05

**p < .01

Table 5.12b: Summary of regression analysis for variables predicting patient satisfaction - Restricted Sample, 2018

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	4.667** (.193)	4.781** (.166)	1.103 (1.443)
POH	-0.377 (.324)	0.38 (.266)	0.029 (.269)
Corp.	-1.022** (.315)	0.033 (.252)	-0.091 (.256)
Unplanned Readmissions	-0.488** (.157)	-0.11 (.119)	-0.15 (.116)
Serious Complications	0.447 (.776)	1.039 (.566)	0.688 (.554)
Mortality	-0.081* (.035)	-0.078** (.025)	-0.045 (.026)
Doctor Communication		0.154 (.17)	0.236 (.172)
Nurse Communication		0.131 (.221)	0.15 (.215)
Medication Explanation		0.017 (.152)	-0.009 (.154)
Help As Soon As Wanted		-0.125 (.137)	-0.118 (.134)
Pain Control		0.33 (.171)	0.267 (.165)
Clean Rooms and Bathrooms		-0.05 (.108)	0.053 (.109)
Quiet Rooms		-0.075 (.081)	-0.064 (.08)
Recovery Information Given		0.012 (.186)	-0.005 (.182)
Strong Understanding of Recov. Info.		0.886** (.118)	0.717** (.119)
Admissions Capacity			0.017* (.008)
Capacity			-0.04* (.059)
CMI			0.737* (.288)
MSPB			3.285 (1.414)
Teaching Status			0.265 (.193)
Length of Stay			-0.275** (.083)
System Affiliation			-0.048 (.249)
R sq.	0.222	0.625	0.702
Adjusted R sq.	0.193	0.584	0.648
S.E.	1.515	1.087	1.004
F	7.808**	15.265**	12.993**

*p < .05

**p < .01

Table 5.12c: Summary of regression analysis for variables predicting patient satisfaction - Full Sample, 2017

	Model 1	Model 2	Model 3
	B (S.E.)	B (S.E.)	B (S.E.)
Constant	4.639** (.192)	4.755** (.171)	0.415 (1.541)
POH	-0.623 (.343)	0.308 (.294)	0.091 (.288)
Corp.	-1.038** (.313)	-0.004 (.262)	-0.065 (.277)
Unplanned Readmissions	-0.418** (.158)	-0.092 (.123)	-0.134 (.12)
Serious Complications	0.396 (.611)	0.935 (.588)	0.601 (.574)
Mortality	-0.077* (.034)	-0.079** (.026)	-0.04 (.027)
Doctor Communication		0.145 (.177)	0.252 (.181)
Nurse Communication		0.134 (.229)	0.224 (.224)
Medication Explanation		-0.013 (.157)	-0.031 (.161)
Help As Soon As Wanted		-0.149 (.146)	-0.134 (.144)
Pain Control		0.365* (.179)	0.28 (.171)
Clean Rooms and Bathrooms		-0.044 (.112)	0.04 (.113)
Quiet Rooms		-0.07 (.083)	-0.065 (.082)
Recovery Information Given		0.01 (.197)	-0.048 (.193)
Strong Understanding of Recov. Info.		0.874** (.123)	0.729** (.122)
Admissions Capacity			0.013 (.009)
Capacity			-0.038 (.065)
CMI			0.996* (.39)
MSPB			3.925* (1.51)
Teaching Status			0.272 (.202)
Length of Stay			-0.32** (.101)
System Affiliation			-0.056 (.265)
R sq.	0.213	0.599	0.682
Adjusted R sq.	0.183	0.553	0.621
S.E.	1.497	1.107	1.017
F	7.038**	12.912**	11.231**

*p < .05

**p < .01

Table 5.12d: Summary of regression analysis for variables predicting patient satisfaction - Restricted Sample, 2017

CHAPTER 6: CONCLUSION

This is the first study, to my knowledge, that compares POHs with other more established hospital forms. This research compared hospitals, highlighting the differences in quality perceptions among patients in different types of hospitals. Unlike Sloan, Picone, Taylor, & Chou (2001) who found no differences between for-profit and not-for-profit hospitals in Medicare costs and outcomes, this study revealed differences in patient satisfaction, outcomes, and costs based on hospital type. Blumenthal et al.'s (2015) comparative study combined corporate-owned and not-for-profit hospitals into one category of “non-POHs” and also did not clearly differentiate between specialty and general service POHs. In contrast, the study here found quality differences between general service and specialized POHs. Corporate-owned hospitals had the least positive patient perceptions of providers’ practices and satisfaction; patient outcomes also were the worst. Here, hospitals with better quality care tended to be not-for-profit hospitals.

That in turn raises two related concerns. The first is about differences in the costs and sources of capital raised by for-profit and not-for-profit hospitals. Because not-for-profit hospitals are tax exempt, and donations made to them are tax deductible, their overall costs of capital may be lower than those of for-profit hospitals (Horwitz, 2007, p. 160; Frank & Salkever, 1994; Reinhardt, 2000). Nonetheless, some not-for-profit hospitals have changed their status to for-profit because of the relatively lower constraints related to equity financing compared to debt financing. It also is possible that the requirements that nonprofits have to fulfill social obligations to maintain tax-exempt status may push some to change their status (Hirth, 1999; Hollis, 1997).

The second concern relates to market consolidation with the formation of hospital networks. Of the hospitals sampled here, 66% had some form of system affiliation, with 92% of

the corporate-owned hospitals having such affiliations compared to 45% of POHs and 65% of not-for-profit hospitals. Spaulding, Edwardson, & Zhao (2018) suggest that hospitals that are part of larger network are more likely than non-network hospitals to receive higher value-based reimbursements. Networking among hospitals might enable them to share more professional expertise (Wagner, 2000) and potentially lead to better outcomes for patients, but market consolidation also may increase hospital power to control costs.

Hospitals may benefit from joining networks, but the effects of such networks on the quality of health care may not always be positive. When U.S. policy makers struggle to balance costs, quality and access, it might be worth noting that market consolidation by hospitals may contribute to the creation of market structures that do not support cost containment.

Consolidation through networks might improve hospitals' finances and profits, but it is also associated with rising costs of care (Bazzoli, Chan, Shortell, & D'Aunno, 2000; Bazzoli, Dynan, Burns, & Yap, 2004; Cueller & Gertler, 2005). Moreover, the relationships between hospital networks, efficiency and quality of care are not always positive. For example, Cueller & Gertler (2005) found networking among hospitals reduced their efficiency and quality, but Luke, Luke & Muller (2011) reported higher coordination and better quality among network hospitals.

Nonetheless, greater networking could create hospital monopolies and the risk of higher costs due to market consolidation remains.¹³⁶ Limited regulations on the prices of medical services that hospitals charge patients also might be contributing to rising health care expenditures. A sociological institutional perspective might help explain sharing of best practices among network hospitals (DiMaggio & Powell, 1983; Westphal, Gulati & Shortell, 1997), but it does not account for the potential side effects related to costs of care. A hospital that Al-Amin, Schiaffino, Park, & Harman (2018) would identify as a "sustainer of top performance" (p. 26) may not be a real

¹³⁶ <https://www.statnews.com/2017/09/06/hospital-mergers-monopolies/>

sustainer if one neglects these two concerns, raising implications for hospital management and for policymaking.

6.1 PUBLIC AFFAIRS SIGNIFICANCE

Physician Hospitals of America, the advocacy group for physician owned hospitals¹³⁷, has been successful in lobbying members of Congress to introduce bills to reconsider the ACA's restrictions on POHs. Yet, relatively little is known about the long-term costs of specialty hospitals for the quality of care generally. The findings here enable comparison among hospitals using Donabedian's quality pillars framework. Such quality comparison might inform future policymaking (Figure 6.1). Donabedian (1990) identified seven attributes of health care that together define quality of care: efficacy (potential of wellbeing), effectiveness (actual health improvements), efficiency (cost of care), optimality (outcomes relative to cost), acceptability (patient-practitioner relationship), legitimacy (specialists vs. generalists), and equity. This study suggests variation in quality care based on the type of hospital.

¹³⁷ <https://www.physicianhospitals.org/page/About>

Seven pillars of quality			
	POHs	Corps.	NFPs
Efficacy	↑	↓	↑
Effectiveness	↓	↓	↑
Efficiency	↓	↓	↑
Optimality	↓	↓	↑
Acceptability	↔	↓	↑
Legitimacy	↔	↑	↑
Equity	↔	↓	↑

Figure 6.1: Attributes of Health Care Quality by Hospital Type (Donabedian, 1990)¹³⁸

Here, CMI (cf. Table 5.2) was employed as an indicator of hospital efficacy. The outcomes data from hypothesis 5 tap effectiveness for Donabedian (1990, p. 1115). His notions of efficiency and optimality can be applied based on the costs data in table 5.2. Acceptability is based on patients' perceptions of provider practices. The results are mixed for POHs because of the distinction between specialty and general service hospitals. Donabedian (1990, p. 1118) describes "legitimacy of care" according to the recipients of care: care that is geared toward greater numbers of recipients or that is not limited to special constituencies might be considered more legitimate. Here, equity can be treated as a ratio of Medicare to non-Medicare patients (Table 5.2). On Donabedian's quality pillars, the findings here suggest that not-for-profit hospitals might have the best overall quality of care and corporate-owned hospitals the worst, with POHs mixed at best.

¹³⁸ Arrows pointing up indicate better performance; those pointing down worse performance, and sideways mixed performance.

For health care policy, the current findings do not clearly support repealing section 6001 of the ACA. This study indicates that specialty POHs may be responsible for the finding that POHs have higher levels of patient satisfaction and better outcomes; that suggests that specialty and surgical POHs should not be used as surrogates for POHs generally. That calls into question Blumenthal et al.'s (2015) recommendation that the policy sanctions placed on POHs be reconsidered. Especially when peoples' lives are concerned, it might be better to support hospitals that potentially create broader societal value, instead of those that focus primarily on making profits at potential cost to patients. The recent efforts by some members of Congress and the CMS to redefine the notion of value-based care by accommodating interests like those of POHs may not produce long-term benefits for the general society until POHs reduce their overall costs of care. Providing the best inpatient stay experiences and comfort may not add substantive value to patients' lives. Considering that almost half of all POHs are specialty or surgical hospitals, they may be constrained by scale, accurate assessment (Ginsburg, 2000), and technology (Mick & Shay, 2014).

If a focused factory is to bring to bear a wide range of expertise, a large number of patients will be necessary. This population requirement is likely to preclude the development of focused factories in many smaller communities. Also, the greater the necessary scale, the greater will be the traveling time and inconvenience experienced by patients At present, even among endocrinologists, only a minority narrowly define themselves as diabetologists. Perhaps a cancer center is a better candidate for this approach, since oncologists can practice the full range of their specialty (Ginsburg, 2000, p. 44).

Future congressional efforts to reconsider existing policy, then, must account for performance differences between specialty and general services POHs and their higher costs of care.

Policymakers also must consider the general shortage of primary care physicians in the U.S. Reconsidering medical education policy that structurally supports more specialists might be

useful as well in improving the overall state of health care in the nation (Mick & Shay, 2014). Measurement of quality perceptions through patient surveys might suggest high quality care in POHs, but policymakers as well as prospective patients must consider that patient outcomes matter when patients' lives are concerned and not just the quality of experience.

6.2 MANAGERIAL IMPLICATIONS

Sultz & Young (2006) argued that efficiency and cost concerns mediate providers' behavior in for-profit hospitals, which may have consequences on patients' health in the longer term. The findings of this research show differences in patient outcomes between for-profit and not-for-profit hospitals. Variations in outcomes and costs among hospitals support observations that the for-profit nature of organizations may indeed have substantive consequences for the consumers of services. Perception may not always be associated with better outcomes. If the quality of outcomes in for-profit settings continues to be weaker, then one would expect negative effects on the long-term relationships between consumers and service organizations. In the health care sector, this could potentially impact patient loyalty to hospitals. The relatively lower quality patient outcomes in corporate-owned hospitals in 2017 and 2018 suggest that for-profit hospitals may face an additional challenge of adaptation to the market driven environment in the longer run. The criteria for long-term organizational success differ from those for short-term success (Kimberly, 1979).¹³⁹

Dissatisfied patients or patients that do not experience expected outcomes of care are less likely to be loyal to a hospital. If so, a hospital may not be guaranteed to maintain demand levels

¹³⁹ Latest reported revenues (July, 2018) by some of the biggest for-profit hospital operators in the U.S. suggest they might be profitable, but we do not know if high revenues are sustainable given the evidence of relatively poorer quality of care (<https://www.beckershospitalreview.com/quality/viewpoint-why-hospital-mergers-raise-patient-safety-problems.html>).

as market conditions change. It may be even more necessary for for-profit hospitals in general to focus on patient outcomes and not rely mostly on their perceived satisfaction. Just as consumer perceptions are susceptible to manipulation through experience, structural changes (like those in markets) may impact consumer relationships with organizations. If current Medicare reimbursement policies were to be linked to patient outcomes only, for example, for-profit hospitals may be at greater risk of shutting down. In a value-based quality environment, one does not know if reimbursements would continue to factor in patients' perception of quality care, along with outcomes. Definition of value-based care may change. If Congress considers reforming the HVBP program and linking it solely to patient outcomes, for-profit hospitals may find it difficult to conform to these requirements.

In for-profit hospitals efficiency and budgetary constraints may have stronger effects on patient-centric practices (Sultz & Young, 2006) than in non-profit settings. Focusing on organizational efficiency alone does not always result in better performance (McKinley, 1992), and sometimes it produces declining performance (McKinley, Sanchez, & Schick, 1995). Moreover, patient satisfaction may not be cost neutral, and achieving patient satisfaction may in turn reduce "some forms of quality" itself (Huerta, Harle, Ford, Diana, & Menachemi, 2016, p. 56). The regression results for hypothesis 3 results show patient outcomes may are not statistically related to patient satisfaction.

Assuming hospitals serve a public function, efficiency as a primary organizational value may conflict with the public service goals of hospitals, if organizational efficiency is costly to the public. The findings on patient satisfaction and outcomes indicate that corporate-owned hospitals may add to societal costs as they increasingly serve more patients. Poor patient health outcomes may have immediate consequences for patients and their families, but they also may have

cumulative harmful effects on society in general.

Meanwhile, Al-Amin, Makarem & Rosko (2016) found efficiency and hospital size are negatively associated with hospitals' capability to improve their HCAHPS satisfaction ratings. Here, corporate-owned hospitals on average were bigger (based on the number of beds) than not-for-profit hospitals; patient perceptions of corporate-owned hospitals are not as positive as for POHs or not-for-profit hospitals. Al-Amin et al. (2016) also suggest that hospitals that maintain slack resources might be better prepared to manage environmental demands and by extension more complex cases. Such findings offer a possible capacity-related explanation for the poor patient outcomes this study revealed in corporate-owned hospitals and the relatively better outcomes in other hospitals. Relatedly, Wagner (2000, p. 569) notes that effective care coordination requires cross-functional professional teams, and the greater slack resources (for example, higher capacity) may point to the potential for greater coordination between providers and patients in better staffed hospitals.

In addition to potential value misalignment among managers, providers and patients in corporate-owned hospitals, relatively lower patient perceptions of quality may indicate an organizational culture that is less suitable to consumers of services (the patients). Manary et al.'s, (2014) research suggests that a poor patient experience reflects "organizational culture ... [and] the apparent disconnect between hospital management and physicians may need to be addressed . . . to improve the patient experience in provider organizations" (p. 8). Their study supports the notion that value conflicts might be endemic in corporate-owned hospitals because providers may find balancing multiple expectations and values to be quite difficult. The costs may not only affect patients' health (Sultz & Young, 2006), but also ultimately pose financial risks for hospitals since reimbursements are linked to patient satisfaction (Tsai et al., 2015).

Lower capacity in corporate-owned hospitals may prevent them from establishing adequate “environmental buffers” (Cameron, 1986, p. 546) in the form of highly satisfied patients, and this may cause more harm to patients (Edwards, 2017). Corporate-owned hospitals may begin by improving their staffing levels and not just their size. Better staffing may not only produce higher quality service but hospitals may be more adaptable to market changes as well as patient complexity (Arnett, Sandvik, & Sandvik, 2018). Better staffing may include paying attention to existing structures and processes, since those that provide few incentives for employees to act in ways that are related to customer satisfaction may not be able to sustain high service quality in the longer run (Gilbert & Parhizgari, 2000, p. 50).

General services POHs have higher CMIs than NFP hospitals, indicating the former may have greater patient complexity and diversity, but POHs also have higher inpatient charges. Thus, the value of care that POHs provide may not be comparable to that of not-for-profit hospitals. As long as not-for-profit hospitals provide higher value of care per dollar per patient, and have better outcomes, they may have competitive advantages over other hospital forms. This, however, does not undermine the competition that POHs generate for NFP hospitals. Providing higher value to patients may enable managers to overcome many environmental obstacles, because satisfied patients may provide a buffer against market or policy changes. If so, this suggests that in a consumer driven services environment, stability in consumer-organization interactions might be of high value, and a value in itself that service-based organizations must aspire to achieve and retain in order to sustain their competitive advantage. In healthcare, stability in patient-hospital interactions means higher patient loyalty. In the longer run, better patient outcomes and higher patient satisfaction may provide hospitals not just strategic advantages, but also create opportunities to focus on innovation in health care services (See for

e.g., Cameron, 1984, p. 243; Cameron, Freeman, & Mishra, 1991; Parke & Seo, 2017). Satisfied and loyal patients may in fact be slack resources that help ensure long-term survival (Gilbert & Parhizgari, 2000).

A potential detriment in achieving higher patient satisfaction and loyalty might be inadequate alignment between management and providers in a hospital. Budgetary and profit constraints mediate management-provider relationships (Sultz & Young, 2006). Inadequate alignment between management and providers may create role conflicts for providers. Role conflicts may be stronger when personal interests of managers prevent providers from fulfilling their obligation to public service (Wamsley & Zald, 1973; Crozier, 1973). When such conflicts occur in organizational settings, they may also create conditions that cause ethical problems while simultaneously undermining the notion of responsible conduct (Cooper, 2012, p. 246). Responsible conduct may, in fact, improve organizational efficiency in the longer term, as Finer argued (1941, p. 335).

According to Haas, Berry, & Reynolds (2018), because providers typically are not part of policy discussions about potential mergers, providers may face greater challenges to effectively serve patients. Challenges arise because providers are given instructions by the management to coordinate with other hospitals and patients ex-post.¹⁴⁰ If such practices are routine in corporate-owned or other for-profit hospitals, quality of patient-centric care is most likely to suffer because of managerial decisions.¹⁴¹ Huerta et al. (2016) argue that in the short term “frontline providers (doctors and nurses)” are “critical to [the] success” (p. 56) of a hospital, and hospital managers may only have a limited ability to influence patients’ satisfaction and outcomes. However,

¹⁴⁰ <https://www.beckershospitalreview.com/quality/viewpoint-why-hospital-mergers-raise-patient-safety-problems.html>

¹⁴¹ <https://www.statnews.com/2018/07/31/hospital-mergers-acquisitions-patient-safety/>

quality of care might suffer in the longer term due to managerial adventures. Better alignment between managerial, providers' and patients' concerns may in fact grant more legitimacy to hospitals.

Market dynamics need not negate or undermine the value of a high quality product or service (Arnett et al., 2018). Particularly in a service industry like health care, the effect of managerial values may be significant for long-term patient satisfaction and outcomes, and creating loyal patients.

6.3 IMPLICATIONS FOR PUBLIC ADMINISTRATION

This research informed us about the potential consequences when narrow private interests capture policy. The negative externalities created by such capture may be apparent on all stakeholders involved in production and consumption of services. For example, on the policy and governance side, policy capture may make regulatory agencies less accountable to the public and more vulnerable to manipulation by business. On the demand side, consumers may have to buy costly services and yet not find them valuable. In the longer term, the cumulative effects of policy capture might negatively affect the resilience of governments while making private businesses less accountable to the public (Kettl, 2015).

The public service nature of health care sector and the growing influence of private interests indicate challenges associated with the assignment of public functions.¹⁴² Assignment by the legislative and executive branches of government without appropriate criteria may make health care inequitable and costlier (Moe, 1987). Indeed, the quality differences in for-profit and NFP hospitals raise an important issue of the “inadequacy of external political controls alone to

¹⁴² It likely is worth highlighting as well that in health care specifically, the assignment of public functions raises a more fundamental political question about the nature of the sector itself: is health care a right or a privilege?

ensure administrative responsibility.” Internal controls (Cooper, 2012, p. 155) and administrative commitment to more general values might be needed in addition to “externally imposed obligations” to serve public interest responsibly and effectively (Cooper, 2012, pp. 82-85; Friedrich, 1935). Public interest and equity constraints in the health care sector might support greater interdependence between governments and NFP hospitals (Kettl, 2015; Worth, 2012, pp. 46-49; Mick & Shay, 2014). Nonprofit organizations fill gaps created by the failure of markets and government policies to provide cost effective services (Worth, 2012, p. 49).

6.4 IMPLICATIONS FOR ORGANIZATIONAL DESIGN

This study’s finding that, once mediating variables are included, ownership is itself not significantly related to patient satisfaction suggests that in a consumer driven business environment, organizing around activities may be more important than structure (see, e.g., Pugh & Hickson, 1989; Eggleston, Shen, Lau, Schmidt, & Chan, 2006). For example, providing medication explanations to patients, controlling patients’ pain levels, producing understanding of recovery information, and providing clean and quiet rooms, shorter stays, and better nurse-patient communication are more likely to lead to greater numbers of satisfied patients. Focusing on specific sets of activities may enable designing organizations that manage change more effectively and that might be perceived as being more legitimate (see, e.g., Butler, 1997).

Organizational structuring around activities may weaken some concerns about some environmental contingencies and support notions of equifinality and co-evolution (McGrath, 2006; Gresov & Drazin, 1997), The design concern then would be getting the configuration of

activities right in order to create organizations that remain effective in a consumer satisfaction-based, market driven environment (Scott et al., 2000; Scott, 2003; McGrath, 2006).¹⁴³

6.5 LIMITATIONS

The relatively better quality of patient outcomes in not-for-profit hospitals indicates they are better than other hospitals, but this research did not consider several factors related to hospital staff, patient characteristics, or location. One limitation of the study is that it did not examine the entire workforce in hospitals, which may influence various practices as well as patient satisfaction and outcomes. For example, in pay-for-performance reimbursement programs, hospitals that use the services of professional managers and medical professional experts are more likely to perform better on HCAHPS indicators and receive higher reimbursements (Young, 2013). No systematic data are available on the concentrations of professional managers and experts like discharge coordinators or professional patient experience coordinators in hospitals. Such data might help in identifying hospitals that are more likely to adopt consumer behavior management practices through professional managerial strategies as well as hospitals that are more likely to focus on outcomes based, patient-centric care. It is possible that the higher patient satisfaction scores for POHs might be because their staffs have more professional managers. Yet if POHs provided patient-centric care that was comparable to

¹⁴³ On a related note, Frederic Laloux (2014) proposes the concept of an “alternative consumerism” that is not ego driven (p. 295); instead consumption of a product or service is purposeful. To promote more purposeful consumption, he proposes designing organizations that are purpose driven and not profit driven (p. 56). Profits are expected to come from purposeful action (pp. 230-232). He labels such organizations as “teal organizations” (pp. 43-49). Teal organizations are managed through strong peer relationships (p. 56). Because employees act as stewards and play responsible roles in the teal perspective (p. 119), their practices are likely to be based on honest communication and relationship oriented (p. 190). Purposeful organizations arguably lead to sector blurring between for-profit and nonprofit organizations (p. 300). If higher consumer satisfaction is the design purpose, organizations do not necessarily have to be profit-oriented or nonprofits.

not-for-profit hospitals, one would have found few differences in patients' outcomes, but that was not the case.

The study also did not specifically examine the presence or numbers of professional discharge coordinators on hospital staffs. Under pay-for-performance reimbursement models, some hospitals might actively engage in strategic patient discharges in order to get higher Medicare reimbursements. Strategic discharges also may be more prevalent among hospitals with network affiliations. Eliason, Grieco, McDevitt, & Roberts (2016) found more strategic discharges from for-profit and long-term care hospitals. If strategic discharges are more common in for-profit hospitals, patient outcomes might be even worse than this study found.

A related limitation is that the composition of the medical staff in hospitals also needs further attention. Despite the demand for primary care physicians in the U.S., existing medical education and salary models support more specialist physicians (Mick & Shay, 2014; Palmeri, Pipas, Wadsworth, & Zubkoff, 2010). Because of these structural features, hospitals might hire more "physician extenders" (e.g., physician assistants, nurse practitioners) to provide cost-effective care. We do not know what percentages of medical staffs in hospitals are non-physicians. Better outcomes in not-for-profit hospitals might be due to more available nurse practitioners and physician assistants (Mick & Shay, 2014, p. 16) as well as more registered nurses (as opposed to, e.g., Licensed Practical Nurses).

Third, one does not know how independent of other experiences patients' judgments are. This study failed to fully clarify the "referent" in quality analysis. Similar to organizational effectiveness scholarship, ambiguity remains in examinations of organizational "quality." Severity of patients' conditions may affect their survey responses (Hachem, Canar, Fullam, Andrew, Hohmann, & Johnson, 2014). We do not know whether patients' judgments are linked

to their interactions with providers, to a hospital's environmental factors, or to other influences. Perhaps patients going to a POH also were reacting to previous experience in other hospitals, which could have been specialty or generalist POHs, general service corporate-owned hospitals or not-for-profit hospitals. Little is known generally about patients' movement among hospitals. For instance, a general service hospital might refer a patient to a specialty POH for one condition. When that patient visits the general service hospital for a second condition at another time and is randomly selected to take an HCAHPS survey, it is difficult to know whether and how the patient's judgments would be affected by their previous experiences. Since CMS ratings for an individual hospital are based on its aggregate patients' surveys, the likelihood of a few patients affecting the ratings for a hospital may be low. This, of course, also can be addressed by tracking and comparing ratings for longer periods of time, another limitation of the analysis here.

Finally, this research mentions section 3008 (HACRP) as part of the ACA's quality sanctions but did not include hospital-acquired infections in the quality comparisons among hospitals.

6.6 FUTURE RESEARCH DIRECTIONS

In addition to looking at hospitals in greater detail and for longer time periods, future research might focus on several other areas. Future research might look at the costs for employees of pursuing higher quality performance. According to 2017 Leaders for Today¹⁴⁴ surveys of healthcare employees, hospital staffs suffer from low tenure and lack of continuity. Hospitals also do not always have supportive work environments, with reports of workplace violence directed at nurses and of heavier workloads due to understaffing and staff burnout

¹⁴⁴ <https://www.beckershospitalreview.com/human-capital-and-risk/hospitals-face-unprecedented-turnover-attrition-rates-4-survey-findings.html>; <http://www.leadersfortoday.com/resources/lft-industry-survey-may-2017/>

(Mick & Shay, 2014). Patient satisfaction is not cost neutral (Huerta et al., 2016). Quality comparisons among hospitals from employees' perspective might provide helpful information about the state of provider practices in addition to sole reliance on patients' perceptions. Parand, Dopson, Renz, & Vincent (2014) found a positive association between employee compensation and quality; still, in the U.S. there are large wage gaps between primary care and specialty physicians (Leigh, Tancredi, Jerant, & Kravitz, 2010) as well as between physicians and other hospital workers. This line of inquiry might provide support for Cameron, Mora, Leutscher, & Calarco's (2011) findings about positive practices and an abundance perspective for organizational effectiveness.

More research on patient characteristics and on hospital location might be helpful in more fully understanding quality variations among hospitals. For example, many specialty POHs are located in metropolitan areas (Blumenthal et al., 2015), and nonmetropolitan areas may have a higher concentration of full-service hospitals. Additionally, cultural differences, along with race, ethnicity, sex, sexuality, religiosity, political ideology, education, and occupation, might affect patients' judgments and survey responses. Relatively older patients tend to go to full service hospitals (Blumenthal et al., 2015), and we do not know how much older patients' perceptions are influenced by strategic managerial practices.

The differences in provider practices and in patient satisfaction and outcomes among types of hospitals found here suggest that quality and productivity may have different meanings in different hospital settings. This highlights a potential managerial challenge with defining productivity. The relatively lower patient satisfaction and outcomes found in corporate-owned hospitals may be misleading when considered in isolation. Until one finds evidence that shows distinct patient characteristics in corporate-owned hospitals, relatively lower quality may not

have much significance for these hospitals. If there are no significant differences in the patients seeking medical care at corporate-owned hospitals and not-for-profit hospitals, relatively lower patient satisfaction and outcomes for patients at corporate-owned hospitals may inform policy changes toward corporate-owned hospitals. At this time, it is only an assumption that patients in for-profit and not-for-profit hospitals are similar and have similar notions of quality.

Future research could compare variation in patient-centric care according to the location of the nearest hospital. If patients have limited options in one locality they are more likely to become “captive” patients. Location also might affect payment options for patients. Hospitals might prefer particular insurance providers, and Medicare and Medicaid provisions may further limit patients’ choices and quality judgments. Payment constraints may affect the quality judgments of captive patients compared to those with a wider range of choices of hospitals and of medical providers. In addition to payment constraints, location may also impact the hospital capacity as well as the authority of physicians to admit patients.

The fact that the majority of POHs are in Texas and Louisiana raises further questions about the effects of regional influences on definitions of quality of patient-centric care and their generalizability. The court case that challenged the constitutionality of section 6001 was also brought in a federal court in Texas. Future research might also look at regional political dynamics that support POHs. This study’s results confirm that POHs compete with not-for-profit hospitals in consumer driven health care markets, but it adds relatively little to our knowledge of regional factors that may affect the quality of care.

6.7 CONCLUSION

This research found wide variations in patients' perceptions of provider practices among different types of hospitals and in patient satisfaction and outcomes. The profit motive does seem to affect provider practices, which in turn affects patients' satisfaction and outcomes. Value-based care that is based on a pay-for-performance philosophy (as laid out in the ACA) might be more uncertain were the federal government to stop regulating hospitals. Government interventions might be needed especially in consumer driven health care markets; consumer judgments are susceptible to manipulation. In the absence of government oversight, the profit motive in some hospitals might put definitions of quality itself at risk because consumer experiences alone might be used as referents for quality judgments. It also might further jeopardize balancing costs, quality and access in health care. Governmental presence in health care is necessary in pay-for-performance models as it acts as a potential check on the responsibility of hospitals to provide patient-centric care.

This study shows better patient experiences may not necessarily translate into better patient outcomes. Although POHs compete with not-for-profit hospitals on patient satisfaction, they may not provide as much value of care to patients as do not-for-profit hospitals due to the higher costs of care. Not-for-profit hospitals cannot be complacent, though, since in some areas POHs evidently provide comparable care, at least according to patients' perceptions.

REFERENCES

- Afshartous, D., & Preston, R. A. (2011). Key results of interaction models with centering. *Journal of Statistics Education*, 19(3), 1-24
- Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *Journal of American Medical Association*, 288(16), 1987-1993.
- Al-Amin, M., Makarem, S. C., & Rosko, M. (2016). Efficiency and hospital effectiveness in improving Hospital Consumer Assessment of Healthcare Providers and Systems ratings. *Health Care Management Review*, 41(4), 296-305.
- Al-Amin, M., Schiaffino, M. K., Park, S., & Harman, J. (2018). Sustained Hospital Performance on Hospital Consumer Assessment of Healthcare Providers and Systems Survey Measures: What Are the Determinants? *Journal of Healthcare Management*, 63(1), 15-28.
- Andersen, R. M. (1968). *A Behavioral Model of Families' Use of Health Services*. Chicago: University of Chicago, Graduate School of Business, Center for Health Administration Studies
- Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: does it matter? *Journal of Health and Social Behavior*, 1-10.
- Arnett, D. B., Sandvik, I. L., & Sandvik, K. (2018). Two paths to organizational effectiveness—Product advantage and life-cycle flexibility. *Journal of Business Research*, 84, 285-292.
- Arrow, K. J., (1963), Uncertainty and the welfare economics of medical care, *American economic review*, 53, 941-973
- Bai, G, & Anderson, G. F., (2015), Extreme Markup: The Fifty U.S. Hospitals with the Highest Charge-To-Cost Ratios, *Health Affairs*, 34(6), pp. 922-928
- Banaszak-Holl, J. & Keith, R. (2014). Mechanisms for culture change in the U.S. health institutions and the example of the nursing home industry. In Stephen Mick & Patrick Shay (Eds.) *Advances in the health care organization theory* (pp. 99-124). San Francisco, CA: Jossey-Bass
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173.
- Bazzoli, G. J., Chan, B., Shortell, S. M., & D'Aunno, T. (2000). The financial performance of hospitals belonging to health networks and systems. *Inquiry*, 234-252.
- Bazzoli, G. J., Dynan, L., Burns, L. R., & Yap, C. (2004). Two decades of organizational change in health care: what have we learned? *Medical Care Research and Review*, 61(3), 247-331.

- Berkowitz, B. (January 31, 2016) "The Patient Experience and Patient Satisfaction: Measurement of a Complex Dynamic" *The Online Journal of Issues in Nursing* Vol. 21, No. 1, Manuscript 1.
- Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: care, health, and cost. *Health Affairs*, 27(3), 759-769.
- Birkhäuser, J., Gaab, J., Kossowsky, J., Hasler, S., Krummenacher, P., Werner, C., & Gerger, H. (2017). Trust in the health care professional and health outcome: A meta-analysis. *Public Library of Science one*, 12(2), e0170988.
- Blumenthal, D. M., Orav, J. E., Jena, A. B., Dudzinski, D. M., Le, S. T., & Jha. A. K. (2015) Access, Quality, and Costs of Care at Physician Owned Hospitals in the United States: Observational Study. *The British Medical Journal*, 1-7.
- Brennan, N., Barnes, R., Calnan, M., Corrigan, O., Dieppe, P., & Entwistle, V. (2013). Trust in the health-care provider–patient relationship: a systematic mapping review of the evidence base. *International Journal for Quality in Health Care*, 25(6), 682-688.
- Boulding, W., Glickman, S. W., Manary, M. P., Schulman, K. A., & Staelin, R. (2011). Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days. *The American Journal of Managed Care*, 17(1), 41-48.
- Buntin, M. B., Damberg, C., Haviland, A., Kapur, K., Lurie, N., McDevitt, R., & Marquis, M. S. (2006). Consumer-directed health care: early evidence about effects on cost and quality. *Health Affairs*, 25(6), w516-w530.
- Burns, L. R. (1990). The transformation of the American hospital: From community institution toward business enterprise. *Comparative Social Research*, 12(1), 77-112.
- Butler, R. (1997). Organizational Design. In Nicholson, N (Ed.), *Blackwell Encyclopedia of Management* (Vol. 6) (pp. 290-384). Cambridge, MA: Blackwell Publishers
- Callahan, D & Wasunna, A (2006), *Medicine and the Market: Equity v. Choice*, Baltimore: Johns Hopkins University Press.
- Cameron, K. S. (1984). The effectiveness of ineffectiveness. *Research in Organizational Behavior*, 6, 235-285.
- Cameron, K. S. (1986) Effectiveness as paradox: Conflict and consensus in conceptions of organizational effectiveness. *Management Science*, 32, 539-553.
- Cameron, K. S., Freeman, S. J., & Mishra, A. K. (1991). Best practices in white-collar downsizing: Managing contradictions. *The Executive*, 5(3), 57-73.

- Cameron, K., Mora, C., Leutscher, T., & Calarco, M. (2011). Effects of positive practices on organizational effectiveness. *The Journal of Applied Behavioral Science*, 47(3), 266-308.
- Caminiti, C., Meschi, T., Braglia, L., Diodati, F., Iezzi, E., Marcomini, B., ... & Borghi, L. (2013). Reducing unnecessary hospital days to improve quality of care through physician accountability: a cluster randomised trial. *BMC Health Services Research*, 13(1), 14.
- Carter, J., Ward, C., Wexler, D., & Donelan, K. (2018). The association between patient experience factors and likelihood of 30-day readmission: a prospective cohort study. *British Medical Journal Quality & Safety*.
- Casalino, L. P., Devers, K. J., & Brewster, L. R. (2003). Focused factories? Physician-owned specialty facilities. *Health Affairs*, 22(6), 56-67.
- Chang, C. S., Chen, S. Y., & Lan, Y. T. (2013). Service quality, trust, and patient satisfaction in interpersonal-based medical service encounters. *BMC Health Services Research*, 13(1), 22.
- Choudhry, S., Choudhry, N. K., & Brennan, T. A. 2005, Specialty versus Community Hospitals: What Role for the Law? *Health Affairs*, 24, W5-361-72.
- Cimiotti, J. P., Aiken, L. H., Sloane, D. M., & Wu, E. S. (2012). Nurse staffing, burnout, and health care-associated infection. *American Journal of Infection Control*, 40(6), 486-490.
- Cole, C. M. (2013). Physician-owned hospitals and self-referral. *American Medical Association Journal of Ethics*, 15(2), 150-155.
- Cooper, T. L. (2012). *The responsible administrator: An approach to ethics for the administrative role*. John Wiley & Sons.
- Cornelius, L. J., & Bankins, K. A. (2009), as cited in Mullner, R. M. (Ed). *Encyclopedia of Health Services Research* (Vol. 1). Sage.
- Courtney, P. M., Darrith, B., Bohl, D. D., Frisch, N. B., & Della Valle, C. J. (2017). Reconsidering the Affordable Care Act's Restrictions on Physician-Owned Hospitals: Analysis of CMS Data on Total Hip and Knee Arthroplasty. *Journal of Bone and Joint Surgery*, 99(22), 1888-1894.
- Crozier, M. (1973). *The stalled society*. New York: Viking Penguin
- Cuellar, A. E., & Gertler, P. J. (2003). Trends in hospital consolidation: the formation of local systems. *Health Affairs*, 22(6), 77-87.
- Desai, N. R., Ross, J. S., Kwon, J. Y., Herrin, J., Dharmarajan, K., Bernheim, S. M., Krumholz, H. M., & Horwitz, L. I. (2016). Association between hospital penalty status under the hospital readmission reduction program and readmission rates for target and nontarget conditions. *The Journal of the American Medical Association*, 316(24), 2647-2656.

Devereaux, P. J., Peter T.L. Choi, Christina Lacchetti, Bruce Weaver, Holger J. Schünemann, Ted Haines, John N. Lavis, Brydon J.B. Grant, David R.S. Haslam, Mohit Bhandari, Terrence Sullivan, Deborah J. Cook, Stephen D. Walter, Maureen Meade, Humaira Khan, Neera Bhatnagar, Gordon H. Guyatt (2002). A systematic review and meta-analysis of studies comparing mortality rates of private for-profit and private not-for-profit hospitals. *Canadian Medical Association Journal*, 166 (11), 1399-1406

Devereaux, P. J., Heels-Ansdell, D., Lacchetti, C., Haines, T., Burns, K. E., Cook, D. J., ... & Patel, R. (2004). Payments for care at private for-profit and private not-for-profit hospitals: a systematic review and meta-analysis. *Canadian Medical Association Journal*, 170(12), 1817-1824.

Dharmarajan, K., Hsieh, A. F., Lin, Z., Bueno, H., Ross, J. S., Horwitz, L. I., ... & Drye, E. E. (2013). Hospital readmission performance and patterns of readmission: retrospective cohort study of Medicare admissions. *The British Medical Journal*, 347, f6571.

DiMaggio, P., & Powell, W. W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48(2), 147-160.

Doherty, R. B. (2004). Assessing the new Medicare prescription drug law. *Annals of internal medicine*, 141(5), 391-395.

Donabedian, A., (1980). *The definition of quality and approaches to its assessment*. Ann Arbor.

Donabedian, A. (1990). The seven pillars of quality. *Archives of Pathology & Laboratory Medicine*, 114(11), 1115-1118.

Donabedian, A. (2005). Evaluating the quality of medical care. *The Milbank Quarterly*, 83(4), 691-729.

Edwards, M. T. (2017). An organizational learning framework for patient safety. *American Journal of Medical Quality*, 32(2), 148-155.

Eggleston, K., Shen, Y. C., Lau, J., Schmid, C. H., & Chan, J. (2006). *Hospital ownership and quality of care: what explains the different results?* (No. w12241). National Bureau of Economic Research.

Eliason, P. J., Grieco, P. L., McDevitt, R. C., & Roberts, J. W. (2016). *Strategic Patient Discharge: The Case of Long-Term Care Hospitals* (No. w22598). National Bureau of Economic Research.

Feldman, R., Parente, S. T., & Christianson, J. B. (2007). Consumer-directed health plans: new evidence on spending and utilization. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 44(1), 26-40.

- Feldstein, M. (1971). *The rising cost of hospital care*. Washington, DC: Information Resources Press for the National Center for Health Services Research and Development
- Fennell, M. L., & Alexander, J. A. (1993). Perspectives on organizational change in the U.S. medical care sector. *Annual Review of Sociology*, 19(1), 89-112.
- Finer, H. (1941). Administrative responsibility in democratic government. *Public Administration Review*, 1(4), 335-350.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley
- Forster, A. J., Murff, H. J., Peterson, J. F., Gandhi, T. K., & Bates, D. W. (2003). The incidence and severity of adverse events affecting patients after discharge from the hospital. *Annals of Internal Medicine*, 138,161–167.
- Frank, R. G., & Salkever, D. S. (1994). Nonprofit organizations in the health sector. *Journal of economic Perspectives*, 8(4), 129-144.
- Friedrich, C. (1935). Responsible government service under the American constitution. Monograph in Friedrich, C. J., et al. (ed). *Problems of the American Public Service* (Vol. 7). New York: McGraw-Hill.
- Fuchs, V. (1974), *Who shall live? Health, economics, and social choice*. New York: Basic Books
- Gabel JR, Fahlman C, Kang R, Wozniak G, Kletke P, Hay JW. (2008). Where do I send thee? Does physician-ownership affect referral patterns to ambulatory surgery centers? *Health Affairs*, 27, 165-74.
- Gadalean, I, Cheptea, M, & Constantin, I (2011). Evaluation of patient satisfaction. *Applied Medical Informatics*, 29(4), 41-47.
- Gillies, R. R., Shortell, S. M., Anderson, D. A., Mitchell, J. B., & Morgan, K. L. (1993). Conceptualizing and measuring integration: findings from the health systems integration study. *Journal of Healthcare Management*, 38(4), 467.
- Gilbert, G. R., & Parhizgari, A. M. (2000). Organizational effectiveness indicators to support service quality. *Managing Service Quality: An International Journal*, 10(1), 46-52.
- Ginsburg, P. B., (2000), Are focused factories the wave of the future?" *Frontier Health Services Management*, vol. 16, (3), pp. 41-46.
Available: <http://login.ezproxy.lib.vt.edu/login?url=https://search-proquest-com.ezproxy.lib.vt.edu/docview/203857633?accountid=14826>.

- Gold, M. (2009). Medicare's private plans: a report card on Medicare Advantage. *Health Affairs*, 28(1), w41-w54.
- Gray, B. H. (1986), *For-profit enterprise in health care*. Washington, DC: National Academy Press
- Greenwald, L., Cromwell, J., Adamache, W., Bernard, S., Drozd, E., Root, E., & Devers, K. (2006). Specialty versus community hospitals: referrals, quality, and community benefits. *Health Affairs*, 25(1), 106-118.
- Gresov, C., & Drazin, R. (1997). Equifinality: Functional equivalence in organization design. *Academy Of Management Review*, 22(2), 403-428.
- Haas, S., Gawande, A., & Reynolds, M. E. (2018). The Risks to Patient Safety From Health System Expansions. *The Journal of the American Medical Association*, 319(17), 1765-1766.
- Hachem, F., Canar, J., Fullam, M. A., Andrew, S., Hohmann, S., & Johnson, C. (2014). The relationships between HCAHPS communication and discharge satisfaction items and hospital readmissions. *Patient Experience Journal*, 1(2), 71-77.
- Hall, J. A., & Dornan, M. C. (1990). Patient sociodemographic characteristics as predictors of satisfaction with medical care. *Social Science & Medicine*, 6, 811-818.
- Hannan, M. T., & Freeman, J. (1993). *Organizational Ecology*. Harvard university press.
- Hansmann, H. (1987). Economic theories of nonprofit organizations. *The Nonprofit Sector: Research Handbook*, 27-42.
- Hermann, R. C., Ettner, S. L., & Dorwart, R. A. (1998). The influence of psychiatric disorders on patients' ratings of satisfaction with health care. *Medical Care*, 36, 720-727.
- Herrin, J., St. Andre, J., Kenward, K., Joshi, M. S., Audet, A. M. J., & Hines, S. C. (2015). Community factors and hospital readmission rates. *Health Services Research*, 50(1), 20-39.
- Herring, B., Gaskin, D., Zare, H., & Anderson, G. (2018). Comparing the Value of Nonprofit Hospitals' Tax Exemption to Their Community Benefits. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 55, 0046958017751970.
- Herzlinger, 2004, Specialization and Its Discontents: The Pernicious Impact of Regulations against Specialization and Physician Ownership on the U.S. Healthcare System. *Circulation*, 109(20), 2376-2378.
- Herzlinger, R. E. (2007). *Who Killed Health Care?: America's \$2 Trillion Medical Problem--and the Consumer-driven Cure*. New York: Mc-Graw Hill.

Heskett, J. L., Sasser, W. E., & Hart, C. W. L. (1990). *Service breakthroughs*. New York: Free Press

Hirth, R. A. (1999). Consumer information and competition between nonprofit and for-profit nursing homes. *Journal of Health Economics*, 18(2), 219-240.

Hollis, S. R. (1997). Strategic and Economic Factors In The Hospital Conversion Process: A financial expert, who has advised numerous hospitals on conversions, provides an insider's look at the process and offers advice to hospital boards considering affiliation. *Health Affairs*, 16(2), 131-143.

Horwitz, J. R. (2005). Making profits and providing care: comparing nonprofit, for-profit, and government hospitals. *Health Affairs*, 24(3), 790-801.

Horwitz, J. R. (2007). Does nonprofit ownership matter. *Yale Journal On Regulation*, 24, 139-204.

Huerta, T. R., Harle, C. A., Ford, E. W., Diana, M. L., & Menachemi, N. (2016). Measuring patient satisfaction's relationship to hospital cost efficiency: Can administrators make a difference? *Health Care Management Review*, 41(1), 56-63.

Iacobucci, D., Schneider, M. J., Popovich, D. L., & Bakamitsos, G. A. (2017). Mean centering, multicollinearity, and moderators in multiple regression: The reconciliation redux. *Behavior Research Methods*, 49(1), 403-404.

Iannuzzi, J., Kahn, S., Zhang, L., Gestring, J., Noyes, K., & Monson, J. (2015). Getting satisfaction: Drivers of surgical hospital consumer assessment of health care providers and systems survey scores. *Journal of Surgical Research*, 197, 155-161.
doi:10.1016/j.jss.2015.03.045

Jackson, J., Chamberlin, J., & Kroenke, K. (2001). Predictors of patient satisfaction. *Social Science and Medicine*, 52, 609-620.

Jacobs, K. (2016). Patient Satisfaction by Design. *Seminars in Hearing*. 37(4), 316-324

Jha, A. K., Orav, E. J., Zheng, J., & Epstein, A. M. (2008). Patients' perception of hospital care in the United States. *New England Journal of Medicine*, 359(18), 1921-1931.

Jindal, R. P., Gauri, D. K., Singh, G., & Nicholson, S. (2018). Factors influencing hospital readmission penalties: Are they really under hospitals' control?. *Decision Support Systems*, 110, 58-70.

Kahn, S., Iannuzzi, J., Stassen, J., Bankey, P., and Gestring, M. (2015). Measuring satisfaction: Factors that drive hospital consumer assessment of healthcare providers and systems survey responses in a trauma and acute care surgery population. *The American Surgeon*, May (61), 537-543.

- Kennedy, G. D., Tevis, S. E., & Kent, K. C. (2014). Is there a relationship between patient satisfaction and favorable outcomes? *Annals of Surgery*, 260(4), 592-600.
- Kessel, R. A. (1970). The AMA and the supply of physicians. *Law and Contemporary Problems*, 35, 167-183
- Kettl, D. F. (2015). *The transformation of governance: Public administration for the twenty-first century*. Johns Hopkins University Press.
- Kimberly, J. R. (1979). Issues in the creation of organizations: Initiation, innovation, and institutionalization. *Academy of Management Journal*, 22(3), 437-457.
- Kohn K. T., Corrigan, J.M., & Donaldson, M.S. (2000). *To Err Is Human: Building a Safer Health System*. Washington, DC: National Academy Press
- Kupfer, J., & Bond, E. (2012). Patient satisfaction and patient-centered care: Necessary but not equal. *The Journal of the American Medical Association*, 308(2), 139-140.
doi:10.1001/jama.2012.7381
- Laloux, F. (2014). *Reinventing organizations: A guide to creating organizations inspired by the next stage in human consciousness*. Nelson Parker.
- Leape, L. L., & Berwick, D. M. (2005). Five Years after to Err Is Human: What Have We Learned?. *Journal of the American Medical Association*, 293(19), 2384– 2390.
- Leigh, J. P., Tancredi, D., Jerant, A., & Kravitz, R. L. (2010). Physician wages across specialties: informing the physician reimbursement debate. *Archives of Internal Medicine*, 170(19), 1728-1734.
- Lewis, G., Kirkham, H., Duncan, I., & Vaithianathan, R. (2013). How health systems could avert ‘triple fail’ events that are harmful, are costly, and result in poor patient satisfaction. *Health Affairs*, (32)4, 669-675. doi:10.1377/hlthaff.2012.1350
- Luke, R. D., Luke, T., & Muller, N. (2011). Urban hospital ‘clusters’ do shift high-risk procedures to key facilities, but more could be done. *Health Affairs*, 30(9), 1743-1750.
- Ly, D. P., & Cutler, D. M. (2018). Factors of US hospitals associated with improved profit margins: An observational study. *Journal of General Internal Medicine*, 1-8.
- Ma, G. K., Brensinger, C. M., Wu, Q., & Lewis, J. D. (2017). Increasing incidence of multiply recurrent *Clostridium difficile* infection in the United States: a cohort study. *Annals of Internal Medicine*, 167(3), 152-158.
- Manary, M., Staelin, R., Kosel, K., Schulman, K. A., & Glickman, S. W. (2015). Organizational characteristics and patient experiences with hospital care: A survey study of hospital chief

patient experience officers. *American Journal of Medical Quality*, 1-9. DOI: 10.1177/1062860614539994

Marple, R., Lucey, C., Kroenke, K., Wilder, J., & Lucas, C. (1997). A prospective study of concerns and expectations in patients presenting with common symptoms. *Archives of Internal Medicine*, 157, 1482-1488.

McCrum ML, Joynt KE, Orav E, Gawande AA, Jha AK. Mortality for publicly reported conditions and overall hospital mortality rates. *The Journal of the American Medical Association Internal Medicine*, 173, 1351-1357.

McGrath, R. G. (2006). Beyond contingency: From structure to structuring in the design of the contemporary organization. *The Sage handbook of Organization Studies*. London: Sage Publications, 577-597.

McKinley, W. (1992). Decreasing organizational size: To untangle or not to untangle? *Academy of Management Review*, 17(1), 112-123.

McKinley W., Sanchez C.M., & Schick, A.G. (1995). Organizational Downsizing: Constraining, cloning and learning. *Academy of Management Executive*, 9(3), 32-44.

McNabb, D. E. (2002). *Research methods in public administration and nonprofit management*. New YORK: M. E. Sharpe

Mendez, C. M., Harrington, D. W., Christenson, P., & Spellberg, B. (2014). Impact of hospital variables on case mix index as a marker of disease severity. *Population Health Management*, 17(1), 28-34.

Mick, S. S., & Shay, P. D. (2014). *Advances in health care organization theory*. 2nd ed., San Francisco, CA: Jossey-Bass.

Moe, R. C. (1987). Exploring the limits of privatization. *Public Administration Review*, 453-460.

Nikpay, S. S., Richards, M. R., & Penson, D. (2018). Hospital-Physician Consolidation Accelerated In The Past Decade In Cardiology, Oncology. *Health Affairs*, 37(7), 1123-1127.

Nieman, C. L., Benke, J. R., & Boss, E. F. (2015). Does Race/Ethnicity or Socioeconomic Status Influence Patient Satisfaction in Pediatric Surgical Care? *Otolaryngology--Head and Neck Surgery*, 153(4), 620-628.

Osborne, D., & Gaebler, T. (1992). *Reinventing government: How the entrepreneurial spirit is transforming government*. Reading Mass. Adison Wesley Public Comp.

Palmeri, M., Pipas, C., Wadsworth, E., & Zubkoff, M. (2010). Economic impact of a primary care career: a harsh reality for medical students and the nation. *Academic Medicine*, 85(11), 1692-1697.

Parand, A., Dopson, S., Renz, A., & Vincent, C. (2014). The role of hospital managers in quality and patient safety: a systematic review. *British Medical Journal Open*, 4(9), e005055.

Parke, M. R., & Seo, M. G. (2017). The role of affect climate in organizational effectiveness. *Academy of Management Review*, 42(2), 334-360.

Parsons, T. (1951) *The Social System*. London: Routledge

Perry, J. E., 2010, A Mortal Wound for Physician-Owned Specialty Hospitals? The Legal and Ethical Prognosis for Market-Driven, Entrepreneurial Medicine in the Wake of 2010 Health Care Insurance Reforms, Invited Paper Participant, AMERICAN BUSINESS LAW JOURNAL Invited Scholars Colloquium, 2010 Academy of Legal Studies in Business Annual Meeting, August 3, 2010, Richmond, VA

Perry, J. E. (2012). Physician-Owned Specialty Hospitals and the Patient Protection and Affordable Care Act: Health Care Reform at the Intersection of Law and Ethics. *American Business Law Journal*, 49(2), 369-417.

Pham, H. H., Devers, K. J., May, J. H., & Berenson, R. (2004). *Financial pressures spur physician entrepreneurialism*. *Health Affairs*, 23(2), 70-81.

Plummer, E., & Wempe, W. (2016). The Affordable Care Act's effects on the formation, expansion, and operation of physician-owned hospitals. *Health Affairs*, 35(8), 1452-1460.

Price, R., Elliott, M., Cleary, P., Zaslavsky, A., & Hays, R. (2014). Should health care providers be accountable for patients' care experiences? *Journal of General Internal Medicine*, 30(2), 253-256. doi:10.1007/s11606-014-3111-7

Prince, T. R., & Ramanan, R. (1994), Operating Performance and Financial Constraints of Catholic Community Hospitals, 1986-1989, *Health Care Management Review* 19, no. 4, pp. 38-48.

Pugh, D. S., & Hickson, D. J. (1989). *Writers on organizations*. Penguin Books.

Reinhardt, U. E. (2000). The economics of for-profit and not-for-profit hospitals. *Health Affairs*, 19(6), 178-186.

Robinson, C. A. (2016). Trust, health care relationships, and chronic illness: a theoretical coalescence. *Global qualitative nursing research*, 3, 2333393616664823.

Rossiter, L. F., & Wilensky, G. R. (1983). A reexamination of the use of physician services: the role of physician-initiated demand. *Inquiry* 20(2), 162-172

Rubin, H. R., Gandek, B., Rogers, W. H., Kosinski, M., McHorney, C. A., & Ware, J. E. (1993). Patients' ratings of outpatient visit in different practice settings. Results of the medical outcomes study. *The Journal of the American Medical Association*, 270, 835 - 840.

- Ryan, W. (1999). *The Landscape for Nonprofits*. Harvard Business Review, 77, 127–137. [LSEP]
- Schmocker, R., Stafford, L., Siy, A., Levenson, G., & Winslow, E. (2015). Understanding the determinants of patient satisfaction with surgical care using the Consumer Assessment of Healthcare Providers and Systems surgical care survey (S-CAHPS). *Surgery*, 158(6), 1724-1733. doi:10.1016/j.surg.2015.06.018
- Scott, W. R. (2003). *Organizations: Rational, natural and open systems*. Upper Saddle River, NJ: Prentice Hall.
- Scott, W. R., Ruef, M., Mendel, P. J., & Caronna, C. A. (2000). *Institutional change and healthcare organizations: From professional dominance to managed care*. University of Chicago Press.
- Sloan, F. A., Picone, G. A., Taylor, D. H., & Chou, S. Y. (2001). Hospital ownership and cost and quality of care: is there a dime's worth of difference? *Journal of Health Economics*, 20(1), 1-21.
- Spaulding, A., Edwardson, N., & Zhao, M. (2018). Hospital Value-Based Purchasing Performance: Do Organizational and Market Characteristics Matter? *Journal of Healthcare Management*, 63(1), 31-48.
- Stelfox, H. T., Palmisani, S., Scurlock, C., Orav, E. J., & Bates, D. W. (2006). The 'To Err Is Human' Report and the Patient Safety Literature. *Quality and Safety in Health Care*, 15(3), 174–178.
- Starr, P. (2008). *The social transformation of American medicine: The rise of a sovereign profession and the making of a vast industry*. Basic books.
- Sultz, H. A., & Young, K. M. (2006), *Health Care USA: Understanding Its Organization and Delivery*, Sudbury, MA: Jones and Bartlett Publishers.
- Swanson, A. (2013). *Physician Investment in Hospitals: Specialization, Incentives, and the Quality of Cardiac Care*. Hosted by University of California Berkeley, Economics Department, Retrieved from http://repository.upenn.edu/hcmg_papers/9
- Tarchichi, T. R., Garrison, J., Jeong, K., & Fabio, A. (2017). Comparison of Patient Outcome Measures between a Traditional Teaching Hospitalist Service and a Non-Teaching Hospitalist Service at an Academic Children's Hospital. *Pediatrics & Therapeutics: Current Research*, 7(4), 336.
- Temkin-Greener, H., & Winchell, M. (1991). Medicaid beneficiaries under managed care: provider choice and satisfaction. *Health Services Research*, 26, 509-529.
- Tevis, S. E., Kennedy, G. D., & Kent, K. C. (2015). Is there a relationship between patient satisfaction and favorable surgical outcomes? *Advances in Surgery*, 49(1), 221-233.

Thi, P. L. N., Briancon, S., Empereur, F., & Guillemin, F. (2002). Factors determining inpatient satisfaction with care. *Social Science & Medicine*, 54(4), 493-504.

Thorne, S. E., Robinson, C. A. (1989). Guarded alliance: Health care relationships in chronic illness. *Image: Journal of Nursing Scholarship*, 21, 153–157.

Tsai, T. C., Orav, E. J., & Jha, A. K. (2015). Patient satisfaction and quality of surgical care in U.S. hospitals. *Annals of Surgery*, 261(1), 2-8.

Wagner, E. H. (2000). The role of patient care teams in chronic disease management. *British Medical Journal*. 320(7234), 569-572.

Wamsley, G. L., & Zald, M. N. (1973). The political economy of public organizations. *Public Administration Review*, 62-73.

Waniga, H. M., Gerke, T., Shoemaker, A., Bourgoine, D., & Eamranond, P. (2016). The Impact of Revised Discharge Instructions on Patient Satisfaction. *Journal of Patient Experience*, 3(3), 64-68.

Wennberg, J. E., et al. (2009), *The Quality of Medical Care in the United State: A Report on the Medicare Program, The Dartmouth Atlas of Health Care*. Chicago: American Hospital Association

Wennberg, J. E., & Wennberg, D.E. (2003). Perspective: Addressing Variations: Is There Hope for the Future? *Health Affairs*, 34

Welle-Powell, D. (2009). Physician-owned specialty hospitals: friend, foe--or (system) failure? *Healthcare Financial Management*, 63(1), 26-28.

Westphal, J. D., Gulati, R., & Shortell, S. M. (1997). Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption. *Administrative Science Quarterly*, 366-394.

White, W. D. (1982). The American hospital industry since 1900: a short history. *Advances in Health Economics and Health Services Research*, 3, 143-170.

Wilensky, G. R. (2006). Consumer-driven health plans: early evidence and potential impact on hospitals. *Health Affairs*, 25(1), 174-185.

Williams, B. (1994). Patient satisfaction: a valid concept. *Social Science & Medicine*, 38, 509-516.

Williams, S. J., & Calnan, M. (1991). Convergence and divergence: assessing criteria of consumer satisfaction across general practice, dental and hospital care settings. *Social Science & Medicine*, 33, 707-716.

Wolfe, S. M., Woolhandler, S., & Himmelstein, D. U. (2018). It is time to liberate hospitals from profit-centered care. *Journal of General Internal Medicine*, 33(7), 980-2. DOI: 10.1007/s11606-018-4448-0

Woolhandler, S., & Himmelstein, D. U. (1997). Costs of care and administration at for-profit and other hospitals in the United States. *New England Journal of Medicine*, 336(11), 769-774.

Woolhandler, S., & Himmelstein, D. U. (2004). The high costs of for-profit care. *Canadian Medical Association Journal*, 170(12), 1814-1815.

Worth, M. J. (2012). *Nonprofit Management: Principles and Practice*. Sage.

Young, G. J. (2013). Redefining payer-provider relationships in an era of pay for performance: A social capital perspective. *Quality Management in Health Care*, 22(3), 187-198. doi: 10.1097/QMH.0b013e31829a6af3

Young, K. M., & Fisher, C. R. (1980). Medicare Episodes of Illness: A Study of Hospital, Skilled Nursing Facility, and Home Health Agency Care. *Health Care Financing Review*, 2(2), 1-23.

Zastowny, T. R., Roghman, K. J., & Hengst, A. (1983). Satisfaction with medical care: replications and theoretic reevaluation. *Medical Care*, 21, 294-322

Zheng, B., Zhang, J., Yoon, S. W., Lam, S. S., Khasawneh, M., & Poranki, S. (2015). Predictive modeling of hospital readmissions using metaheuristics and data mining. *Expert Systems with Applications*, 42(20), 7110-7120.

Zuckerman, R. B., Sheingold, S. H., Orav, E. J., Ruhter, J., & Epstein, A. M. (2016). Readmissions, observation, and the hospital readmissions reduction program. *New England Journal of Medicine*, 374(16), 1543-1555.

Appendix Section A

Letter by PHA President, Dr. Blake Curd, to the U.S. Congressmen. I used the list of POHs attached in this letter to randomly select POHs for this study. I downloaded a copy of this letter from the PHA's website in Fall 2016.



2025 M Street NW, Suite 800
Washington, DC 20036
(202) 367-1113 • (202) 367-2113
info@physicianhospitals.org
www.physicianhospitals.org

June 6, 2016

Dear Representative,

On behalf of Physician Hospitals of America (PHA) and the approximately 250 physician-owned hospitals (POHs) across the country (see complete list below), we wish to express our opposition to H.R. 5273, "The Helping Hospitals Improve Patient Care Act of 2016."

H.R. 5273 was written to address a number of Medicare moratoria that negatively impact certain categories of hospitals across the country. Specifically, H.R. 5273:

- Provides relief for Hospital Outpatient Departments (HOPDs) that were under development when the site neutral payment policy was enacted
- Exempts all cancer hospitals from being subject to the new site neutral payment policy; and
- Allows long-term acute care hospitals (LTCHs) to expand.

H.R. 5273 does not, however, provide any relief for some of the highest quality, lowest cost hospitals in the country – hospitals with physician ownership. These hospitals, which proudly participate in the Medicare program, are subject to a strict moratorium on expansion which prohibits them from adding a single inpatient bed, operating room or procedure room. Yet hospitals *without* physician ownership are not subject to any federal prohibition on expansion, including those hospitals that are low quality and high cost.

Hospital and health system mergers and acquisitions across the nation have grown by 70 percent since 2010. This increased concentration in health care ultimately disadvantages consumers, as mergers allow hospitals to leverage their market position and drive up prices. They do through HOPD surcharges for physician services and ambulatory surgery (ASC) procedures rendered by health systems that own practices and ASCs. In contrast, hospitals with physician ownership have consistently lowered costs while substantially raising the bar on safety and quality of patient care. Competition in the hospital industry is critical to bending the cost curve and improving quality, yet H.R. 5273 only further empowers the big health systems to leverage their market share in order to inflate medical bills and drive up consumers' health care costs.

The national associations that represent these for-profit and non-profit health systems (including the American Hospital Association (AHA) and the Federation of American Hospitals (FAH)) support the current prohibition on physician ownership of new hospitals, enacted in the Affordable Care Act (ACA), because it eliminates their members' most effective competitors.

This ban is anti-free market, anti-consumer, and discriminates against patients who are consistently and overwhelmingly satisfied by the care they receive at these hospitals. Congressman Sam Johnson (R-TX) and a bipartisan group of cosponsors from across the country have proposed legislation, H.R. 2513, that would allow physician-owned hospitals to have an opportunity to expand (subject to the current limitations of the ACA) if they can demonstrate consistent, high quality care over a 3-year period as measured by the hospital star ratings program. While we strongly oppose the federal ban on physician ownership of hospitals and believe it must be overturned, the Johnson bill is a reasonable proposal that addresses the most discriminatory aspect of the ban, which is the strict prohibition on expansion. The AHA and FAH have accused physician-owned hospitals of gaming the system and have grossly mischaracterized the Johnson bill. To be clear:

1. **The Johnson bill – H.R. 2513 – does not change any aspect of the Stark self-referral law or its exceptions.** While patients would greatly benefit from increased hospital competition to improve quality of care and lower costs, the Johnson bill does not allow any new POHs to be built and participate in the Medicare program. While a few new POHs have been built post-ACA, they are strictly prohibited by the ACA from treating any Medicare, Medicaid or TriCare patients.
2. **The bill does not allow for “unfettered” expansion of existing POHs that were grandfathered under the law by the ACA.** Only 7POHs in the entire country can meet the eligibility requirements for expansion enacted as part of the ACA. The Johnson bill addresses this by requiring POHs to demonstrate *quality outcomes for their patients*. For those POHs who have a need to grow to meet community demand, they would not be eligible to do so unless they demonstrate consistent quality outcomes by receiving at least three out of five possible stars for 3 years in a row. If CMS approves a POH request for expansion, they would still be subject to the limits imposed by ACA and would not be able to expand beyond 200 percent of the baseline number of beds at the time the law was enacted. These hospitals would also be subject to their respective state’s certificate of need laws, if applicable.
3. **The bill would *not* increase the deficit, as the AHA has claimed.** While publicly-released data from the Centers for Medicare & Medicaid Services confirms that POHs cost Medicare significantly less money than their non-POH counterparts, CBO is requiring the cost of the Johnson bill to be offset. The offset comes directly from the physician-owned hospital industry and will cover the full cost of the change in law.
4. **The bill would not impact any state that does not have POHs.** There are 34 states with hospitals that have some form of physician ownership. States without POHs would not in any way be affected by the Johnson bill.

Finally, the AHA and FAH continue to refer to non-peer-reviewed, limited studies of “specialty hospitals” performed more than a decade ago to justify their tired allegation that hospitals with physician ownership are “cherry picking”.

A peer-reviewed study undertaken in a combined effort by health policy leaders from Harvard, Stanford and UCLA) that was recently published in the distinguished British Medical Journal (BMJ) has concluded that physician-owned hospitals are not “cherry picking”. In fact, this independent study – one of the largest and most comprehensive examinations of such hospitals to date – examined 2,186 acute care hospitals including 219 hospitals with physician ownership and concluded: *“We found no clinically or statistically significant differences in the patient mix between POHs and non-POHs. For example, POHs and non-POHs admitted similar proportions of Medicare patients, Medicaid patients, black patients, and Hispanic patients.”* The study further concluded, “Our work suggests that some of the major criticisms of [physician-owned hospitals], including that they select more profitable patients, provide lower value care, and threaten the financial viability of surrounding hospitals, may no longer be valid.” The authors believe their findings indicate a need to re-examine existing public policies that target hospitals with physician ownership. <http://www.bmj.com/content/351/bmj.h4466>

In both independent, peer-reviewed academic studies as well as government quality programs, physician-owned hospitals have consistently demonstrated their value and proven time and again that they provide exceptional care to their patients. These quality outcomes are a direct result of the physician ownership model, which gives physicians maximum professional control over the care provided to their patients. Ownership empowers physicians to improve their professional productivity and ensure their staff is skilled and well trained, and also ensures that utilization of the equipment and supplies being purchased are cost-effective and optimally suited for the patient. The quality of care provided at these hospitals is so exemplary that approximately 70 percent of the physicians who practice at them have no ownership whatsoever in the facility. Also, more and more not-for-profit and for-profit systems are recognizing the value of physician ownership and are therefore forming joint partnerships with physicians to drive high-quality, lower cost outcomes.

Below is the list of hospitals with physician ownership* that are not permitted to add a single bed, operating or procedure room unless they meet a set of criteria that almost no hospital with physician ownership will ever meet unless the law changes. Please keep this in mind as you consider H.R. 5273 as it maintains the prohibition on expansion for every hospital on this list.

Sincerely,



R. Blake Curd, M.D.
President, Physician Hospitals of America

*The information provided on this list is based on datasets on the Center for Medicare and Medicaid Services' Hospital Compare Website, individual hospital websites, and membership with PHA.

Rep. Abraham, Ralph (R-LA)

- Central Louisiana Surgical Hospital, Alexandria, LA
- Green Clinic Surgical Hospital, Ruston, LA
- Monroe Surgical Hospital, Monroe, LA
- Ouachita Community Hospital, West Monroe, LA
- P & S Surgical Hospital, Monroe, LA
- Promise Hospital of Miss Lou, Vidalia, LA

Rep. Aderholt, Robert (R-AL)

- Riverview Regional Medical Center, Gadsden, AL

Rep. Allen, Rick (R-GA)

- East Georgia Regional Medical Center, Statesboro, GA
- Trinity Hospital of Augusta, Augusta, GA

Rep. Ashford, Brad (D-NE)

- Midwest Surgical Hospital, Omaha, NE
- Nebraska Orthopaedic Hospital, Omaha, NE
- Nebraska Spine Hospital, Omaha, NE

Rep. Babin, Brian (R-TX)

- Doctors Diagnostic Hospital, Cleveland, TX

- St. Luke's Patients Medical Center, South Pasadena, TX

Rep. Barletta, Lou (R-PA)

- Sunbury Community Hospital, Sunbury, PA

Rep. Barton, Joe (R-TX)

- Baylor Orthopedic and Spine Hospital at Arlington, Arlington, TX
- Texas Health Heart & Vascular Hospital Arlington, Arlington, TX

Rep. Bass, Karen (D-CA)

- Miracle Mile Medical Center, Los Angeles, CA
- Olympia Medical Center, Los Angeles, CA

Rep. Becerra, Xavier (D-CA)

- Pacific Alliance Medical Center, Los Angeles, CA

Rep. Bilirakis, Gus (R-FL)

- Bayfront Health Dade City, Dade City, FL

Rep. Bishop, Rob (R-UT)

- Davis Hospital and Medical Center, Layton, UT

Rep. Black, Diane (R-TN)

- DeKalb Community Hospital, Smithville, TN
- Harton Regional Medical Center, Tullahoma, TN

- Medical Center of Manchester, Manchester, TN
- Stones River Hospital, Woodbury, TN
- United Regional Medical Center, Manchester, TN

Rep. Blackburn, Marsha (R-TN)

- Perry Community, Linden, TN

Rep. Boustany, Charles (R-LA)

- Heart Hospital of Lafayette, Lafayette, LA
- Lafayette General Surgical Hospital, Lafayette, LA
- Lafayette Surgical Specialty Hospital, Lafayette, LA
- Park Place Surgical Hospital, Lafayette, LA

Rep. Brady, Kevin (R-TX)

- Aspire Hospital, Conroe, TX
- Memorial Hermann Surgical Hospital Kingwood, Kingwood, TX
- St. Luke's Lakeside Hospital, The Woodlands, TX

Rep. Bridenstine, Jim (R-OK)

- Bailey Medical Center, Owasso, OK
- Oklahoma Surgical Hospital, Tulsa, OK
- Pinnacle Specialty Hospital, Tulsa, OK
- Tulsa Spine & Specialty Hospital, Tulsa, OK

Rep. Brooks, Mo (R-AL)

- Crestwood Medical Center, Huntsville, AL

Rep. Brooks, Susan (R-IN)

- Indiana Orthopaedic Hospital, Indianapolis, IN
- St. Vincent Heart Center of Indiana, Indianapolis, IN

Rep. Bucshon, Larry (R-IN)

- Harsha Behavioral Center, Terre Haute, IN
- Heart Hospital at Deaconess Gateway, Newburgh, IN

Rep. Burgess, Michael (R-TX)

- Atrium Medical Center, Corinth, TX
- Baylor Emergency Medical Center, Aubrey, TX
- Baylor Medical Center at Trophy Club, Trophy Club, TX
- Heart Hospital Baylor Denton, Denton, TX
- Texas Health Presbyterian Hospital Flower Mound, Flower Mound, TX

Rep. Butterfield, G.K. (D-NC)

- North Carolina Specialty Hospital, Durham, NC

Rep. Cartwright, Matt (D-PA)

- Coordinated Health Orthopedic Hospital, Bethlehem, PA

Rep. Castro, Joaquin (D-TX)

- Foundation Surgical Hospital of San Antonio, San Antonio, TX

Rep. Chu, Judy (D-CA)

- Alhambra Hospital Medical Center, Alhambra, CA

Rep. Cole, Tom (R-OK)

- Community Hospital, Oklahoma City, OK
- Midwest Regional Medical Center, Midwest City, OK

Rep. Collins, Doug (R-GA)

- Fannin Regional Hospital, Blue Ridge, GA

Rep. Conaway, Michael (R-TX)

- Basin Healthcare Center, Odessa, TX
- Odessa Regional Hospital, Odessa, TX
- San Angelo Community Medical Center, San Angelo, TX

Rep. Cooper, Jim (D-TN)

- St. Thomas Hospital for Spinal Surgery, Nashville, TN

Rep. Costello, Ryan (R-PA)

- Physicians Care Surgical Hospital, Royersford, PA
- Surgical Institute of Reading, Wyomissing, PA

Rep. Cuellar, Henry (D-TX)

- Doctor's Hospital of Laredo, Laredo, TX
- Laredo Medical Center, Laredo, TX

Rep. Culberson, John (R-TX)

- Houston Orthopedic & Spine Hospital, Bellaire, TX
- North Cypress Medical Center, Cypress, TX
- Westside Surgical Hospital, Houston, TX

Rep. Curbelo, Carlos (R-FL)

- Fox Medical Center, Miami, FL

Rep. DeFazio, Peter (D-OR)

- McKenzie-Willamette Medical Center, Springfield, OR

Rep. Denham, Jeff (R-CA)

- Stanislaus Surgical Hospital, Modesto, CA

Rep. Dent, Charles (R-PA)

- Surgical Specialty Center at Coordinated Health – Allentown, Allentown, PA

Rep. Farenthold, Blake (R-TX)

- South Texas Surgical Hospital, Corpus Christi, TX

Rep. Fitzpatrick, Michael (R-PA)

- Rothman Orthopaedic Specialty Hospital, Bensalem, PA

Rep. Fleming, John (R-LA)

- Doctors Hospital at Deer Creek, Leesville, LA
- Specialists Hospital Shreveport, Shreveport, LA

Rep. Flores, Bill (R-TX)

- Physicians Centre, Bryan, TX

Rep. Fortenberry, Jeff (R-NE)

- Bellevue Medical Center, Bellevue, NE
- Lincoln Surgical Hospital, Lincoln, NE

Rep. Fudge, Marcia (D-OH)

- Crystal Clinic Orthopaedic Center, Akron, OH

Rep. Gallego, Ruben (D-AZ)

- The CORE Institute Specialty Hospital, Phoenix, AZ

Rep. Garamendi, John (D-CA)

- Sutter Surgical Hospital - North Valley, Yuba City, CA

Rep. Gohmert, Louie (R-TX)

- Texas Spine & Joint Hospital, Tyler, TX
- Woodland Heights Medical Center, Lufkin, TX

Rep. Gosar, Paul (R-AZ)

- Florence Hospital at Anthem, Florence, AZ
- Havasu Regional Medical Center, Lake Havasu City, AZ

Rep. Gowdy, Trey (R-SC)

- Mary Black Memorial Hospital, Spartanburg, SC

Rep. Granger, Kay (R-TX)

- Baylor Surgical Hospital at Fort Worth, Fort Worth, TX
- Cook Children's Hospital Northeast, Hurst, TX
- USMD Hospital at Fort Worth, Fort Worth, TX

Rep. Graves, Garret (R-LA)

- Physicians Medical Center of Houma, Houma, LA

- Spine Hospital of Louisiana at the Neuromedical Center, Baton Rouge, LA
- Surgical Specialty Center of Baton Rouge, Baton Rouge, LA

Rep. Green, Al (D-TX)

- Texas Orthopedic Hospital, Houston, TX

Rep. Green, Gene (D-TX)

- Doctors Hospital Parkway, Houston, TX
- Houston Northwest Medical Center, Houston, TX

Rep. Heck, Denny (D-WA)

- Capital Medical Center, Olympia, WA

Rep. Hensarling, Jeb (R-TX)

- Texas Regional Medical Center at Sunnyvale, Sunnyvale, TX

Rep. Hill, French (R-AR)

- Arkansas Heart Hospital, Little Rock, AR
- Arkansas Surgical Hospital, North Little Rock, AR

Rep. Hinojosa, Ruben (D-TX)

- Cornerstone Regional Hospital, Edinburg, TX
- Doctors Hospital at Renaissance, Edinburg, TX

Rep. Huelskamp, Tim (R-KS)

- Great Bend Regional Hospital, Great Bend, KS

- Manhattan Surgical Hospital, Manhattan, KS
 - Salina Surgical Hospital, Salina, KS
 - Summit Surgical, Hutchinson, KS
- Rep. Hurd, Will (R-TX)
- Southwest General Hospital, San Antonio, TX
- Rep. Jackson Lee, Sheila (D-TX)
- Doctors Hospital Tidwell, Houston, TX
 - Houston Hospital for Specialized Surgery, Houston, TX
 - St. Joseph Medical Center, Houston, TX
 - TOPS Surgical Specialty Hospital, Houston, TX
- Rep. Jenkins, Evan (R-WV)
- Greenbrier Valley Medical Center, Ronceverte, WV
 - Williamson Memorial Hospital, Williamson, WV
- Rep. Jordan, Jim (R-OH)
- Institute for Orthopaedic Surgery, Lima, OH
- Rep. Johnson, Bill (R-OH)
- Three Gables Surgery Center, Proctorville, OH
- Rep. Johnson, Eddie Bernice (D-TX)
- Baylor Heart and Vascular Hospital, Dallas, TX
- Rep. Johnson, Sam (R-TX)
- Baylor Medical Center at Frisco, Frisco, TX
- Heart Hospital Baylor Plano, Plano, TX
 - Methodist McKinney, McKinney, TX
 - Star Medical Center, Plano, TX
 - Texas Health Center for Diagnostics & Surgery, Plano, TX
- Rep. Kelly, Mike (R-PA)
- Edgewood Surgical Hospital, Transfer, PA
- Rep. Kind, Ron (D-WI)
- OakLeaf Surgical Hospital, Eau Claire, WI
- Rep. Labrador, Raul (R-ID)
- Northwest Specialty Hospital, Post Falls, ID
- Rep. LaMalfa, Doug (R-CA)
- Patients' Hospital of Redding, Redding, CA
- Rep. Lawrence, Brenda (D-MI)
- Doctors' Hospital of Michigan, Pontiac, MI
- Rep. Levin, Sander (D-MI)
- Southeast Michigan Surgical Hospital, Warren, MI
- Rep. Lieu, Ted (D-CA)
- Marina Del Rey Hospital, Marina Del Rey, CA
- Rep. Love, Mia (R-UT)
- Jordan Valley Medical Center/Pioneer Valley Hospital, West Jordan, UT

- Rep. Luetkemeyer, Blaine (R-MO)
- CenterPointe Hospital, St. Peters, MO
- Rep. Lummis, Cynthia (R-WY)
- Mountain View Regional Hospital, Casper, WY
 - Summit Medical Center, Casper, WY
- Rep. Marchant, Kenny (R-TX)
- Baylor Surgical Hospital at Las Colinas, Irving, TX
 - Methodist Hospital for Surgery, Addison, TX
 - Texas Health Harris Methodist Hospital Southlake, Southlake, TX
- Rep. McCarthy, Kevin (R-CA)
- Bakersfield Heart Hospital, Bakersfield, CA
- Rep. McCollum, Betty (D-MN)
- PrairieCare, Woodbury, MN
- Rep. McMorris Rodger, Cathy (R-WA)
- Whitman Hospital and Medical Center, Colfax, WA
- Rep. Miller, Jeff (R-FL)
- North Okaloosa Medical Center, Crestview, FL
- Rep. Mooney, Alexander (R-WV)
- Charleston Surgical Hospital, Charleston, WV
- Rep. Moore, Gwen (D-WI)
- Orthopaedic Hospital of Wisconsin, Glendale, WI

- Rep. Mullin, Markwayne (R-OK)
- Medical Center of Southeastern Oklahoma, Durant, OK
- Rep. Murphy, Tim (R-PA)
- Advanced Surgical Hospital, Washington, PA
- Rep. Napolitano, Grace (D-CA)
- Doctors Hospital of West Covina, West Covina, CA
- Rep. Neugebauer, Randy (R-TX)
- Abilene Regional Medical Center, Abilene, TX
 - Grace Medical Center, Lubbock, TX
 - Lubbock Heart Hospital, Lubbock, TX
 - Trustpoint Hospital, Lubbock, TX
- Rep. Newhouse, Dan (R-WA)
- Toppenish Community Hospital, Toppenish, WA
- Rep. Noem, Kristi (R-SD)
- Avera Heart Hospital of South Dakota, Sioux Falls, SD
 - Black Hills Surgical Hospital, Rapid City, SD
 - Dunes Surgical Hospital, Dakota Dunes, SD
 - Lewis & Clark Specialty Hospital, Yankton, SD
 - Same Day Surgery Center, Rapid City, SD
 - Sioux Falls Specialty Hospital, Sioux Falls, SD

Rep. Nugent, Richard (R-FL)

- Bayfront Health Brooksville, Brooksville, FL
- Bayfront Health Spring Hill, Spring Hill, FL

Rep. Nunes, Devin (R-CA)

- Fresno Surgical Hospital, Fresno, CA

OH-8 –former Speaker Boehner’s district

- Ohio Valley Surgical Hospital, Springfield, OH

Rep. Olson, Pete (R-TX)

- Emerus Hospital, Sugar Land, TX
- Houston Physicians' Hospital, Webster, TX
- Memorial Hermann Surgical Hospital First Colony, Sugar Land, TX

Rep. O'Rourke, Beto (D-TX)

- Foundation Surgical Hospital of El Paso, El Paso, TX
- El Paso Specialty Hospital, El Paso, TX

Rep. Perlmutter, Ed (D-CO)

- OrthoColorado Hospital, Lakewood, CO

Rep. Perry, Scott (R-PA)

- OSS Orthopaedic Hospital, York, PA

Rep. Pittenger, Robert (R-NC)

- Lake Norman Regional Medical Center, Mooresville, NC

Rep. Pitts, Joe (R-PA)

- Heart of Lancaster Regional Medical Center, Lititz, PA
- Lancaster Regional Medical Center, Lancaster, PA

Rep. Poe, Ted (R-TX)

- Humble Surgical Hospital, Humble, TX
- Spring Central Hospital, Spring, TX
- St. Luke's Hospital at the Vintage, Houston, TX

Rep. Pompeo, Mike (R-KS)

- Kansas Heart Hospital, Wichita, KS
- Kansas Medical Center, Andover, KS
- Kansas Spine & Specialty Hospital, Wichita, KS
- Kansas Surgery and Recovery Center, Wichita, KS

Rep. Ratcliffe, John (R-TX)

- Baylor Scott & White Surgical Hospital – Sherman, Sherman, TX
- Carrus Hospitals, Sherman, TX
- Lake Pointe Medical Center, Rowlett, TX
- Texas Health Presbyterian Hospital Rockwall, Rockwall, TX
- Wadley Regional Medical Center, Texarkana, TX

Rep. Ribble, Reid (R-WI)

- Aurora BayCare Medical Center, Green Bay, WI

Rep. Richmond, Cedric (D-LA)

- St. Charles Surgical Hospital, New Orleans, LA

Rep. Rogers, Harold (R-KY)

- Paul B. Hall Regional Medical Center, Paintsville, KY

Rep. Rogers, Mike (R-AL)

- Jack Hughston Memorial Hospital, Phenix City, AL
- Stringfellow Memorial Hospital, Anniston, AL

Rep. Rooney, Thomas (R-FL)

- Lake Wales Medical Center, Lake Wales, FL

Rep. Ros-Lehtinen, Ileana (R-FL)

- Westchester General Hospital, Miami, FL

Rep. Russell, Steve (R-OK)

- Deaconess Hospital, Oklahoma City, OK
- Lakeside Women's Hospital, Oklahoma City, OK
- McBride Clinic Orthopedic Hospital, Oklahoma City, OK
- Northwest Surgical Hospital, Oklahoma City, OK
- Oklahoma Center for Orthopaedic & Multi-Specialty Surgery Hospital, Oklahoma City, OK
- Oklahoma Heart Hospital, Oklahoma City, OK
- Oklahoma Heart Hospital South, Oklahoma City, OK
- Oklahoma Spine Hospital, Oklahoma City, OK
- Orthopedic Hospital (Onecore Health), Oklahoma City, OK
- Summit Medical Center, Edmond, OK

- Surgical Hospital of Oklahoma, Oklahoma City, OK

Rep. Ryan, Paul (R-WI)

- Midwest Orthopedic Specialty Hospital, Franklin, WI

Rep. Ryan, Tim (D-OH)

- Summa Western Reserve Hospital, Cuyahoga Falls, OH
- Surgical Hospital at Southwoods, Youngstown, OH

Rep. Salmon, Matt (R-AZ)

- Arizona Spine & Joint Hospital, Mesa, AZ
- Gilbert Hospital, Gilbert, AZ
- Mountain Vista Medical Center, Mesa, AZ

Rep. Scalise, Steve (R-LA)

- AMG Specialty Hospital - Slidell, Slidell, LA
- Crescent City Surgical Centre, Metairie, LA
- Cypress Pointe Surgical Hospital, Hammond, LA
- Fairway Medical Center, Covington, LA
- Louisiana Heart Hospital, Lacombe, LA
- Omega Hospital Surgery Center, Metairie, LA
- Southern Surgical Hospital, Slidell, LA
- Sterling Surgical Hospital/ Cypress Pointe Hospital East, Slidell, LA

Rep. Scott, Bobby (D-VA)

- Southside Regional Medical Center, Petersburg, VA

Rep. Sessions, Pete (R-TX)

- Baylor Medical Center at Uptown, Dallas, TX
- Forest Park Medical Center, Dallas, TX
- North Central Surgical Center, Dallas, TX
- Texas Institute for Surgery at Texas Health Presbyterian of Dallas, Dallas, TX

Rep. Simpson, Michael (R-ID)

- Mountain View Hospital, Idaho Falls, ID
- Treasure Valley Hospital, Boise, ID

Rep. Sinema, Kyrsten (D-AZ)

- Arizona Orthopedic and Surgical Specialty Hospital, Chandler, AZ

Rep. Smith, Lamar (R-TX)

- South Texas Spine & Surgical Hospital, San Antonio, TX

Rep. Stewart, Chris (R-UT)

- Salt Lake Regional Medical Center, Salt Lake City, UT

Rep. Stutzman, Marlin (R-IN)

- Bluffton Regional Medical Center, Bluffton, IN
- Dupont Hospital, Fort Wayne, IN
- Kosciusko Community Hospital, Warsaw, IN
- Lutheran Hospital of Indiana, Fort Wayne, IN

- Lutheran Rehabilitation Hospital of Fort Wayne, Fort Wayne, IN
- Orthopedic Hospital of Lutheran Hospital Network, Fort Wayne, IN
- Parkview Ortho Hospital, Fort Wayne, IN
- St. Joseph's Hospital, Fort Wayne, IN

Rep. Thompson, Bennie (D-MS)

- Tri-Lakes Medical Center, Batesville, MS
- Rep. Harper, Gregg (R-MS) Natchez Community Hospital, Natchez, MS

Rep. Thornberry, Mac (R-TX)

- Kell West Regional Hospital, Wichita Falls, TX
- Northwest Texas Surgery Center, Amarillo, TX
- Physicians Surgical Hospitals, LLC Quail Creek Surgical Hospital/Panhandle Surgical Hospital, Amarillo, TX

Rep. Tipton, Scott (R-CO)

- Animas Surgical Hospital, Durango, CO

Rep. Turner, Michael (R-OH)

- Dayton Rehabilitation Institute, Dayton, OH
- Medical Center at Elizabeth Place, Dayton, OH
- Riverview Health Institute, Dayton, OH

Rep. Veasey, Marc (D-TX)

- Pine Creek Medical Center, Dallas, TX
- Sundance Hospital, Fort Worth, TX

Rep. Vela, Filemon (D-TX)

- Harlingen Medical Center, Harlingen, TX

Rep. Visclosky, Peter (D-IN)

- Hind General Hospital, Hobart, IN
- Pinnacle Hospital, Crown Point, IN
- Porter Regional Hospital, Valparaiso, IN

Rep. Walorski, Jackie (R-IN)

- Doctors Neuromedical Hospital & Brain Institute, Bremen, IN
- RiverCrest Specialty Hospital, Mishawaka, IN
- Unity Medical and Surgical Hospital, Mishawaka, IN

Rep. Walters, Mimi (R-CA)

- Hoag Orthopedic Institute, Irvine, CA

Rep. Weber, Randy (R-TX)

- Beaumont Bone & Joint Institute, Beaumont, TX
- Medical Center of Southeast Texas, Port Arthur, TX

Rep. Webster, Daniel (R-FL)

- Heart of Florida Regional Medical Center, Davenport, FL

Rep. Westerman, Bruce (R-AR)

- National Park Medical Center, Hot Springs, AR

Rep. Williams, Roger (R-TX)

- Arise Austin Medical Center, Austin, TX
- Hospital at Westlake Medical Center, Austin, TX
- Northwest Hills Surgical Hospital, Austin, TX

Rep. Womack, Steve (R-AR)

- Physicians' Specialty Hospital, Fayetteville, AR
- Summit Medical Center, Van Buren, AR

Rep. Yoder, Kevin (R-KS)

- Doctors Hospital, Leawood, KS
- Kansas City Orthopaedic Institute, Leawood, KS

Rep. Young, Don (R-AK)

- Mat-Su Regional Medical Center, Palmer, AK

Rep. Young, Todd (R-IN)

- Physicians' Medical Center LLC, New Albany, IN

Rep. Zinke, Ryan (R-MT)

- Great Falls Clinic Medical Center, Great Falls, MT
- Health Center Northwest Hospital, Kalispell, MT

Section B

Table below lists POHs randomly selected without replacement from the master list in Appendix Section A. Corporate-owned and not-for-profit hospitals randomly selected without replacement are also listed in tables below in this section.

S. No.	Name Of The Hospital	City	State
1	Riverview Regional Medical Center	Gadsden	AL
2	Arizona Orthopedic & Surgical Specialty Hospital	Chandler	AZ
3	Gilbert Hospital	Gilbert	AZ
4	Mountain Vista Medical Center	Mesa	AZ
5	National Park Medical Center	Hot Springs	AR
6	Arkansas Surgical Hospital	North Little Rock	AR
7	Pacific Alliance Medical Center	Los Angeles	CA
8	Bakersfield Heart Hospital	Bakersfield	CA
9	Miracle Mile Medical Center	Los Angeles	CA
10	Sutter Surgical Hospital - North Valley	Yuba City	CA
11	Hoag Orthopedic Institute	Irvine	CA
12	Animas Surgical Hospital, LLC	Durango	CO
13	Heart of Florida Regional Medical Center	Davenport	FL
14	East Georgia Regional Medical Center	Statesboro	GA
15	Northwest Specialty Hospital	Post Falls	ID
16	Lutheran Hospital of Indiana	Fort Wayne	IN
17	Porter Regional Hospital	Valparaiso	IN
18	Bluffton Regional Medical Center	Bluffton	IN
19	Kosciusko Community Hospital	Warsaw	IN
20	Indiana Orthopedic Hospital	Indianapolis	IN
21	Rivercrest Specialty Hospital	Mishawaka	IN
22	Salina Surgical Hospital	Salina	KS
23	Kansas City Orthopaedic Institute	Leawood	KS
24	Manhattan Surgical Hospital, LLC	Manhattan	KS
25	Kansas Spine & Specialty Hospital, LLC	Wichita	KS
26	Paul B. Hall Regional Medical Center	Paintsville	KY
27	Monroe Surgical Hospital	Monroe	LA
28	Park Place Surgical Hospital	Lafayette	LA
29	Lafayette Surgical Specialty Hospital	Lafayette	LA

30	Fairway Medical Center	Covington	LA
31	Centerpointe Hospital	St. Peters	MO
32	Lincoln Surgical Hospital	Lincoln	NE
33	Bellevue Medical Center	Bellevue	NE
34	Nebraska Spine Hospital, LLC	Omaha	NE
35	North Carolina Specialty Hospital	Durham	NC
36	Summa Western Reserve Hospital	Cuyahoga Falls	OH
37	Three Gables Surgery Center	Proctorville	OH
38	Surgical Hospital at Southwoods	Youngstown	OH
39	Dayton Rehabilitation Institute	Dayton	OH
40	Medical Center of Southeastern Oklahoma	Durant	OK
41	Deaconess Hospital	Oklahoma City	OK
42	Midwest Regional Medical Center	Midwest City	OK
43	Northwest Surgical Hospital	Oklahoma City	OK
44	Surgical Hospital of Oklahoma, LLC	Oklahoma City	OK
45	Oklahoma Spine Hospital	Oklahoma City	OK
46	Onecore Health	Oklahoma City	OK
47	Summit Medical Center	Edmond	OK
48	Bailey Medical Center, LLC	Owasso	OK
49	Mckenzie-Willamette Medical Center	Springfield	OR
50	Lancaster Regional Medical Center	Lancaster	PA
51	Sunbury Community Hospital	Sunbury	PA
52	Edgewood Surgical Hospital	Transfer	PA
53	Coordinated Health Orthopedic Hospital	Bethlehem	PA
54	Rothman Orthopedic Specialty Hospital, LLC	Bensalem	PA
55	Advanced Surgical Hospital	Washington	PA
56	Physician's Care Surgical Hospital	Royersford	PA
57	Same Day Surgery Center LLC	Rapid City	SD
58	Avera Heart Hospital of South Dakota	Sioux Falls	SD
59	United Regional Medical Center	Manchester	TN
60	Perry Community Hospital	Linden	TN
61	Harton Regional Medical Center	Tullahoma	TN
62	St. Joseph Medical Center	Houston	TX
63	Wadley Regional Medical Center	Texarkana	TX
64	San Angelo Community Medical Center	San Angelo	TX
65	Houston Northwest Medical Center	Houston	TX
66	Northwest Texas Surgery Center	Amarillo	TX
67	Cornerstone Regional Hospital	Edinburg	TX

68	Memorial Hermann Sugar Land Hospital	Sugar Land	TX
69	Harlingen Medical Center	Harlingen	TX
70	South Texas Spine and Surgical Hospital	San Antonio	TX
71	St Luke's The Woodlands Hospital	The Woodlands	TX
72	Doctors Hospital at Renaissance	Edinburg	TX
73	Arise Austin Medical Center	Austin	TX
74	Baylor Surgical Hospital at Las Colinas	Irving	TX
75	Physicians Surgical Hospital LLC, Quail Creek Surgical Hospital	Amarillo	TX
76	Lubbock Heart Hospital	Lubbock	TX
77	Baylor Surgical Hospital at Fort Worth	Fort Worth	TX
78	Baylor Medical Center at Trophy Club	Trophy Club	TX
79	Texas Health Harris Methodist Hospital Southlake	Southlake	TX
80	Texas Health Center For Diagnostics & Surgery	Plano	TX
81	Salt Lake Regional Medical Center	Salt Lake City	UT
82	Whitman Hospital And Medical Center	Colfax	WA
83	Greenbrier Valley Medical Center	Ronceverte	WV
84	Charleston Surgical Hospital	Charleston	WV
85	Mountain View Regional Hospital	Casper	WY
86	The Hospital at Westlake Medical Center	Austin	TX
87	North Cypress Medical Center	Cypress	TX
88	The Heart Hospital Baylor Plano	Plano	TX
89	St. Luke's Patients Medical Center	Pasadena	TX
90	Atrium Medical Center of Corinth Texas	Corinth	TX
91	Texas Health Presbyterian Hospital Rockwall	Rockwall	TX
92	South Texas Surgical Hospital	Corpus Christi	TX
93	Baylor Emergency Medical Center	Aubrey	TX
94	Basin Healthcare Center	Odessa	TX
95	Baylor Orthopedic and Spine Hospital at Arlington	Arlington	TX
96	Baylor Scott and White Surgical Hospital at Sherman	Sherman	TX
97	Humble Surgical Hospital, LLC	Humble	TX
98	Star Medical Center	Plano	TX
99	AMG Specialty Hospital	Slidell	LA
100	Riverview Health Institute	Dayton	OH

List of selected corporate-owned hospitals

S. No.	Name Of The Hospital	City	State
1	Andalusia Health	Andalusia	AL
2	Citizens Baptist Medical Center	Talladega	AL
3	Brookwood Baptist Medical Center	Birmingham	AL
4	Evergreen Medical Center	Evergreen	AL
5	Russellville Hospital	Russellville	AL
6	Abrazo Scottsdale Campus	Phoenix	AZ
7	Western Arizona Regional Medical Center	Bullhead City	AZ
8	Paradise Valley Hospital	National City	CA
9	Hollywood Presbyterian Medical Center	Los Angeles	CA
10	Sierra Vista Regional Medical Center	San Luis Obispo	CA
11	Placentia Linda Hospital	Placentia	CA
12	San Ramon Regional Medical Center	San Ramon	CA
13	Shasta Regional Medical Center	Redding	CA
14	Steward Rockledge Hospital	Rockledge	FL
15	Fort Walton Beach Medical Center	Fort Walton Beach	FL
16	Brandon Regional Hospital	Brandon	FL
17	Lawnwood Regional Medical Center & Heart Institute	Fort Pierce	FL
18	Seven Rivers Regional Medical Center	Crystal River	FL
19	Regional Medical Center Bayonet Point	Hudson	FL
20	Delray Medical Center	Delray Beach	FL
21	Oak Hill Hospital	Brooksville	FL
22	West Suburban Medical Center	Oak Park	IL
23	MacNeal Hospital	Berwyn	IL
24	Kentucky River Medical Center	Jackson	KY
25	Oakdale Community Hospital	Oakdale	LA
26	Glenwood Regional Medical Center	West Monroe	LA
27	Byrd Regional Hospital	Leesville	LA
28	Carney Hospital	Boston	MA
29	Metrowest Medical Center	Framingham	MA
30	St. Vincent Hospital	Worcester	MA
31	Sinai-Grace Hospital	Detroit	MI
32	Trace Regional Hospital	Houston	MS
33	Perry County General Hospital	Richton	MS
34	Moberly Regional Medical Center	Moberly	MO

35	Poplar Bluff Regional Medical Center	Poplar Bluff	MO
36	Lee's Summit Medical Center	Lees Summit	MO
37	Lafayette Regional Health Center	Lexington	MO
38	Sunrise Hospital and Medical Center	Las Vegas	NV
39	Desert Springs Hospital	Las Vegas	NV
40	Mountainview Hospital	Las Vegas	NV
41	Parkland Medical Center	Derry	NH
42	Portsmouth Regional Hospital	Portsmouth	NH
43	Memorial Hospital of Salem County	Salem	NJ
44	Eastern New Mexico Medical Center	Roswell	NM
45	Los Alamos Medical Center	Los Alamos	NM
46	Carlsbad Medical Center	Carlsbad	NM
47	Lovelace Regional Hospital-Roswell	Roswell	NM
48	Community Hospitals and Wellness Centers	Montpelier	OH
49	Southwestern Medical Center	Lawton	OK
50	Hillcrest Hospital Henryetta	Henryetta	OK
51	Hillcrest Hospital-South	Tulsa	OK
52	Prague Community Hospital	Prague	OK
53	Berwick Hospital Center	Berwick	PA
54	Moses Taylor Hospital	Scranton	PA
55	Pottstown Hospital	Pottstown	PA
56	Hahnemann University Hospital	Philadelphia	PA
57	Hospital San Francisco	San Juan	PR
58	Chester Regional Medical Center	Chester	SC
59	Colleton Medical Center	Walterboro	SC
60	Hilton Head Regional Medical Center	Hilton Head Island	SC
61	Coastal Carolina Hospital	Hardeeville	SC
62	Trousdale Medical Center	Hartsville	TN
63	Bayshore Medical Center	Pasadena	TX
64	Weatherford Medical City	Weatherford	TX
65	Brownwood Regional Medical Center	Brownwood	TX
66	Medical City Hospital Dallas	Dallas	TX
67	Rio Grande Regional Hospital	McAllen	TX
68	United Memorial Medical Center	Houston	TX
69	Lone Peak Hospital	Draper	UT
70	Southampton Memorial Hospital	Franklin	VA
71	Lewisgale Hospital Alleghany	Low Moor	VA
72	Stonesprings Hospital Center	Dulles	VA

73	Multicare Valley Hospital	Spokane	WA
74	Plateau Medical Center	Oak Hill	WV
75	Resolute Health Hospital	New Braunfels	TX

List of selected not-for-profit hospitals:

S. No.	Name Of The Hospital	City	State
1	Central Peninsula Hospital	Soldotna	AK
2	Verde Valley Medical Center	Cottonwood	AZ
3	Scottsdale Thompson Peak Medical Center	Scottsdale	AZ
4	Mercy Hospital Waldron	Waldron	AR
5	Providence St. John's Health Center	Santa Monica	CA
6	Memorial Hospital Los Banos	Los Banos	CA
7	Cedars-Sinai Medical Center	Los Angeles	CA
8	Mission Community Hospital	Panorama City	CA
9	Kaiser Foundation Hospital	Roseville	CA
10	Ridgecrest Regional Hospital	Ridgecrest	CA
11	Platte Valley Medical Center	Brighton	CO
12	Porter Adventist Hospital	Denver	CO
13	Griffin Hospital	Derby	CT
14	UF Health Jacksonville	Jacksonville	FL
15	NCH Downtown Naples Hospital	Naples	FL
16	Health Central	Ocoee	FL
17	Morton Plant Hospital	Clearwater	FL
18	Palm Bay Hospital	Palm Bay	FL
19	Memorial Satilla Health	Waycross	GA
20	Union General Hospital	Blairsville	GA
21	Wahiawa General Hospital	Wahiawa	HI
22	St. Luke's Jerome	Jerome	ID
23	Rush-Copley Memorial Hospital	Aurora	IL
24	Norwegian-American Hospital	Chicago	IL
25	Silver Cross Hospital and Medical Centers	New Lenox	IL
26	Edward Hospital	Naperville	IL
27	Northwest Community Hospital	Arlington Heights	IL
28	Hopedale Hospital	Hopedale	IL
29	Carlinville Area Hospital	Carlinville	IL
30	Community Howard Regional Health	Kokomo	IN
31	Cameron Memorial Community Hospital Inc	Angola	IN
32	Mercy Medical Center-Clinton	Clinton	IA
33	Fort Madison Community Hospital	Fort Madison	IA
34	Mercy Medical Center-Sioux City	Sioux City	IA
35	Via Christi Hospital Pittsburg	Pittsburg	KS

36	Our Lady of Bellefonte Hospital	Ashland	KY
37	Lake Charles Memorial Hospital	Lake Charles	LA
38	West Carroll Memorial Hospital	Oak Grove	LA
39	Our Lady of the Angels Hospital	Bogalusa	LA
40	Mercy Medical Center	Baltimore	MD
41	Beaumont Hospital	Troy	MI
42	Mayo Clinic Health System - Fairmont	Fairmont	MN
43	Mercy Hospital St. Louis	Saint Louis	MO
44	Hedrick Medical Center	Chillicothe	MO
45	Brodstone Memorial Hospital	Superior	NE
46	York General Hospital	York	NE
47	Boulder City Hospital	Boulder City	NV
48	Frisbie Memorial Hospital	Rochester	NH
49	Cottage Hospital	Woodsville	NH
50	Valley Regional Hospital	Claremont	NH
51	Virtua Voorhees Hospital	Voorhees	NJ
52	Deborah Heart and Lung Center	Browns Mills	NJ
53	Shore Medical Center	Somers Point	NJ
54	New York-Presbyterian/Queens	Flushing	NY
55	Columbia Memorial Hospital	Hudson	NY
56	White Plains Hospital Center	White Plains	NY
57	Catskill Regional Medical Center	Harris	NY
58	Elizabethtown Community Hospital	Elizabethtown	NY
59	Charles A. Cannon Memorial Hospital	Linville	NC
60	Towner County Medical Center	Cando	ND
61	Bay Park Community Hospital-Promedica	Oregon	OH
62	Mercy St. Anne Hospital	Toledo	OH
63	Soin Medical Center	Beaver Creek	OH
64	Stroud Regional Medical Center	Stroud	OK
65	Tuality Community Hospital	Hillsboro	OR
66	Columbia Memorial Hospital	Astoria	OR
67	Lehigh Valley Hospital	Pottsville	PA
68	Geisinger-Lewistown Hospital	Lewistown	PA
69	Kane Community Hospital	Kane	PA
70	Thomas Jefferson University Hospitals	Philadelphia	PA
71	St. Clair Hospital	Pittsburgh	PA
72	GHS Hillcrest Memorial Hospital	Simpsonville	SC
73	Avera St. Mary's Hospital	Pierre	SD

74	Huron Regional Medical Center	Huron	SD
75	St. Thomas Rutherford Hospital	Murfreesboro	TN
76	Northcrest Medical Center	Springfield	TN
77	Fort Sanders Regional Medical Center	Knoxville	TN
78	Johnson County Community Hospital	Mountain City	TN
79	Pampa Regional Medical Center	Pampa	TX
80	Knapp Medical Center	Weslaco	TX
81	Houston Methodist St. John Hospital	Nassau Bay	TX
82	Covenant Hospital Levelland	Levelland	TX
83	East Texas Medical Center Quitman	Quitman	TX
84	Bon Secours St. Francis Medical Center	Midlothian	VA
85	Bath Community Hospital	Hot Springs	VA
86	Providence Centralia Hospital	Centralia	WA
87	Swedish Edmonds Hospital	Edmonds	WA
88	West Virginia University Hospitals	Morgantown	WV
89	Beaver Dam Community Hospital	Beaver Dam	WI
90	Aurora Lakeland Medical Center	Elkhorn	WI
91	Bay Area Medical Center	Marinette	WI
92	Chippewa Valley Hospital	Durand	WI
93	Calumet Medical Center	Chilton	WI
94	Scott & White Hospital-Round Rock	Round Rock	TX
95	Seton Medical Center Hays	Kyle	TX
96	Texas Health Harris Methodist Hospital Alliance	Fort Worth	TX

Section C

HCAHPS Survey (used by CMS for measuring patient satisfaction).

(The survey is accessible at: <http://hcahpsonline.org/globalassets/hcahps/survey-instruments/mail/through-december-31-2017-discharges/click-here-to-view-or-download-the-english-survey-materials..pdf>)

HCAHPS Survey

SURVEY INSTRUCTIONS

- ◆ You should only fill out this survey if you were the patient during the hospital stay named in the cover letter. Do not fill out this survey if you were not the patient.
- ◆ Answer all the questions by checking the box to the left of your answer.
- ◆ You are sometimes told to skip over some questions in this survey. When this happens you will see an arrow with a note that tells you what question to answer next, like this:
 - Yes
 - No → *If No, Go to Question 1*

You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders.
Please note: Questions 1-25 in this survey are part of a national initiative to measure the quality of care in hospitals. OMB #0938-0981

Please answer the questions in this survey about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

YOUR CARE FROM NURSES

1. During this hospital stay, how often did nurses treat you with courtesy and respect?
 - 1 Never
 - 2 Sometimes
 - 3 Usually
 - 4 Always
2. During this hospital stay, how often did nurses listen carefully to you?
 - 1 Never
 - 2 Sometimes
 - 3 Usually
 - 4 Always

3. During this hospital stay, how often did nurses explain things in a way you could understand?
 - 1 Never
 - 2 Sometimes
 - 3 Usually
 - 4 Always
4. During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it?
 - 1 Never
 - 2 Sometimes
 - 3 Usually
 - 4 Always
 - 5 I never pressed the call button

YOUR CARE FROM DOCTORS

5. During this hospital stay, how often did doctors treat you with courtesy and respect?
- ¹ Never
² Sometimes
³ Usually
⁴ Always
6. During this hospital stay, how often did doctors listen carefully to you?
- ¹ Never
² Sometimes
³ Usually
⁴ Always
7. During this hospital stay, how often did doctors explain things in a way you could understand?
- ¹ Never
² Sometimes
³ Usually
⁴ Always

THE HOSPITAL ENVIRONMENT

8. During this hospital stay, how often were your room and bathroom kept clean?
- ¹ Never
² Sometimes
³ Usually
⁴ Always
9. During this hospital stay, how often was the area around your room quiet at night?
- ¹ Never
² Sometimes
³ Usually
⁴ Always

YOUR EXPERIENCES IN THIS HOSPITAL

10. During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or in using a bedpan?
- ¹ Yes
² No → If No, Go to Question 12
11. How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?
- ¹ Never
² Sometimes
³ Usually
⁴ Always
12. During this hospital stay, did you need medicine for pain?
- ¹ Yes
² No → If No, Go to Question 15
13. During this hospital stay, how often was your pain well controlled?
- ¹ Never
² Sometimes
³ Usually
⁴ Always
14. During this hospital stay, how often did the hospital staff do everything they could to help you with your pain?
- ¹ Never
² Sometimes
³ Usually
⁴ Always

15. During this hospital stay, were you given any medicine that you had not taken before?

¹ Yes

² No → If No, Go to Question 18

16. Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?

¹ Never

² Sometimes

³ Usually

⁴ Always

17. Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?

¹ Never

² Sometimes

³ Usually

⁴ Always

WHEN YOU LEFT THE HOSPITAL

18. After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?

¹ Own home

² Someone else's home

³ Another health facility → If Another, Go to Question 21

19. During this hospital stay, did doctors, nurses or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?

¹ Yes

² No

20. During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

¹ Yes

² No

OVERALL RATING OF HOSPITAL

Please answer the following questions about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

21. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?

⁰ 0 Worst hospital possible

¹ 1

² 2

³ 3

⁴ 4

⁵ 5

⁶ 6

⁷ 7

⁸ 8

⁹ 9

¹⁰ 10 Best hospital possible

22. Would you recommend this hospital to your friends and family?

- ¹ Definitely no
² Probably no
³ Probably yes
⁴ Definitely yes

**UNDERSTANDING YOUR CARE
WHEN YOU LEFT THE HOSPITAL**

23. During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.

- ¹ Strongly disagree
² Disagree
³ Agree
⁴ Strongly agree

24. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.

- ¹ Strongly disagree
² Disagree
³ Agree
⁴ Strongly agree

25. When I left the hospital, I clearly understood the purpose for taking each of my medications.

- ¹ Strongly disagree
² Disagree
³ Agree
⁴ Strongly agree
⁵ I was not given any medication when I left the hospital

ABOUT YOU

There are only a few remaining items left.

26. During this hospital stay, were you admitted to this hospital through the Emergency Room?

- ¹ Yes
² No

27. In general, how would you rate your overall health?

- ¹ Excellent
² Very good
³ Good
⁴ Fair
⁵ Poor

28. In general, how would you rate your overall mental or emotional health?

- ¹ Excellent
² Very good
³ Good
⁴ Fair
⁵ Poor

29. What is the highest grade or level of school that you have completed?

- ¹ 8th grade or less
² Some high school, but did not graduate
³ High school graduate or GED
⁴ Some college or 2-year degree
⁵ 4-year college graduate
⁶ More than 4-year college degree

30. Are you of Spanish, Hispanic or Latino origin or descent?
- ¹ No, not Spanish/Hispanic/Latino
 - ² Yes, Puerto Rican
 - ³ Yes, Mexican, Mexican American, Chicano
 - ⁴ Yes, Cuban
 - ⁵ Yes, other Spanish/Hispanic/Latino

31. What is your race? Please choose one or more.
- ¹ White
 - ² Black or African American
 - ³ Asian
 - ⁴ Native Hawaiian or other Pacific Islander
 - ⁵ American Indian or Alaska Native

32. What language do you mainly speak at home?
- ¹ English
 - ² Spanish
 - ³ Chinese
 - ⁴ Russian
 - ⁵ Vietnamese
 - ⁶ Portuguese
 - ⁹ Some other language (please print):

THANK YOU

Please return the completed survey in the postage-paid envelope.

[NAME OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

[RETURN ADDRESS OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

Questions 1-22 and 26-32 are part of the HCAHPS Survey and are works of the U.S. Government. These HCAHPS questions are in the public domain and therefore are NOT subject to U.S. copyright laws. The three Care Transitions Measure® questions (Questions 23-25) are copyright of Eric A. Coleman, MD, MPH, all rights reserved.

Section D

CORRELATIONS BETWEEN QUALITY INDICATORS AND HOSPITAL TYPES

Tables D1, 2 show bivariate correlations between hospital type and quality of care (tapped by indicators of patient satisfaction and outcomes). In the full sample, POHs may have best quality of care among hospitals, with higher patient perceived ratings and lower unplanned readmissions and complications than other hospitals. However, in the restricted sample, NFP hospitals have higher patient satisfaction and lower unplanned readmissions. Corporate-owned hospitals were worst performers in both samples at both time periods.

Correlations - Patient Satisfaction, Outcomes, and Hospital types							
		Full Sample - 2018			Full Sample - 2017		
		POH	Corp.	NFP	POH	Corp.	NFP
Patients rating a hospital 9 or 10	Pearson Correlation	.431**	-.440**	-0.016	.396**	-.423**	0.005
	Sig. (2-tailed)	.000	.000	.806	.000	.000	.942
	N	247	247	247	248	248	248
Patients definitely recommending a hospital	Pearson Correlation	.397**	-.418**	-0.002	.383**	-.408**	0.005
	Sig. (2-tailed)	.000	.000	.974	.000	.000	.939
	N	248	248	248	248	248	248
Unplanned Readmissions	Pearson Correlation	-.227**	.209**	.029	-.208**	.323**	-0.1
	Sig. (2-tailed)	.000	.001	.646	.001	.000	.113
	N	253	253	253	251	251	251
Excess Readmission	Pearson Correlation	-0.092	.156*	-0.058	-.259**	.201**	0.07
	Sig. (2-tailed)	.176	.021	.394	.000	.003	.298
	N	219	219	219	220	220	220
Serious Complications	Pearson Correlation	-.165*	.148*	0.028	-.165*	.148*	0.028
	Sig. (2-tailed)	.013	.025	.673	.013	.025	.673
	N	228	228	228	228	228	228
Mortality	Pearson Correlation	0.030	0.127	-0.145	0.03	0.127	-0.145
	Sig. (2-tailed)	.719	.129	.083	.719	.129	.083
	N	144	144	144	144	144	144

Table D1: Correlations between quality indicators and hospital types (full sample)

Correlations - Patient Satisfaction, Outcomes, and Hospital types							
		Restricted Sample - 2018			Restricted Sample - 2017		
		POH	Corp.	NFP	POH	Corp.	NFP
Patients rating a hospital 9 or 10	Pearson Correlation	.186**	-.381**	.209**	0.132	-.360**	.236**
	Sig. (2-tailed)	.008	.000	.003	.059	.000	.001
	N	205	205	205	206	206	206
Patients definitely recommending a hospital	Pearson Correlation	.148*	-.350**	.211**	.126	-.336**	.217**
	Sig. (2-tailed)	.034	.000	.002	.071	.000	.002
	N	206	206	206	206	206	206
Unplanned Readmissions	Pearson Correlation	-0.115	.311**	-.202**	-0.115	.310**	-.201**
	Sig. (2-tailed)	.095	.000	.003	.095	.000	.003
	N	210	210	210	211	211	211
Excess Readmission	Pearson Correlation	0.091	0.119	-.196**	-0.114	.212**	-0.109
	Sig. (2-tailed)	.225	.111	.008	.126	.004	.146
	N	181	181	181	180	180	180
Serious Complications	Pearson Correlation	-0.024	0.082	-0.059	-0.024	0.082	-0.059
	Sig. (2-tailed)	.742	.266	.427	.742	.266	.427
	N	186	186	186	186	186	186
Mortality	Pearson Correlation	0.029	0.126	-0.143	0.029	0.126	-0.143
	Sig. (2-tailed)	.739	.142	.096	.739	.142	.096
	N	137	137	137	137	137	137

Table D2: Correlations between quality indicators and hospital types (restricted sample)

Tables D3, 4 show bivariate correlations between patient-centric practices and hospitals types.

As with patient satisfaction and outcomes, variations exist in patient-centric practices as well in both samples.

Correlations - Practices and Hospitals - 2018 Full Sample (Restricted Sample)				
		POH	Corp.	NFP
Doctor Communication	Pearson Correlation	.258** (.043)	-.251** (-.174**)	-0.02 (.131)
	Sig. (2-tailed)	.000 (.541)	.000 (.012)	0.753 (.061)
	N	248 (206)	248 (206)	248 (206)
Nurse Communication	Pearson Correlation	.288** (.028)	-.372** (-.311**)	0.063 (.275**)
	Sig. (2-tailed)	.000 (.685)	.000 (.000)	0.324 (.000)
	N	248 (206)	248 (206)	248 (206)
Medicines explanation	Pearson Correlation	.310** (.076)	-.321** (-.259**)	-0.007 (.185**)
	Sig. (2-tailed)	.000 (.28)	.000 (.000)	0.918 (.008)
	N	248 (206)	248 (206)	248 (206)
Help as soon as wanted	Pearson Correlation	.398** (.159*)	-.349** (-.286**)	-0.068(.045)
	Sig. (2-tailed)	.000 (.022)	.000 (.000)	0.285 (.206)
	N	248 (206)	248 (206)	248 (206)
Pain well controlled	Pearson Correlation	.364** (.131)	-.305** (-.229**)	-0.076 (.11)
	Sig. (2-tailed)	.000 (.061)	.000 (.000)	0.234 (.117)
	N	248 (206)	248 (206)	248 (206)
Clean rooms and bathrooms	Pearson Correlation	.331** (.128)	-.447** (-.404**)	0.091 (.280**)
	Sig. (2-tailed)	.000 (.066)	.000 (.000)	0.153 (.000)
	N	248 (206)	248 (206)	248 (206)
Quiet rooms at night	Pearson Correlation	.487** (.286**)	-.234** (-.125)	-.265** (-.123)
	Sig. (2-tailed)	.000 (.000)	.000 (.074)	.000 (.078)
	N	248 (206)	248 (206)	248 (206)
Recovery information given	Pearson Correlation	.253** (.045)	-.238** (-.154*)	-0.028 (.11)
	Sig. (2-tailed)	.000 (.521)	.000 (.027)	0.661(.116)
	N	248 (206)	248 (206)	248 (206)
Strong understanding of recovery info.	Pearson Correlation	.378** (.132)	-.416** (-.365**)	0.015 (.238**)
	Sig. (2-tailed)	.000 (.059)	.000 (.000)	0.81 (.001)
	N	248 (206)	248 (206)	248 (206)

Table D3: Correlations between patient-centric practices and hospital types - 2018 full sample (restricted sample)

Correlations - Practices and Hospitals - 2017 Full Sample (Restricted Sample)				
		POH	Corp.	NFP
Doctor communication	Pearson Correlation	.241** (.049)	-.244** (-.176*)	-0.01 (.128)
	Sig. (2-tailed)	.000 (.488)	.000 (.012)	0.877 (.066)
	N	248 (206)	248 (206)	248 (206)
Nurse Communication	Pearson Correlation	.284** (-.004)	-.328** (-.251**)	0.027 (.246**)
	Sig. (2-tailed)	.000 (.955)	.000 (.000)	0.669 (.000)
	N	248 (206)	248 (206)	248 (206)
Medicines explanation given to patients	Pearson Correlation	.348** (.082)	-.352** (-.280**)	-0.014 (.201**)
	Sig. (2-tailed)	.000 (.244)	.000 (.000)	0.824 (.004)
	N	248 (206)	248 (206)	248 (206)
Help as soon as wanted	Pearson Correlation	.363** (.082)	-.350** (-.281**)	-0.031 (.201**)
	Sig. (2-tailed)	.000 (.239)	.000 (.000)	0.629 (.004)
	N	248 (206)	248 (206)	248 (206)
Pain well controlled	Pearson Correlation	.301** (.042)	-.295** (-.218**)	-0.021 (.175*)
	Sig. (2-tailed)	.000 (.542)	.000 (.002)	0.742 (.012)
	N	248 (206)	248 (206)	248 (206)
Clean rooms and bathrooms	Pearson Correlation	.285** (.068)	-.379** (-.320**)	0.075 (.252**)
	Sig. (2-tailed)	.000 (.335)	.000 (.000)	0.24 (.000)
	N	248 (206)	248 (206)	248 (206)
Quiet rooms at night	Pearson Correlation	.462** (.262**)	-.224* (-.114)	-.249** (-.113)
	Sig. (2-tailed)	.000 (.000)	.000 (.104)	.000 (.107)
	N	248 (206)	248 (206)	248 (206)
Recovery information given	Pearson Correlation	.258** (.044)	-.263** (-.183**)	-0.008 (.140*)
	Sig. (2-tailed)	.000 (.534)	.000 (.008)	0.902 (.045)
	N	248 (206)	248 (206)	248 (206)
Strong understanding of recovery info.	Pearson Correlation	.402** (.117)	-.427** (-.361**)	0.003 (.249**)
	Sig. (2-tailed)	.000 (.095)	.000 (.000)	0.959 (.000)
	N	248 (206)	248 (206)	248 (206)

Table D4: Correlations between patient-centric practices and hospital types - 2017 full sample (restricted sample)