EXPLORING THE NEXUS OF PATIENT SAFETY AND PATIENT-CENTERED CARE:

A STUDY OF HIGH PERFORMING HOSPITALS

by

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Abstract

Knowing whether a hospital keeps patients safe and free from harm is one of healthcare consumers' fundamental expectations. Multiple measures, metrics, and indicators of healthcare quality exist, yet it is often difficult for different stakeholders to know and recognize the characteristics of a quality hospital. The purpose of this study is to identify and examine high performance in health care quality from the perspectives of patients, practitioners, and policy makers, focusing on aspects of patient-centeredness and patient safety. The foundation of this work comes from pairing together models of positive deviance and high performance.

Methods

A review of the literature guided the research design, methodological decisions, and choice of measures used in this study of High Performing Hospitals. We calculated a summary score for each hospital across three publicly available data sets from the perspectives of patients, practitioners, and policymakers. We identified seven high performing hospitals of varying sizes (~82 beds to ~548 beds) and geographic locations. Qualitative analysis examined characteristics and practices associated with high performance.

Results

Combining information collected from the perspectives of patients, staff, and consensus-based indicators of quality offers a parsimonious means to identify exemplary "good" hospitals across various stakeholders. Community-based, small hospitals tended to have higher summary scores than more complex, larger hospitals. The findings highlight the activities and strategies employed by high performers—using the resources they have to provide high-quality, safe care. High performance is observed where there are alignments in incentives and synergies among policy, professional(ism), and institutional goals and actions.

Conclusion

This study offers a novel approach to identify exemplary healthcare quality across stakeholders where legislators, consumers, and health practitioner accounts point to the central point of quality, care that promotes patient preferences, shared decision-making and positive health outcomes. Participants articulated the translation of local, state, and federal policies and accreditation processes regarding PS and partnering with patients (consumers and carers); institutional practices to create a shared vision to serve the community (social cohesion); professional(ism) practices demonstrating, a servant leadership style, communications about accountability systems for quality and safety, a focus on results, and a culture of teamwork, focus on results, and a culture of teamwork.

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ACRONYMS AND ABBREVIATIONS

BHI	Bureau of Health Information
CEC	Clinical Excellence Commissions
HAIs	hospital-acquired infections
HPH	high performing hospital
LHD	Local Health District
NHPA	National Health Performance Authority
NSW	New South Wales
OECD	Organization for Economic Co-operation and Development
P4P	Pay-for-performance
PCC	patient-centered care
PREMs	patient-reported experience measures
PROs	patient-reported outcomes
PROMs	patient-reported outcome measures
PS	patient safety
PSI	patient safety indicator
QI	quality improvement
QSA	Quality safety assessment

SDM	Shared Decision-Making
US	United States

CHAPTER 1: INTRODUCTION

This dissertation seeks to establish the grounds for an innovative model of healthcare quality assessment. Using a mixed-methods approach, it investigates how patient safety (PS) and patient-centered care (PCC) are identified, measured, and characterized in high-performing hospitals (HPHs). The research setting is hospitals in the state of New South Wales (NSW), Australia. HPHs were identified through analysis of multiple sources of publicly reported performance data in years 2014 and 2015. The research sought to integrate staff, patient, and consensus-based measures from these positive outliers into a model of healthcare quality assessment. The findings from this research could guide the efforts of hospitals and other healthcare organizations to achieve substantial improvements in service delivery.

1.1 Organization of dissertation

This dissertation is organized into five chapters. Chapter 1 provides the background and rationale for the research, outlines the study aims, and describes the significance of the study. Chapter 2 summarizes the literature as well as the conceptual models that frame the research. Chapter 3 presents the quantitative methodology used to score hospital quality for the study. Chapter 4 presents the research methodology and results for this qualitative grounded theory study regarding characteristics of HPHs. Chapter 5 discusses the findings and their implications for policy and practice, possible directions for future research, as well as the strengths and limitations of the work.

1.2 Background

All examinations of healthcare quality confront issues of accurately defining, measuring, and monitoring quality in such a way that gaps can be identified and addressed. Nonetheless, in

general, a focus on providing care that is safe and patient-centered signals high quality. Healthcare quality can be defined as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Institute of Medicine & America, 2001). Previous work(Brilli et al., 2013; Fisher & Shortell, 2010; Institute of Medicine & America, 2001; Kemp, Santana, Southern, McCormack, & Quan, 2016; Marsteller et al., 2012; Southwick, Cranley, & Hallisy, 2015) in PS and PCC shows that high-quality care is achieved when patients receive care that helps and not harms, and in which patients are primary contributors in their care.

Legislators, health practitioners, consumers, and caregivers worldwide are turning their attention to the interplay of healthcare quality and the practice of partnering with patients. Yet few healthcare systems take advantage of the benefits of systematically combining the perspectives of healthcare providers, scholars and patients to assess hospital quality and performance. While various process and outcome measures of performance exist to indicate ratings in areas like mortality and hospital-acquired infections (HAIs) or nosocomial infections, it is often unclear whether and how health professionals, hospital administrators, governments, policymakers, researchers, and the public might know a good hospital. Increasing emphasis on and further examination of the relationship between PS and PCC might open paths that lead towards improving overall healthcare quality.

Despite evidence suggesting the interdependence of patient-centeredness and engagement and PS, achieving patient-centered, safer care remains a challenge (Dixon-Woods et al., 2013b; Pronovost, Cleeman, Wright, & Srinivasan, 2016; Reed, May, Nicholas, Taylor, &

Brown, 2011; Woodward et al., 2010). Providing patient or person-centered care means that an individual's specific health needs and desired health outcomes are the driving force behind all healthcare decisions and quality measurements(Catalyst, 2017). Shared decision-making (SDM) is an essential element of PCC; it is defined as the process by which the patient and provider collaboratively discuss treatment options, values, beliefs, risks and benefits and mutually agree on a care decision (Barry & Edgman-Levitan, 2012). One reason shared decision-making is the pinnacle of PCC is because it shifts power from the provider alone to the patient and provider collaboratively. Sharing the responsibility for care decisions affects patient engagement, experience of care, compliance with treatment, and health outcomes, and requires providers to be engaged more fully with patients—all of which are integral to PCC. (Agency for Healthcare Research and Quality, Rockville, MD., 2020) One recent review of the evidence showed positive associations between patient experience, PS, and clinical effectiveness across a range of disease areas, study designs, settings, population groups, and outcome measures (Doyle, Lennox, & Bell, 2013). Another study showed that engagement of employees and physicians plays a crucial role in improving patient experience, as well as improving quality, safety, and financial performance (Cochrane et al., 2015). In the acute care domain, the identification of HPHs in both high- and low-income countries (N. Taylor et al., 2015) provides examples for other aspiring healthcare organizations to follow.

The premise of this study is that analyzing the characteristics of HPHs will enable the development of a healthcare quality assessment method that could guide healthcare organizations to achieve improvements in the patient-centeredness and safety of the care they deliver. It highlights various attempts to measure and

improve healthcare quality in a sustainable way (McCannon & Perla, 2009; Schouten, Hulscher, van Everdingen, Huijsman, & Grol, 2008) and describes the elements needed to do so. It explores the utility of "consensus-based measures" developed by subject matter experts to provide comparative information in a standardized format and the resulting glut of indicators, metrics, and measures from several disciplines—most of which are not easily understood in broader contexts. For example, United States (US)-generated patient safety indicators (PSIs), used to compare performance across member countries of the Organization for Economic Co-operation and Development (OECD), showed substantial systematic variation in national patient safety indicator rates across countries (Gauld:2014ig Drösler et al., 2009). The applicability of the PSIs is encouraging, but the need to examine interpretability across settings remains. So, while a multitude of measures exists, there is a need to measure and define healthcare quality in ways that reflect pluralistic realities. Measurement integrating varying perspectives of high-quality care can account for the disparate characteristics of hospital quality. Conducting qualitative assessments of HPHs expands understanding about characteristics and contexts at play. Thus, the goal of this research is to establish the grounds for an innovative model of assessment of healthcare quality by integrating staff, patient, and consensus-based measures of PS and PCC. The study investigates presentations of healthcare quality in the literature, methods to assess healthcare quality, and explains how context and behaviors contribute to manifestations of high performance.

1.3 Aims

This dissertation describes research into the measurement, identification, and characteristics of healthcare quality in HPHs with respect to PS and PCC. This scope

encompasses the following aims, each of which will be reflected in a stand-alone manuscript as part of the 3-manuscript format option selected for the purposes of this dissertation.

Aim 1

To establish the grounds for an innovative model of healthcare quality assessment by integrating staff, patient, and consensus-based measures of PS and PCC through:

a. summarizing existing measures of hospital performance of PS and PCC
b. assessing the agreement of patient, staff, and government-reported measures of hospital quality
c. generating an integrated model of hospital performance using a triangulation of data sources from patients, staff, and publicly reported quality indicators.

This aim will be achieved by conducting a literature review focusing on the characteristics of hospital performance and its publicly administered databases.

Aim 2

To evaluate hospital performance in PS and PCC in NSW, Australia, in 2014–2015 via assessing:

a. patient experience data from the NSW Bureau of Health Information (BHI)
b. staff perceptions of positive safety culture and the integration of patients and their families and carers into the "healthcare team", using the 2014 Clinical Excellence Commissions (CEC) Quality Safety Assessments (QSAs)
c. hand hygiene compliance rates and quality indicators reported to the National Health Performance Authority (NHPA).

This aim will be investigated using population-based data, obtained from NSW administrative databases, analyzed with descriptive statistics and summary scoring.

Aim 3

To explore organizational characteristics associated with high performance (positive deviants) in the delivery of safe, patient-centered care in hospitals in NSW, Australia. This aim will be investigated with a mixed-methods approach, using quantitative and qualitative data including interviews, observations, and site visits conducted at exemplary hospitals. The following chapters will examine each of these specific research aims, followed by an overall discussion and conclusions.

1.4 Significance

The systematic combination of perspectives on healthcare quality can accelerate understanding of what an HPH looks like and what it does differently than another hospital. Two decades after the Institute of Medicine (IOM) revealed astonishingly high rates of patient harm and mortality associated with receiving healthcare (AmericaInstitute of Medicine, 2000), the struggle to extract help rather than harm from the healthcare system continues. While considerable attention has been directed at improving quality in primary care (Drain, 2001; Shortell et al., 2016), continuing care (Cabana & Jee, 2004; Van Servellen, Fongwa, & D'Errico, 2006) and public health (Institute of Medicine, Services, & Delivery, 2001), the central focus of most high-income countries' health systems—with respect to quality improvement—remains hospitals (Berwick, Bibby, & Bisognano, 2013; Institute of Medicine & America, 2001; Reinhardt, Hussey, & Anderson, 2002) (which is why this research is confined to hospital settings). Globally, governments and health practitioners continue to measure and report hospital performance with the aim of creating safer, more

reliable healthcare. While effective quality improvement (QI) programs exist, (Dixon-Woods, Leslie, Tarrant, & Bion, 2013a; Fund2017, n.d.), expanded amounts of data and mandatory reports (Stone et al., 2010) fail to consistently deliver safer care, rendering healthcare providers and the public at a loss for how to make healthcare better.

The US healthcare system employs several approaches to improve healthcare quality, including global budgeting, mandatory reporting on various performance measures, and tying hospital reimbursement to performance. Pay-for-performance (P4P) uses metric-driven outcomes, best practices and patient satisfaction data to determine hospital reimbursement, but has yielded mixed results (Gillam, 2015; Herzer & Pronovost, 2015; Phipps Taylor & Shortell, 2016). US applications of P4P are prevalent but it is not clear whether P4P improves the patient experience and the outcomes of care or population health (Gillam, 2015). Other countries are prudent to proceed with caution in replicating P4P schemes based on American models.

Publicly funded health systems in England, Scotland and Australia commissioned studies of patient and consumer participation in healthcare feedback processes (Fund2017, n.d.; Gauld et al., 2014) to address shortcomings in the system. These resulted in the adoption of policies which more formally integrate patients, consumers, and carers as part of the governance and oversight of the healthcare system (Berwick, 2009; Jorm, Dunbar, Sudano, & Travaglia, 2009; Luxford & Newell, 2015; Luxford, Piper, Dunbar, & Poole, n.d.). Studies of the implementation of PS and PCC in less westernized healthcare systems, such as Iran's, echo findings that we have much to learn about effective implementation of PS and PCC strategies, enforcing standards, creating a PS and

PCC culture, increasing organizational responsiveness, and partnering with patients and their families (Aghaei Hashjin, Kringos, Manoochehri, Ravaghi, & Klazinga, 2014; Alicia Renedo, 2015; Berwick, 2010; Delbanco et al., 2001; Fisher & Shortell, 2010; Leape & Berwick, 2005).

Partnering with patients and their families in their care can take many forms. In addition to macro-level activities to place patients at the center of healthcare, there are efforts at the clinical level intent on directly engaging patients in their care by actively seeking their input and participation in clinical decisions (Abelson, 2018), formally evaluating their engagement (Abbasgholizadeh Rahimi, Zomahoun, & Légaré, 2019), and practicing shared decision-making in which patients are supported to deliberate and express their preferences and views (Elwyn et al., 2012). Patient and community involvement in redesigning care demonstrates the value of patients' experiences and infuses the patient's perspective as a part of problem-solving, and patients identified issues of which staff were unaware(Baker, Fancott, Judd, & O'Connor, 2016). Other methods to place patients at the center of healthcare include the collection and measurement of patient-reported outcomes (PROs). PROs are information from patients about their own health, quality of life, or functional status associated with the health care or treatment they have received. Patient-reported outcome measures (PROMs) are the tools and/or instruments used to report PROs. Patients report experiences using patient-reported experience measures (PREMs), such as satisfaction scales, which provide insight into the patients' experience with their care or a health service. The use of these methodologies to garner patient perspectives, and specifically the use of PREMs as a quality indicator of patient care and safety, is increasing globally(Weldring & Smith, 2013). However, as with other attempts to measure healthcare quality, PRO and PROM

implementation and effectiveness vary greatly(Weldring & Smith, 2013), and systematic and evidence-based approaches to their use are vital.

1.5 Public and private health systems approaches to quality improvement

The Australian health system is touted as one of the best in the world and its citizens enjoy one of the longest average life expectancies globally(Mathers, Sadana, Salomon, Murray, & Lopez, 2001). The system is jointly run by all levels of the Australian government – federal, state and territory, and local. Medicare is the foundation of the public hospital system and provides free or low-cost access for all Australians for most health care services i.e., primary care, specialty care, allied health care, and nursing care. There is also private health care which provides options outside of the public health system. The Australian government is responsible for overall provisions such as the Medicare Benefits Schedule (MBS), Pharmaceutical Benefits Schedule (PBS), supporting and regulating private health insurance, supporting and monitoring the quality, effectiveness and efficiency of primary health care services. Primary care is operated by 31 Primary health networks (PHNs) across Australia that coordinate health services in local areas. States, territories and local government shoulder responsibilities of managing and administering public hospitals, delivering preventive services and immunization programs, funding and managing community and mental health services, public dental clinics, ambulance and emergency services, patient transport and subsidy schemes, food safety and handling regulation, regulating, inspecting, licensing and monitoring health premises. Shared responsibilities across the government entities include funding public hospitals, preventive and palliative services, registering and accrediting health professionals, reforming mental health policy, and responding to national health emergencies. The jointly funded arrangement formalized through the National Healthcare

Agreement and the National Health Reform Agreement indicates the shared responsibility of both levels of government are responsible for overseeing health care quality(Forde, Nader, Brownwood, & Kumar, 2015). The Socio-Economic Indexes for Areas (SEIFA) ranks areas in Australia according to relative socio-economic advantage and disadvantage. The indexes are based on information from the five-yearly census and can be applied to determine areas that require funding, services and to inform research socio-economic disadvantage and various health and educational outcomes. Additional information from the Rural, Remote and Metropolitan Area (RRMA) classification is based on the geographic location and population density and informs decisions about the allocation of resources.

The state of New South Wales has the biggest public health system in Australia. The state's NSW Ministry of Health operates more than 230 public hospitals and provides community health and other public health services for the NSW community through a network of Local Health Districts (LHDs), specialty networks and non-government affiliated health organizations. Each LHD has a chief executive who oversees the operations and management of the hospitals within the LHD. Eight LHDs cover the Sydney metropolitan region, and seven cover rural and regional NSW. The current study includes hospitals varying in size and location identified across the state and represent several LHDs.

The Australian single-payer model of healthcare enables examination of hospital quality independent of market forces and incentives present in other dominantly private, capitalistic healthcare delivery systems, providing a contrasting lens to that used in most previous research on this topic.

The Australian and US health systems, and many other advanced healthcare systems (e.g., those of the United Kingdom, Canada, and New Zealand) are exploring means to monitor and improve healthcare quality. One approach is through the assessment of patient perceptions of their care experiences and levels of satisfaction. In the US, much of the momentum to improve quality has involved strict regulations and ties to financial reimbursement(Stone et al., 2010). The swelling amount of data being tracked and used to analyze performance has yet to yield commensurate improvements in quality outcomes(Austin & Kachalia, 2020; Austin et al., 2015; Pronovost, Miller, Winters, & Hunt, 2006). Partnering with patients and their families offers another viable path to decrease risk and improve outcomes.

In Australia, the publicly funded health system is beginning to explore how to connect financial incentives to performance. The US system, in which the payment and measurement contexts are different and care is largely privately
funded, heavily leverages market competition to improve and innovate, whereas the Australian publicly funded health system appears to place a simultaneous emphasis on patient centeredness and ensuring the safety of its patients. The Australian system involves centralized information and reporting structures; for example, there is a standardized format for hospital websites across states and organized by LHD making it easier to identify and recognize information across all hospitals in the state.

Both the US and Australia have undergone significant healthcare reform in the past decade (the Patient Protection and Affordable Care Act (US Government, 2010) and the Health Reform Agreement (Council of Australian Governments, 2011)) designed to accelerate changes in the quality of health care, but wide-scale improvements have been slow-coming.

Strategies that will improve patient outcomes and the quality of care received are crucial. The development of a framework that facilitates large-scale dissemination of high-performance practices via PS and PCC initiatives could significantly advance evidence about quality improvement and potentially shift health policy thinking and clinical practice. While some regulatory and legislative frameworks in Australia differ from those in the US, the broad concepts are similar. Rather than undertaking a country comparison, the research presented in this thesis is designed to enhance understanding of various policy and organizational factors at play such that lessons might be extrapolated across different settings. This work examines the path that some Australian organizations and practitioners are traveling in their attempts to arrive at exceptional quality and forge a nexus of PS and PCC. Looking within the Australian healthcare system offers a chance to see a different convergence of PS and PCC, and how that re-centering gives rise to high quality. The lessons learned in this study may well be applicable to other high income publicly funded (or, perhaps in the US) hospital systems.

This chapter serves as an introduction to the current landscape of assessing healthcare quality and the need for explicit connections of PS and PCC to improve overall quality. The next chapter will further explore the literature related to measuring and identifying high performance in health care and conceptual models used to examine exemplar organizations.

CHAPTER 2: MEASURING AND IDENTIFYING HIGH PERFORMING HOSPITALS: LITERATURE REVIEW

2.1 Background

Existing data sources provide some means of tracking hospital performance for surveillance purposes. Still, patients, regulators and subject matter experts often use different information to determine HPHs, making it challenging for various stakeholders to know what a good hospital is.

Though the Institute of Medicine (IOM) included PS and PCC as core components of healthcare quality (Figure 1) in the 2001 harbinger publication *Crossing the Quality Chasm* (Institute of Medicine, 2001), in subsequent publications, the links between PS and PCC are often missing as scientists and society grope for guidance to identify high-quality healthcare.

The goal of this chapter is to summarize the literature on assessing exemplary healthcare quality with particular attention to PCC and preventing patient harm. The chapter focuses on three common domains of measuring healthcare quality: patient experience, workforce perceptions of healthcare quality, and observations of workforce compliance with hand hygiene guidance. Also included in this discussion are some of the historical precedents of modern healthcare quality measurement. Finally, this literature review examines two conceptual models used to identify hospitals demonstrating high performance in healthcare delivery.

2.2 Search strategy

The search strategy for this study acknowledged the overlap of the concepts contributing to assessments of healthcare quality and identification of HPHs. Peer-reviewed studies were identified through Medline, Embase and Cinahl (Jan 2000 – Dec 2015) using search terms, key words, subject terms, and medical subject headings, including search parameters. Consultation with a librarian with database and search strategy expertise guided the search and included the following search terms “high performing hospitals,” “quality improvement,” “improvement,” “review” and “healthcare quality.” While the initial search yielded 127 articles, on closer inspection of the articles, only 10 met the inclusion criteria for the current study: report hospital-wide measures of quality. The results of the literature search illustrate the challenges that consumers, health practitioners and legislators face in attempting to empirically assess the overall quality of a hospital (*Figure 2*).

Some older sources of the initial 127 were included to show the history and evolving nature of the topic of healthcare quality measurement. A subset (n=10) of the most relevant sources for this study is listed in Table 1of this dissertation and provides the foundation for the literature review.

2.3 The complexity of defining hospital quality

In 1966, Avedis Donabedian noted the difficulty of identifying a single definition of quality of care, writing that it seemed unlikely that there will ever be a single comprehensive criterion by which to measure the quality of patient care (Donabedian, 1966). Donabedian also stated that most studies of quality suffer from having adopted too narrow a definition of quality (Donabedian, 1966)Twenty years later, Donabedian returned to the difficulty of defining

quality and reasserted that any assessment of quality must begin with a definition (Donabedian, 1988). In the absence of a ubiquitous definition of quality, Donabedian's structure-process-outcome framework (Donabedian, 1966)continues to be used in the definition, measurement and reporting of healthcare quality(Chun & Bafford, 2014).

The continued use of Donabedian's framework highlights one of the key barriers to establishing a singular definition of quality: measurement. Defining quality enables the examination and critique of its manifestations or lack thereof. Thus, the ability to measure quality is contingent upon how one defines it. The challenges with definition persist, because attempts to simplify lead to the inclusion or exclusion of elements intended to appeal to a particular audience or practitioner. The complexity of defining quality is the problem at the crux of the issue of identification and examination of HPHs—the focus of this dissertation.

One currently applied definition of healthcare quality, "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge," was developed by the IOM in the 1990s (Institute of Medicine & America, 2001).The IOM subsequently applied its definition of quality in a concerted effort to assess and improve US healthcare quality, and released a series of reports on the matter. At the core of the IOM's definition are the domains of PS and the provision of PCC (the twin foci of this study of HPHs), such that a person (aka patient) benefits from the health services provided and is treated as an integral contributor to positive health outcomes. Accordingly, the IOM defined PS as "the prevention of harm to patients," and PCC as "providing care that is respectful of and responsive to individual patient preferences, needs,

and values, and ensuring that patient values guide all clinical decisions" (Institute of Medicine & America, 2001).

2.4 History of measurement of healthcare quality

Measurement is a necessary precursor to improvement of the quality of healthcare delivered and received by patients, because it enables benchmarking and comparisons across time. Early accounts of hospital quality appear in Florence Nightingale's 1850s publications on the differences and causes of patient mortality rates in England (Chun & Bafford, 2014; Marjoua & Bozic, 2012; Marshall, Shekelle, Davies, & Smith, 2003). In 1917, the US Surgeon General, Ernest Codman, created hospital standards to be used in assessing healthcare outcomes (Marjoua & Bozic, 2012). In 1951, in the Quality Control Handbook, Juran wrote of the costs of poor quality across all industries (Juran, 1962).In the 1960s, Donabedian's framework (introduced in section 2.3) began to be used to apply systems thinking to healthcare, and continues to inform definitions and evaluations of healthcare quality. Avedis Donabedian expounded on conceptions of quality to examine medical care quality, focusing on the interdependence of the structures, processes and outcomes of the healthcare delivery system. He asserted that structures provide the context of the system, for example, the equipment and personnel; processes are the actions involved in the provision of care; and outcomes are the outputs or effects of the delivery system (Donabedian, 1966)However, Donabedian expressed disappointment later in his career about the constricted lens which his structure-process-outcome model provided in examinations of healthcare quality. Donabedian had thought of the framework as only the beginning of a blueprint for the key components of quality (aka the House of Quality)(Schiff & Rucker, 2001); he

argued that users of his model often failed to recognize that a more holistic framework of quality would include assessments of how people interact with one another within their work environs (Schiff & Rucker, 2001);Moreover, it appears that Donabedian believed his framework had led to false rivalries between sub-disciplines and proponents of QI (Schiff & Rucker, 2001);Undoubtedly, the field of healthcare quality continues to grapple with how to explore and evaluate contributors to quality using standardized, holistic approaches.

2.5 Indicators of healthcare quality

Surveillance and reporting on PS (the prevention of harm to patients) is a generally accepted means of examining good care. Most agree that health practitioners set out to help and not harm patients. Thus, measuring and tracking patient harms, such as HAIs, as indicators of healthcare quality is a longstanding practice, because many of the infections acquired during hospital stays are preventable (Klevens et al., 2007; Umscheid et al., 2011). Though evidence guides the practices needed to prevent the occurrence of HAIs, decades of efforts have fallen short of eliminating them, and it is not obvious to what extent quality has improved and precisely who has benefitted (DeANGELIS, 2016) }. It is clear, however, that there is no one-size-fits all solution to eliminate patient harm, and that prevention efforts must be widespread, multifaceted and include changes in health policy and practices.

According to Donabedian, the adoption of any definition of quality should be accompanied by accurate measurement and systematic and evidence-based data collection. The act of measuring itself commands a multitude of resources, and often forces the creation of structures and processes for data collection, analysis and meaningful interpretation. Donabedian also suggested that the tradeoffs commensurate with the standardization required for accurate measurement can result in the loss of the ability to account for unforeseen

elements in the clinical situation, such that reliability is achieved at the cost of validity (Donabedian, 1966). The neglect of some unforeseen elements is often a function of a recurrent emphasis on expediency. Pressure to provide rapid accounts of performance also contributes to the forfeiture of time to uniformly apply patient-centered practice and integrate PROs (which acknowledge that only patients can report on their symptoms and quality of life (Black & Jenkinson, 2009) and the individual's experience of care (Davidson, Cockburn, Daly, & Sanson Fisher, 2004)). Similar constraints affect the balance between rigor and the feasibility of evaluation of healthcare quality, and result in disjointed measurement systems of quality for practitioners, patients and the public.

In the recent past, many of the efforts and resources dedicated to QI focused on the use of consensus-based measures and those used for surveillance purposes. While providing standardized approaches, these measures arguably cater to the needs of the healthcare delivery system and regulators more than practitioners or the public. Nevertheless, practitioners must comply with the collection of measures to meet reporting requirements. At times, these measures appear disconnected from clinical practice; for example, case definitions used for surveillance and reporting systems differ from those used for diagnostic and treatment purposes (Weeks, Goeschel, Cosgrove, Romig, & Berenholtz, 2011), and do not consider contributing factors such as patient preferences. Another consequence of applying surveillance methodologies for epidemiological purposes and reporting is the lack of immediate benefit to the patient under care or the health providers, since confirming and aggregating data creates substantial lags (Austin & Kachalia, 2020) in sharing information needed for real-time clinical decision-making.

Few measures of overall hospital performance exist, and they have substantial limitations. Often reports of performance apply to a specific discipline or clinical area (Keroack et al., 2007), such as central line associated blood stream infection (CLABSI) rates in intensive care units (ICUs) or "door to balloon times" for emergency departments— the time between the moment a patient with a possible heart attack enters an emergency room and when she undergoes balloon angioplasty. Furthermore, comparisons of four well-known hospital rating systems in the US found that only 10% of the 844 hospitals rated as high performers by one rating system had the same rating in any of the others (Austin et al., 2015). There is no shortage of attempts to identify positive and negative outliers in the provision of healthcare, but a comprehensive, widely accepted account of a "good" hospital is lacking. Currently, there is a gap between measurement approaches in both evolving national data systems and evidence-based improvement strategies (Burstin, Leatherman, & Goldmann, 2016). A more integrated model which appeals to practitioners and the public alike is needed to achieve significant gains in evaluating, reporting, and improving healthcare quality.

Identifying factors associated with the provision of high-quality healthcare

A particularly valuable publication identified during the conceptual stage of the literature search was Taylor et al.'s article entitled "High performing hospitals: a qualitative systematic review of associated factors and practical strategies for improvement." The aim of the review was to identify methods used to identify HPHs, the factors associated with high performers, and practical strategies for improvement. Taylor et al. screened 11,428 articles, ultimately focusing on 19. From them, the authors distilled seven factors associated with high performance: positive organizational culture, senior management support, affective performance monitoring, building and maintaining workforce, effective leaders across the

organization, expertise-driven practice, and interdisciplinary teamwork. They concluded that their findings provided a method to identify HPHs and factors associated with the provision of high-quality healthcare. (Their findings served as a basis for the study described in this dissertation, and informed the identification of HPHs in NSW during the years 2014 and 2015.) Six of the 19 studies used process measures, but none reported hospital-wide process measures. Examples of process measures were achieving a median door-to-balloon time of less than 90 minutes and extent of change in left ventricular ejection fraction (LVEF). Eight studies used outcome measures, for example, internal medicine outcome measures such as rates of pneumonia and congestive heart failure, or risk-standardized mortality rate. Six studies used rating or scoring systems. A mixed-methods approach was applied in 12 studies, and seven studies employed qualitative methods only. All 19 included studies used interviews to identify factors of high performance. Nine studies from that review also involved site visits or observation; six studies included other methods. The attention paid to the qualitative elements of examining high performance promotes the combination of qualitative assessments with quantifiable measures of performance for the identification of HPHs.

Of the 19 studies included in Taylor et al.'s systematic review (Taylor, Clay-Williams, Hogden, Braithwaite, & Groene, 2015a), 10 met the inclusion criteria for the current study: explicit measure of quality, adult population, hospital-wide measure of performance, source of data reported, and measure type reported. Eight studies were excluded for lacking a hospital-wide metric or a metric not inclusive of PS or patient centeredness (e.g., cardiac metric LVEF or myocardial infarction undergoing percutaneous coronary intervention); including only acute

care hospitals in analysis; employing unit-based, unknown standardized metrics; having a pediatric setting; or using finance metrics only.

Taylor et al.'s findings illustrate why studies of healthcare quality performance may not share definitions, may use area-specific measures rather than hospital-wide measures, and appeal only to a specific discipline or audience (i.e., doctors, legislators or consumers). In contrast, the 10 articles included in the current study applied hospital-wide measures and described the measures and related data used to identify high performers comprehensively. Their characteristics are summarized in Table 1, and the studies are reviewed in detail in the following text.

Mannion et al. (2005) identified high-performing acute care hospitals using the UK's National Health System (NHS) star rating. Four low (0 or 1 star) and two high (3 star) performing hospitals participated in semi-structured interviews, document reviews, and site visits (Mannion, Davies, health, 2005). The authors stated that "it is difficult to overestimate the importance of star ratings within the NHS performance management system" to facilitate accountability to patient and the public and focus attention on key strategic priorities and national targets (Mannion et al., n.d.).

Cherlin et al. used the CMS Hospital Compare website (January 1, 2005 – December 31, 2007) to identify high- and low-performing acute hospitals (Cherlin et al., 2013)The authors applied deviant case sampling, examining hospitals at the extreme ends of the range in 30-day risk standardized mortality rates (RSMRs). The hospital sample included those ranking in the top and lowest 5% of hospital for patients with acute myocardial infarction (AMI).

Landman et al. used CMS data to examine differences between high- and low-performing acute hospitals with respect to views on collaboration with emergency medical services (EMS) of patients with AMI(Landman et al., 2013). Landman et al. applied similar methods to Cherlin (Cherlin et al., 2013) to identify HPHs. The sample included 11 US hospitals which ranked in the top or bottom 5% of performance on 30-day risk-standardized AMI mortality rates. The authors suggested that additional mixed-methods approaches to explore collaborative care between EMS and hospitals in larger, representative studies are warranted.

Rangachari et al. used process measures collected via the New York State hospital administrative database to categorize hospitals as good and poor performers using the percentage of uncertain coding (0-5 % = good, 95–100 % = poor). (Rangachari, 2008) A purposeful sample of two good and two poor performers were included in the study. The authors conducted semi-structured interviews with individuals and groups, lasting 0.75–1 hour and an online survey of knowledge of quality measurement. The authors sought to examine knowledge-sharing networks related to hospital quality measurement and reporting. After analyzing the differences in high and low performers, the study authors suggested that improving hospital coding performance requires proactive and incessant efforts by senior administrators to coordinate knowledge exchange across the hospital's internal and external environments and physician subgroups.

Baumann et al. used the NHS's star ratings to identify six high-performing primary care trusts across a mix of geographic locations and applied a multi-staged process to examine rates of delays of hospital discharge and emergency readmissions data for a four-year period (1998–2002). (Baumann, 2007). The purpose of this study was to investigate discharge practice and

the organization of services at sites with consistently low rates of delay, with the aim of identifying factors supporting such good performance. The authors showed a range of service elements contributed to the avoidance of delays, but highlighted a need for further research to assess the impacts of government reimbursement schemes on staff and patients and their families.

Keroack et al. examined discharge data from 79 teaching hospitals across the University Health System Consortium and created a composite index of patient-level process and outcomes data (Keroack, 2007). Six institutions (three top and three average performers) were selected for site visits, covering different geographical areas and levels of hospital ownership. Data was collected from internal documents, site visits, document verification and information gathering during 1.5-day-long interviews. Keroack et al.'s study employed one of the most robust approaches to characterization of overall hospital performance, involving applying both process and outcome measures (29 in all), collection of data in a standardized format, and within a specified hospital type to calculate a composite score of quality and safety derived entirely from patient-level data on outcomes and processes of care. The authors scored and ranked the eligible hospitals and conducted site visits at the top three and three middle from the distribution. They concluded that institutions that had distinguished themselves from their peers in broad-based measures of patient care excellence shared several characteristics, starting with explicitly defining quality, safety and service as top institutional priorities. The authors confirm the findings of Shortell et al. regarding the measurable relationship between sound hospital leadership and high hospital performance (Shortell et al., 2005) . The study

population included Academic Medical Centers (AMCs) and cautions that extrapolations to other organizations should heed contextual differences.

Adelman et al. examined hospitals which had won the Malcolm Baldrige National Quality Award (MBNQA) or state-level Baldridge award in the last seven years (Adelman, n.d.). Two MBNQA and two Baldridge recipients participated in semi-structured interviews, and the MBNQA documents were reviewed to understand specific CEO behaviors and actions promoting employee voice and upward communication in award-winning healthcare organizations. A key finding of the study was that CEOs should exhibit behaviors and communications which invite employees to provide critical feedback about the organization to support continuous quality improvement.

VanDeusen et al. conducted a mixed-methods longitudinal comparative case study in seven medical centers in one network in the Department of Veterans Affairs, implementing and evaluating an organizational model hypothesized to strengthen the ability of healthcare organizations to facilitate evidence-based practices (EBPs). The target EBP was hand hygiene compliance. The organizational model tested was grounded in the organizational transformation model (OTM) developed in the evaluation of the Robert Wood Johnson Foundation's Pursuing Perfection (P2) initiative (VanDeusen, 2010). Measures included ratings of implementation fidelity, observed hand hygiene compliance, and factors affecting model implementation (drawn from interviews). The authors found that greater fidelity to the organizational model was associated with higher compliance with hand hygiene guidelines.

Curry et al.

(Curry, Spatz, Cherlin, internal, 2011, n.d.)used outcomes data from the CMS Hospital Compare website to examine 11 hospitals that ranked in the top 5% of performance on RSMRs for AMI care. Interviews and information collected during site visits led the authors to conclude that achieving high performance may require long-term investment and concerted efforts to create an organizational culture that supports full engagement in quality, strong communication and coordination among groups, and the capacity for problem-solving and learning across the organization.

Olson et al. examined process measures from American Heart Association (AHA) /American Stroke Association data to identify top-performing sites from the top 1% of all hospitals contributing to the "Get with the Guidelines – Stroke" program (n = 1315) in the assessment, treatment, and monitoring of stroke patients treated with intravenous (IV) recombinant tissue plasminogen activator/alteplase (tPA) (Olson, 2011). Thirteen personnel in total at seven top performing hospitals were interviewed; the results revealed five distinct domains associated with rapid IV tPA delivery.

Several of the reviewed studies demonstrated effective means to identify HPHs, but the work undertaken by Keroack et al. (2007) explicitly included measures of quality, safety, mortality, effectiveness and equity. Furthermore, the authors called out the lack of measures of patient-centeredness in the literature, stating that they had not been included in their own study due to the lack of availability of consensus measures in the area. The findings of VanDeusen et al. conducted in the VA hospital network showed that hand-hygiene compliance measures signal organizational and clinical excellence.

The methods and findings identified in this review of the literature provide the foundation for more comprehensive assessments of hospital quality and practical strategies which other organizations might adopt to improve overall quality. The findings also suggest that the combination of different measures (qualitative and quantitative) of healthcare quality offers a robust means to assess and identify high-performing hospitals. The literature supports the use of data used to assess patient, staff, and expert accounts of healthcare quality.

2.6 Measuring patient experience and hospital safety culture

It is difficult for many consumers to assess whether a hospital provides high quality-care (Bradley, Curry, Ramanadhan, Rowe, Nembhard, & Krumholz, 2009a; Bradley et al., 2005; sutcliffe, n.d.), and wide-scale improvements in healthcare quality remain elusive Knowing whether a hospital keeps patients safe and free from harm is one of healthcare consumers' fundamental expectations. While some debate exists over the extent to which patient involvement guarantees safety, there are key distinctions between relying on patients to ensure their safety and involving patients in their care while efforts are made to improve their safety(Entwistle, 2007). Doyle et al.'s (2013) systematic review highlights a multitude of positive associations between hospital patient experience, clinical safety and effectiveness outcomes, and showed that patients reporting positive care experiences are likely to have positive clinical outcomes(Doyle, Lennox, & Bell, 2013) . Further evidence supports patient contributions to safety and the prevention of errors and adverse events

(Davis, Vincent, & Sevdalis, 2015; Entwistle, 2007; Koutantji, Davis, Vincent, risk, 2005, n.d.; Vincent & Coulter, 2002). In 2008, the Council of Europe[1], the World Alliance for Patient Safety and several other organizations recommended the involvement of patients in the reporting of incidents and safety management, and several organizations in

Europe have subsequently provided educational materials that motivate patients to engage in their safety(Perneger, 2008; Schwappach, 2009).

Public demand for the healthcare industry to increase transparency, accountability and, in the US, reduce costs (Berwick, Nolan, & Whittington, 2008; Pronovost & Marsteller, 2014) is growing. Attempts to realize accountability have translated into the creation of legislation requiring hospitals to publicly report and link payment to several measures of healthcare quality. For example, in 2008, the Centers for Medicare and Medicaid Services (CMS) began denying reimbursement for selected conditions (all HAIs) determined to be associated with hospital stay

(Lee, Kleinman, Soumerai, of, 2012, n.d.; Stone et al., 2010). Other legislative changes in various Western countries, such as the Patient Protection and Affordable Care Act (US Government, 2010) and the Health Reform Agreement (Council of Australian Governments, 2011), focus on the delivery of PCC with simultaneous attention to preventing patient harm. The creation of such policies and legislative levers amplifies the importance of including patient input alongside other assessments of healthcare delivery. They seek to yield improvements in quality and address gaps in quality improvement processes where other efforts have fallen short (Bradley, Curry, Ramanadhan, Rowe, Nembhard, & Krumholz, 2009a; Davidoff, Dixon-Woods, Leviton, & Michie, 2015; Marsteller et al., 2012; Pronovost, Cleeman, Wright, & Srinivasan, 2016). While these policies have driven many organizations to collect information on patients' experiences of care, patients still find it challenging to determine hospital quality in meaningful terms (Marshall et al., 2003). Patients are not alone in their desire for a unified means of determining hospital performance.

Legislative changes have driven the US and a growing number of other countries to employ survey instruments and data collection processes to meet reporting requirements. Some of the instruments include assessments of patient perceptions of their care and workforce perceptions of hospital safety culture, given the association between workforce perceptions of safety and patient mortality (Battles, Dixon, Borotkanics, Rabin Fastmen, & Kaplan, 2006; Berry et al., 2020; Roter, 2006). Research has also confirmed a positive relationship between patients' perceptions of care and their outcomes (Cochrane et al., 2015; Lawton et al., 2015; Southwick, Cranley, & Hallisy, 2015) . In 2002, the CMS and the US Agency for Healthcare Research and Quality (AHRQ) developed the first standardized, publicly reported survey of patients' experiences of their hospital care—The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). The HCAHPS collects information from samples of medical, surgical and obstetric patients, and includes measures from nine specific aspects of care quality:

- communication with nurses
- communication with doctors
- responsiveness of hospital staff
- pain management
- communication about medicines
- discharge information
- cleanliness and quietness of hospital
- overall rating of the hospital
- patient willingness to recommend the hospital (Lawton et al., 2015)

Several studies have since further explored the relationship between patient perceptions of care and PS outcomes (Kemp, Santana, Southern, McCormack, & Quan, 2016). In 2010, Isaac et al. published work showing that patients reporting better experiences had lower rates of various PS outcomes (decubitus ulcers, infections, and other complications)(Isaac, Zaslavsky, Cleary, & Landon, 2010)Other countries have used the HCAHPS as a blueprint for similar instruments for assessing patient perceptions of care(Iedema & Angell, 2015a).

Another creation of the AHRQ, the Hospital Survey On Patient Safety Culture (HSOPS), is widely used in the US and abroad to assess hospital safety culture in the healthcare setting. The HSOPS measures attitudes and beliefs at the individual level of the workforce using a 5-point Likert scale. The results can be used for both intra- and inter-institutional comparisons on the following domains:

1. Teamwork Within Units (Clinical Area)
2. Supervisor/Manager Expectations & Actions Promoting Patient Safety
3. Organizational Learning—Continuous Improvement
4. Management Support for Patient Safety
5. Overall Perceptions of Patient Safety
6. Feedback & Communication About Error
7. Communication Openness
8. Frequency of Events Reported
9. Teamwork Across Units
10. Staffing

11. Handoffs & Transitions
12. Nonpunitive Response to Errors
13. Patient Safety Grade
14. Health Information Technology (IT) *(Supplemental)*
    a. Electronic Health Record (EHR) System Training
    b. EHR System Support and Communication
    c. EHR Patient Safety and Quality Issues
    d. EHR and Workflow/Work Process
    e. Overall EHR System Rating
15. Value and Efficiency *(Supplemental)*
    a. Empowerment to Improve Efficiency
    b. Efficiency and Waste Reduction
    c. Patient Centeredness and Efficiency
    d. Management Support for Improving Efficiency and Reducing Waste
    e. Experience with Activities to Improve Efficiency
    f. Overall Ratings (patient-centered, effective, timely, efficient)

Both the HCAHPS and HSOPS produce information about culture at organizational and individual levels. These instruments and others like them are useful, but may not fully capture some of the concomitant contextual factors contributing to the provision of safe, patient-centered care (Iedema & Angell, 2015b; Singer, Lin, Falwell, Gaba, & Baker, 2009). Recent evidence supports the existence of a relationship between workforce culture, prevention of

patient harm and positive patient perceptions of care, whereby organizations with a workforce culture focused on providing safe care are also more likely to have patients rate their care experience more positively (Mohr, Eaton, McPhaul, & Hodgson, 2018). Further exploration is needed to understand how organizations can progress with respect to these elements. Policymakers, practitioners and patients alike stand to benefit most from the implementation of rigorous, thoughtful approaches to review safety culture that are informed by the needs of clinicians and patients

(Jha, Orav, Zheng, & Epstein, 2008; Pronovost, Med, 2014, n.d.)rather than approaches that may facilitate assessment but miss the point of improvements in quality and safety. The development of frameworks informed by evaluations of high-performing organizations could accelerate widespread understanding of how other healthcare organizations can reach equivalent QI goals.

2.6.1 The Australian healthcare system and policy drivers for patient safety and patient-centered care

In 1999, health ministers from Australia's six states and two territories agreed to create a national body to advise and address the problem of health care safety and quality. The Australian Council for Safety and Quality in Health Care was established in response to a 1995 publication revealing an adverse event rate of 16.6% in parts of the country (Wilson, Burke, Priest, & Salas, 2005)and convened in 2000 to promote systemic improvements in the safety and quality of health care. The Council included input from the Taskforce on Quality in Australian Health Care and the National Expert Advisory Group on Safety and Quality in Australian Health Care; it advanced the country's examination of and approaches to issues of

patient safety and quality, but had no statutory or regulatory authority(Barraclough & Birch, 2006). The outputs from the Council included progress in key areas of safety and quality, such as the creation of systems and tools to monitor and manage PS incidents, research infrastructures to study PS, national standards and policies on reporting safety incidents, paths for consumer involvement in improving health care safety, and agreements to publicly report sentinel events in each jurisdiction. Ultimately, the Council's work drove the formation of the Australian Commission on Safety and Quality in Health Care (ACSQHC). The ACSQHC was charged with implementing safety and quality practices at all levels of the Australian health system (Barraclough & Birch, 2006). The key functions of the Commission include: developing national safety and quality standards, developing clinical care standards to improve the implementation of evidence-based health care, coordinating work in specific areas to improve outcomes for patients, and providing information, publications and resources about safety and quality (Australian Commission on Safety and Quality in Health Care, n.d.). As of 2005, the ACSQHC began focusing on priority areas(Barraclough & Birch, 2006; Phillips, 2003) that included:

- better use of data to identify, learn from, and prevent error and system failure,
- redesigning systems and creating a culture of safety within healthcare organizations, and
- involving consumers in improving healthcare safety.

In 2010, Karen Luxford and colleagues at the ACQSHC published *Patient-centered Care: Improving Quality and Safety by Focusing Care on Patients and Consumers*, which includes a recommendation to focus on work environment, work culture, and satisfaction of staff as an

integral strategy for improving PCC (Luxford, 2013; Luxford, Piper, Dunbar, & Poole, n.d.). The report further states that workforce surveys should be undertaken at regular intervals to monitor the work environment, which also enables the assessment of attitudes, beliefs and norms around safety. In 2013, mandatory accreditation standards for health services stipulated that consumers should be engaged in organizational governance for healthcare organizations (Luxford & Newell, 2015)to further accelerate partnering with patients in Australia. As a part of the national policy to implement partnership with patients anc consumers, Greenfield et al. noted that the evidence of benefits or limitations of consumer involvement in Australian health service accreditation programs was negligible(Greenfield et al., 2012), indicating the need for further investigation of the implications of consumer involvement. Subsequent studies by Hinchliff et al. revealed that Australian policymakers were favorable to the concept of including consumers in the accreditation process; one policymaker said: 'A consumer surveyor is probably a very good one [idea], actually, because they will look at it [quality] as a totally different perspective ... Certainly from a user's perspective'(Hinchcliff et al., 2012; 2013)Another participant suggested it was a method of increasing the perceived rigor of accreditation programs: 'If you have consumer surveyors, it would give a lot of credence to the community that you actually are meeting the community needs, not just an organisational need' (Hinchcliff et al., 2012)In 2015, Karen Luxford explained that a national policy which included PCC as a key national goal for safety and quality in healthcare was a significant driver of the adoption of patient-centered approaches to improve safety in NSW (Luxford & Newell, 2015; Maher, 2013)}.

Dr. Luxford's policy recommendations regarding the engagement of patients and consumers in quality improvement in Australia were influenced by 2011 examinations of US-based hospitals with a reputation for successfully promoting and achieving success in the delivery of PCC (Luxford, Safran, & Delbanco, 2011b) in which Dr. Luxford and colleagues in the US identified key facilitators, organizational attributes, and processes of making care more patient-centered(Luxford, Safran, & Delbanco, 2011a) Each of the facilitators (e.g., demonstrations of strong, committed leadership, clear communication of strategic vision, sustained focus on staff satisfaction, and capacity building—(Luxford, Safran, & Delbanco, 2011b) of PCC strongly resemble similar efforts toward improvements in the area of PS. (Luxford, Safran, & Delbanco, 2011b) might have gleaned additional evidence in support of their findings by including frontline staff as well as members of hospital management in their research, because managements' perceptions of the effectiveness of strategies tend to vary more widely than those of frontline providers (Singer, Falwell, Gaba, & Baker, 2008), and cross-organizational links between initiatives to measure and improve PS and PCC that should be further examined.

Luxford et al.'s 2011findings (Luxford, Safran, & Delbanco, 2011a) confirm the important role that leadership plays in shifting shared mental models(Klimoski & Mohammed, 1994) and behaviors towards achieving patient-centered outcomes, but actions from organizational leadership are necessary yet insufficient drivers of effective and sustained changes in either discipline. Accountability structures should include input from both top-down (senior leadership) and bottom-up (frontline) efforts (improvement, 2013)and include assessments of workforce culture including a lens focused on safety. Clinicians prefer to have initiatives

implemented *with* rather than *to* them. Attempts to provide accountability should be further explored at the federal, state, municipal, and frontline-provider layers of society to more fully understand levels of compliance with recommendations to provide safe and patient-centered care. Furthermore, fostering a culture of safety across an organization is strongly linked to the provision of PCC (Mohr, Eaton, McPhaul, & Hodgson, 2015). Cultural norms that permit one provider to "speak up" to another provider, regardless of levels of training, are likely to influence whether and how a patient might likewise feel empowered to ask a provider if they have washed their hands (Iedema & Angell, 2015c)or otherwise assert their wishes and/or concerns to providers. Thus, including patients and families as partners in the provision of care explicates the relationship between workforce and patient perceptions and clinical outcomes of healthcare quality.

The next section describes the pairing indicators of high quality healthcare with evidence–based conceptual models used to identify high performance across other disciplines and various countries.

2.7 Conceptual models to identify exemplars

Two studies identified in the literature search employed conceptual models to identify high performers. The use of conceptual models offers a connection between theory and the real world, surfaces assumptions, guides analyses, and can explain observable manifestations of the theories put forth. Additionally, the use of conceptual models lends credibility to study implementation and results. As discussed previously, Donabedian's structure-process-outcome conceptual model is a frequently used healthcare quality assessment framework; it illustrates the interconnected components of a system and the results which accompany the

inner workings of the structures and processes therein. While Donabedian's model of quality provides a conceptual means to understand the relationships within a health system, it is often presented as an oversimplified depiction of the consequences of some other contextual factors, that is, structures and processes within a given system such as the policies and decisions which led to the creation of the structures and processes.

The two conceptual models identified in the literature search were the Positive Deviance model(Bradley, Curry, Ramanadhan, Rowe, Nembhard, & Krumholz, 2009b) and High Performing Hospitals in Hospital Quality(Taylor, Clay-Williams, Hogden, Braithwaite, & Groene, 2015b).The Positive Deviance model describes organizations that achieve desired outcomes despite facing the same constraints as similar but lower-performing organizations (JD, 1972; Sternin, review, 2000, n.d.; Wishik, Health, 1976, n.d.). The High Performing Hospitals in Hospital Quality model is based on an assessment of hospitals from several countries, and describes the factors associated with high performance in hospital quality and achievement of improvement (Taylor, Clay-Williams, Hogden, Braithwaite, & Groene, 2015b). They were combined to inform the current study's identification and study of HPHs in NSW and guide the analyses of high performance both beyond and within the field of healthcare quality. The models aided examination of methods of assessing healthcare quality (patient experience surveys, staff culture surveys, and hand hygiene compliance measurement) and selection of appropriate methods, and helped identify threats to the validity of the study of HPHs and extrapolation to others.

2.7.1 The Positive Deviance Model

Positive deviance is based on the observation that every community contains certain individuals, groups, or organizations whose uncommon behaviors and strategies enable them to find better solutions to problems than their peers, while having access to the same resources and facing similar or worse challenges (JD, 1972; Sternin et al., n.d.; Wishik et al., n.d.). According to Bradley et al.(Bradley, Curry, Ramanadhan, Rowe, Nembhard, & Krumholz, 2009b), the positive deviance approach, as applied to healthcare, identifies innovative strategies from those organizations that consistently demonstrate exceptionally high performance in an area of interest (e.g., survival rates, medication use, and timely emergency treatment). Outlier, "positive deviant" organization(s) demonstrate that solutions to problems that face a community often exist within that community, and that certain members possess wisdom that can be generalized to improve the performance of other members (Baxter, Taylor, Kellar, & Lawton, 2015; Bradley, Curry, Ramanadhan, Rowe, Nembhard, & Krumholz, 2009a; Sternin et al., n.d.). The healthcare community stands to reap the benefits of applying the positive deviance model towards improved healthcare quality. The positive deviant approach works when there is variation in organizational performance and outcomes across the industry, with some organizations (positive deviants) achieving consistently high performance. The model consists of four sequential steps, as shown in Figure 3. Baxter et al examined the application of the positive deviant approach in the healthcare setting and concluded a lack of staff and/or patient involvement and prompted the comparison (of positive deviance) with other quality improvement approaches(Baxter, Kellar, Taylor, & Lawton, 2014).

2.7.2 High Performing Hospitals in Hospital Quality

As outlined in section 2.5.1 Taylor et al.'s (Taylor, Clay-Williams, Hogden, Braithwaite, & Groene, 2015c) systematic review of the literature outlined seven factors associated with high performance in QI in hospitals worldwide:

1. positive organizational culture;
2. senior management support;
3. effective performance monitoring;
4. building and maintaining a proficient workforce;
5. effective leaders across the organization;
6. expertise-driven practice, and
7. interdisciplinary teamwork.

Taylor et al.summarized methods used to identify HPHs, the factors associated with high performers, and practical strategies for improvement. The studies they reviewed used quantitative methods to identify HPHs, and qualitative methods or tools to identify factors associated with HPHs or hospital departments.

Taylor et al.'s review exposes the challenges faced by hospitals and organizations in trying to assess and achieve high performance. The authors argued that an exclusively quantitative approach will fail to identify richly descriptive or relevant contextual factors of hospitals able to reach desired outcomes (Taylor, Clay-Williams, Hogden, Braithwaite, & Groene, 2015c).

2.7.3 Innovative approach to identify high performance in hospital quality

Combining the concepts of high performance with positive deviance produces a model for identifying HPHs and analyzing how they achieve improvements in the quality of care delivered. The combined model provides benefits for hospital quality assessment that exceed

anything in the current research literature. The merged conceptual model drove the design and implementation of this research. It enabled the candidate to summarize existing measures of hospital performance of PS and PCC; assess the agreement of patient, staff, and government-reported measures of hospital performance; and generate an integrated model of hospital performance using triangulation of data sources from patients, staff, and publicly reported quality indicators.

2.8 Conclusion

This chapter describes the complex issues surrounding the measurement of healthcare quality and patient contributions to improve healthcare quality, safety and delivery. Achieving QI in healthcare requires the robust measurement and inclusion of patient (family and caregiver) contributions. The literature supports the integration of multiple data sources to identify hospitals that offer high-quality care.

More clarity is needed with respect to the structures and formats that enable QI initiatives that most effectively achieve safe, patient-centered healthcare. Understanding these strategies and how they are deployed will facilitate development of a framework for ensuring that patients are safe and thoughtfully included in care teams in healthcare organizations. Application of the combined Positive Deviance model and the High Performing Hospitals in Hospital Quality model enables identification of HPHs and examination of characteristics that contribute to quality improvement.

The next chapter applies a combination of the principles included in the aforementioned conceptual models to analyze three independent data sources, relating to providers, patients and experts, to identify HPHs.

Figure 1. Institute of Medicine Dimensions of Quality

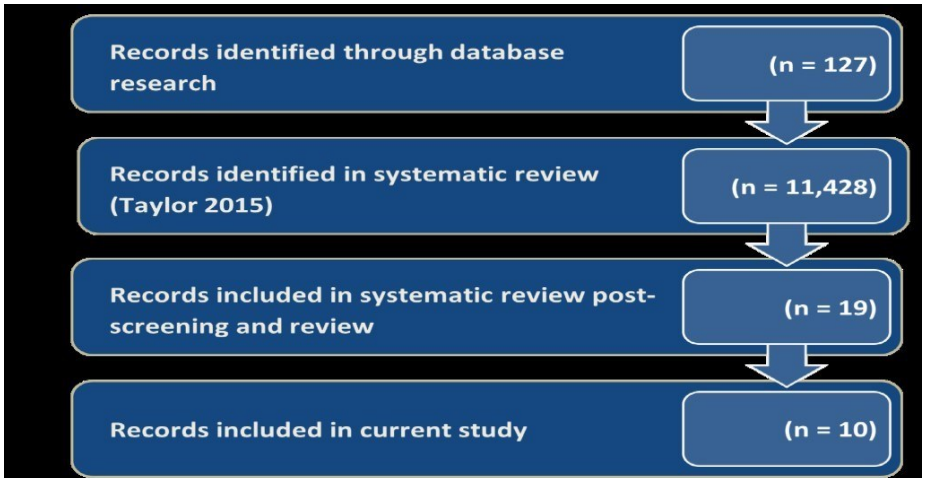

Figure 2. Literature search flowchart

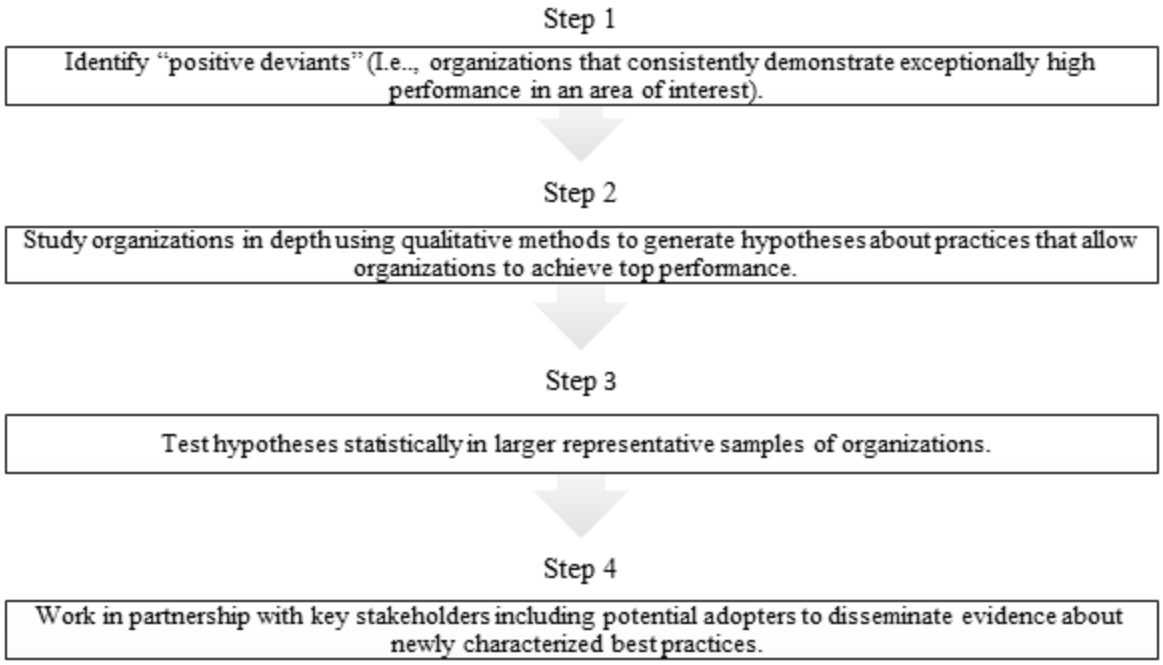

Figure 3. The Positive Deviance Model (Bradley, et al,. 2009a)

Table 1. Characteristics of included studies that used hospital-wide measures to identify high-performing hospitals

Study	**Data Source**	**Measure type**	**Data Collection**	**Methodological approach used to identify high-performing sites**
Mannion et al. (2005)	NHS Star ratings	Other (rating)	Interviews Document Reviews Site Visits	Hospitals were identified using the NHS star rating. Four low (0 or 1 star) and 2 high (3 star) performing hospitals were included.
Cherlin et al. (2013)	CMS Hospital Compare website	Outcome	Interviews Site visits	US hospitals were selected as high or low performers if their 30-day risk standardized mortality rates were in the top or bottom 5 %, respectively, for two consecutive years. (n = 7)
Landman et al. (2013)	CMS Hospital Compare website	Outcome	Interviews Site visits	Hospitals were eligible for inclusion as high or low performers if their 30 day risk-standardized mortality rate was in the top 5 % or bottom 5 % of performance for 2 consecutive years.
Rangachari (2008)	New York State hospital administrative database	Process	Interviews Survey	Hospitals were categorized as good and poor performers using the percentage of uncertain coding (0–5% = good, 95%–100% = poor). A purposeful sample of two good and two poor performers was selected from those willing to participate in the study.
Baumann et al. (2007)	Not stated	Outcome, Other (reporting, rating)	Interviews - Topic guide	A multistage analysis of delay and emergency readmissions Hospitals selected as high performers ensured a mix of geography and local authority type.

Keroack et al. (2007)	University Health System Consortium, an alliance of 97 university teaching hospitals	Process, Output, Outcome, Other	Document Review Interviews	A composite index of patient-level process and outcomes data, including indicators on preventable complications and mortality rates, evidence-based practices and equity of care, was calculated from discharge abstract data from 79 academic medical centers. Six institutions (three top and three average performers) were selected for site visits, covering different geographical areas and levels of hospital ownership.
Adelman (2012)	Malcolm Baldrige National Quality Award (MBNQA) or state-level Baldrige award	Other (award recipient)	Document review - MBNQA/Baldrige award application. Interviews - Semi-structured	Hospitals which had won either an MBNQA or state-level Baldridge award in the last 7 years were the target sample. Two MBNQA and two Baldridge recipients participated.
VanDeusen Lukas et al. (2010)	Veterans Administration (VA) Network	Process	Interviews	7 sites from one VA Network implemented EBPs. Hand hygiene compliance scores and the overall fidelity of the model was calculated for each site. Site with a score over 3 were considered high fidelity (n = 4).

Curry et al. (2011)	CMS Hospital Compare website	Outcome	Interviews Site visits	Hospitals that ranked in the top 5% of performance on RSMRs for AMI care during both years were eligible for inclusion. Selection continued until theoretical saturation, which occurred after 7 HPHs.
Olson et al. (2011)	American Heart Association / American Stroke Association	Process	Interviews - Semi-structured	Top-performing sites were defined as those in the top 1% of all hospitals contributing to the "Get with the Guidelines – Stroke" program (n = 1315) for achieving a door-to-needle time of less than 60 min. Hospitals administering tPA to fewer than 12 patients (average of less than one patient per month) were excluded (n = 960). All hospitals who were asked to participate agreed. 13 personnel in total at 7 top-performing hospitals were interviewed.

Chapter 3: "IDENTIFYING SAFE, PATIENT-CENTERED CARE: TRIANGULATING DATA OF PATIENT, STAFF, AND STATE ACCOUNTS OF HIGH PERFORMING HOSPITALS"

Abstract: "Providing Safe, Patient-Centered Care: Triangulating data of patient, staff, and state accounts of high performing hospitals"

Objective. To analyze publicly reported hospital performance over the period 2014-2015 from three independent data sources to identify exemplary hospitals, High Performing Hospitals (HPHs), regarding patient safety (PS) and patient-centered care (PCC) aspects of healthcare quality.

Materials and Methods. We conducted a literature review and synthesis of measures used to assess healthcare quality, patient safety, and patient-centered practices. To identify HPHs in New South Wales, Australia, we triangulated three different publicly reported data sources of 66 hospitals from the perspectives of staff, patients, and subject matter experts. All data were from the same year, 2014. We calculated a summary score for each hospital across all three data sets. Principal Component Analysis (PCA)s were conducted retrospectively to test the sensitivity of the summary scoring methods.

Results. 66 hospitals were analyzed. Eight hospitals of large, medium, and small sizes (Hospital Peer Groups A(~548 beds), B(~280 beds), C(~82 beds) across different geographic locations were identified. Community-based, smaller hospitals tended to have higher summary scores than more complex, larger hospitals.

Discussion. Combining information collected from the perspectives of patients, staff, and consensus-based indicators of quality offers a parsimonious means to identify exemplary "good" hospitals across various stakeholders.

INTRODUCTION

The purpose of this chapter is to introduce the quantitative research methodology used to identify High Performing Hospitals (HPHs) based on Patient Safety (PS) and Patient-Centered Care (PCC) measures. This analysis used publicly reported hospital quality measures from three independent data sources to identify exemplary hospitals. Subsequent chapters focus on the qualitative assessment of HPHs to understand which hospital characteristics are associated with high performance in healthcare quality.

A review of the literature reported in the previous chapters guided the research design, methodological decisions, and choice of measures used in this study of HPHs. The foundation of this work comes from pairing together models of positive deviance and high performance. The Positive Deviance model describes organizations that achieve desired outcomes despite facing the same constraints as similar but lower-performing organizations (Marsh, Schroeder, Dearden, Sternin, & Sternin, 2004), (Wishik & Vynckt, 1976), (Baxter, Kellar, Taylor, & Lawton, 2014){Sternin, #211}. The Positive Deviance model was first applied in the 1970s by policy developers to test the concept that public health interventions could be designed around uncommon, beneficial health behaviors that some community members already practiced that resulted in positive outcomes (Wishik & Vynckt, 1976), (Marsh et al., 2004) Bradley et al. applied the model to identify innovative strategies from 'positive deviants' in healthcare quality (Bradley et al., 2009). While the High Performing Hospitals in Hospital Quality model summarizes the factors associated with high performance in hospital quality and achievement of improvement (Taylor, Clay-Williams, Hogden, Braithwaite, & Groene, 2015) The combination of these two models informed the analytical approach and choice of measures used to identify HPHs in PS and PCC using data sourced from patients, staff, and publicly reported quality

measures. Taylor et al. conducted a systematic review of high performance in hospitals. The review summarized quality measures used to measure hospital quality. Several of the reported measures were specific to a service line or unit (ward). This study applied publicly available hospital-wide, evidence-based quality measures collected using standardized methods. The identification of quality measures is the first step in identifying HPH's in the positive deviant model, wherein hospitals that demonstrate high-quality care despite facing similar constraints to other hospitals are referred to as positive deviants.

3.1 Background and Significance

Keeping patients free from harm and including them as part of their care results in better outcomes (J. M. Kim et al., 2017; Lawton et al., 2015; Schwappach, 2009; Vincent & Coulter, 2002), higher rates of satisfaction with the care provided, and contributes to healthcare quality (Doyle, Lennox, & Bell, 2013). For example, patients who suffer an adverse event typically rate the quality of care they received lower than patients who did not suffer an event (Weissman et al., 2014). Patients who experienced injuries because of medical care rather than the natural history of the illness rated their care less favorably. Also, the public reporting of comparative data of patient and provider views of the quality of care can enhance and reinforce quality improvement (QI) efforts in hospitals (Barr et al., 2006). Thus, patient reports of quality and safety can provide additional insights into improving overall healthcare quality. Identifying HPHs which have a positive record of delivering safe, patient-centered care enables the investigation of the contextual and other organizational factors that are related to high-quality care and outcomes. Guided by the positive deviant model applied to the healthcare setting (Bradley et al., 2009), identification

of HPHs demonstrates the potential for other hospitals to achieve success in improving healthcare delivery.

Healthcare quality can be defined in many domains - safety, patient experience, efficiency, equity, effectiveness, and timeliness (Institute of Medicine Committee on Quality of Health Care in America, 2000). Assessments of a hospital's performance can include a single dimension or a combination of different dimensions of quality. For purposes of this research, quality is defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (Institute & America, 2001). The triangulation of data from multiple quality domains helps create a stronger indication of a hospital's overall quality. For example, a multi-dimensional depiction of a hospital's performance would recognize that patient feedback provides a signal of safety issues, and that workforce culture is associated with the quality of care provided. (Berwick, 2009; Shortell et al., 1995)Ratings of hospital performance do exist-- in the United States, these include the Leapfrog Group's Hospital Safety Grade, CMS's Overall Hospital Quality Star Ratings, and *US News & World Report's* Best Hospitals. However, each of these organizations constructs their ratings to measure different underlying constructs and may disagree on which hospitals are high performing across the different ranking systems. (Austin et al., 2015)

Several countries have adopted approaches to survey the patient's perceptions of their care and separately survey the provider's views of the safety and orientation of care towards the patient (*Designing a high-performing health care system for patients with complex needs: ten recommendations for policymakers.*, 2017) (Davis, Schoen, & System). It

is increasingly common practice to conduct these types of surveys. Several national health systems report on a standardized set of measures or indicators of PS, such as rates of hospital-acquired infections (HAIs) and mortality
(Davis et al.). It is not common practice, however, to combine the perspectives of various stakeholders.

This study aims to identify a set of rigorous, standardized measures of PS and PCC that can yield a summary score of hospital quality meant to be interpretable to a broad audience. The study expands on previous approaches (Taylor et al., 2015) by triangulating three data sources to identify exemplary organizations. Combining these three data sources allows for the identification of positively deviating HPHs and could provide valuable insights and approaches for other hospitals to follow towards routinely providing safe, patient-centered, higher quality care.

The measures chosen for inclusion in the summary score, ideally represent both patient and staff perceptions of PS and PCC, along with externally collected quality indicators. We undertook a review of the literature and measures used to assess healthcare quality, patient safety, and patient-centered practices. The outputs of the review drove the selection of measures used to identify HPHs in New South Wales, Australia, including measures of patient experience, perceptions of positive safety culture and integration of patients and carers, and hand hygiene compliance rates.

3.2 Patient experience data

Patient involvement in their care is a driver of quality improvement. (Berwick, 2009), (Iedema & Angell, 2015), (Vincent & Coulter, 2002),(Jha, Orav, Zheng, & Epstein,

2008), (Black & Jenkinson, 2009b), (Black & Jenkinson, 2009a). Patients offer a complementary perspective to clinicians, providing unique information on the effectiveness of health care. One type of patient experience survey asks patients, once they are discharged from the hospital, about their experience with their care (Darby, Hays, & Kletke, 2005). The survey questions typically assess patient perceptions of several domains of their care, including PS, PCC, and hygiene. The broad use of patient experience surveys in the US has incentivized improvement of patient experience in hospitals during the past ten years (Kahn et al., 1994), (Barr et al., 2006).

Surveying patients about their experiences of care started in the mid-1980s when medical anthropologist Dr. Irwin Press partnered with sociologist and statistician Dr. Rod Ganey to create Press Ganey's first scientifically rigorous and valid survey to help improve healthcare by asking patients about their care ("Press Ganey - History & Mission,"). Press Ganey's early work informed the development of the Hospital Consumer Assessment of Healthcare Providers and Systems (Darby et al., 2005), better known as the HCAHPS survey, which is widely used in US hospitals. In the early 1990s, The Picker Institute expanded the use of scientifically validated, nation-wide surveys on patient-centered care to educate doctors and hospital staff on improving services from the patient's perspective. In October 1995, the Agency for Health Care Policy and Research (AHRQ) in the US developed the first CAHPS survey to help advance quality measurement standardization. The CAHPS Program leveraged groundbreaking work on patient experience by the Picker Institute to include reports in addition to ratings of patient care. The HCAHPS survey contains 29 items assessing aspects of the hospital experience, such as communication with doctors and nurses, discharge information, and the

cleanliness and quiet of the hospital environment. The UK national health system developed patient experience surveys based on Picker Institute materials (Fitzpatrick et al., 2014) commissioned by them.

Similarly, the Australian health system also integrated learnings from the Picker Institute. It adopted and adapted questions similar to those included in the Press Ganey and HCAHPS survey in developing the Adult Admitted Patient Survey. The Adult Admitted Patient Survey is administered by the Bureau of Health Information in the state of New South Wales and assesses patient perceptions of their care after hospital discharge.

Research suggests that better health care experiences correlate with improved medical compliance, clinical outcomes, and care continuity, as well as reduced length of stay, medication errors, and malpractice litigation and costs{Giordano:2010hb}. It has also been shown to link to higher employee satisfaction and retention rates and reduced operating costs (Luxford & Newell, 2015), (Luxford, Safran, & Delbanco, 2011), (Charmel & Healthc, 0003).

3.3 Workforce/staff perceptions of organizational safety culture

Several studies show that safety culture is related to various clinician behaviors such as error reporting (Braithwaite, Westbrook, Travaglia, & Hughes, 2010) reductions in adverse events (Singer, Lin, Falwell, Gaba, & Baker, 2009), (Mardon, Khanna, Sorra, Dyer, & Famolaro, 2010), (Weaver et al., 2013), , and reduced patient mortality (Estabrooks et al., 2002), (Weaver **et** al., 2013). Patient safety culture can be defined as one aspect of an organization's culture wherein manifestations of culture represent shared beliefs, values, norms, and procedures related to patient safety among members of an organization, unit (ward)or team (Pronovost et al., 2006), (Edgar, 1984). Patient safety climate and patient

safety culture are often used synonymously, but there is a distinction between the two concepts. Patient safety climate refers specifically to shared perceptions or attitudes about the norms, policies, and procedures related to patient safety among members of a group (e.g., unit, ward, service line, department, or organization. (Zohar, Livne, Tenne-Gazit, Admi, & Donchin, 2007) Patient safety climate is an assessment of workforce (clinician and staff) perceptions about organizational safety culture at a particular time and is often measured using a questionnaire or survey. Patient Safety culture is a more complex and enduring trait reflecting fundamental values, norms, assumptions, and expectations, which may also reflect the societal culture at large (Mearns & Flin, 1999).

Workforce perceptions of PS and PCC can provide insight into the links between the hospital's safety climate and potential safety events (Backman, Zoutman, & Marck, 2008), (Nieva & Sorra, 2003). Nurses from more patient-centered work units reported that medication errors occurred less frequently in their units and said that they felt more comfortable reporting errors and near-misses than those in less patient-centered units (Rathert & May, 2007).Another study found that frontline provider's perceptions of the organization's safety culture predicted the risk of a patient experiencing a patient safety event, but that senior manager perceptions of the organization's culture did not (Singer et al., 2009). Alignment between frontline staff and senior management perceptions of safety are indicative of a culture that promotes safety. Also, hospital staff and nurse attitudes regarding partnering with patients and families show a positive relationship to both PS and patient satisfaction (Wei, Sewell, Woody, & Rose, 2018), (Boev, 2012)

The measurement and reporting of workforce perceptions are a window into an organization's priorities and focus on PS and PCC or lack thereof. While it is possible that staff might feel compelled to report favorably about "the state of safety" in their organization, such a bias can be overcome by higher levels of response and the use of psychometrically valid, reliable instruments. Additionally, qualitative assessments and in-depth analysis of interactions among members inform a shared view of safety can further elucidate reported perceptions of safety.

Some of the key surveys used to measure workforce/staff perceptions of patient safety culture and climate in the United States, the United Kingdom, and Australia include the Hospital Survey on Patient Safety (HSOPS), Safety Attitudes Questionnaire (SAQ), patient safety climate in healthcare organizations, and hospital safety climate scale. These surveys use standardized, psychometrically valid measures of workforce perceptions. Generally, they cover five common dimensions of patient safety climate: leadership, policies and procedures, staffing, communication, and reporting (Colla, Bracken, Kinney, & Weeks, 2005). In New South Wales, Australia, the survey of workforce perceptions of patient safety is called the Quality Systems Assessment (QSA). The survey questions show direct linkages to National Standard Actions (Clinical Excellence Commission, 2015).

3.4 Hand hygiene compliance

Poor compliance with proper hand hygiene practices is a known path of exposure to pathogens (World Health Organization, 2009). Conversely, compliance with proper hand hygiene (HH) is the single most important practice in preventing the transmission of infections to patients, but compliance is difficult to achieve and maintain (Boscart, Fernie, Lee, & Jaglal,

2012). Hand hygiene compliance rates are leading indicators of quality (REF) since hand hygiene compliance is a predictor of infection rates (Backman et al., 2008), (Pittet, 2001).The risk to the patient significantly increases during procedures when hand hygiene compliance is low.

Hand hygiene compliance is a valid and reliable measure within healthcare. The measurement of hand hygiene compliance is a globally recognized indicator of PS and quality (World Health Organization, 2009), (Pittet, 2001).

Hand hygiene compliance is a signal to patients and practitioners of evidence-based practice, and compliance with hand hygiene guidance is associated with workforce perceptions of PS culture (World Health Organization, 2009), (Stewardson & Pittet, 2012). Hand hygiene compliance is a proxy measure for PCC and PS. Partnering with patients as a part of the care team has shown to lead to improvements in infection prevention and control(M.-K. Kim et al., 2015), (McGuckin et al., 2001), (Luszczynska & Gunson, 2007) (Landers, Abusalem, Coty, & Bingham, 2012). The WHO Multi-model Hand Hygiene Culture Change Program includes evaluation and feedback components and instructions on collecting hand hygiene compliance data.

There are several methods used to measure hand hygiene compliance. The World Health Organization (WHO) states that direct observation is the gold standard to monitor compliance with optimal hand hygiene practice (WHO guidelines) (World Health Organization, 2009). During direct observation, trained observers use a standardized instrument to collect data on the completion of evidence-based hand hygiene practices. Other methods include self-reported or indirect measurement of hand hygiene compliance, e.g., counting by electronic sensors. The Australian national hand hygiene campaign (Hand Hygiene Australia) made their

online web-based application for hand hygiene compliance monitoring (HHCApp) freely available for other national campaigns or healthcare facilities. The WHO acknowledges the rigor of the Australian monitoring system and strongly supports its use by other countries for hand hygiene data collection.

3.5 Methods

Using publicly reported data sources, we combined data from patient experience surveys, workforce perceptions of safety and partnering with patients, and observed hand hygiene compliance rates to calculate a hospital quality summary score for 66 hospitals located in New South Wales, Australia. The summary score intends to measure overall hospital quality through measures of PS and PCC and recorded observations and responses from patients, providers, and subject matter experts. All three measures reflected data from the calendar year 2014.

The summary score used an additive model to combine a hospital's three measures. The use of an additive approach assumes that each of the measures is independent of each other. The summary score included scores from a subset of patient satisfaction questions (12 of 106), workforce perceptions of safety and patient partnership questions (3 of 6), and the hospital's rank in hand hygiene compliance out of the total number of hospitals studied (rank 1-66).

Hospitals were placed into peer groups based on the Ministry of Health of the state of New South Wale's standard approach for categorizing hospitals with similar characteristics. The characteristics include the number of beds at the facility, specialties, and acuity levels. Peer grouping aims to identify hospitals with similar characteristics, predominantly for comparative

reporting and service planning. Some hospitals scored higher in some areas but not in others. Some hospitals had higher scores in hand hygiene compliance rates but had lower scores in staff reported measures of safety and patient-centeredness or patient perceptions of the care they received. For purposes of comparing hospitals of different sizes and acuity levels in this study, we identified the top-ranked hospitals from each Hospital Peer Group (A1-A3; B1-B2; C1-C2) as HPHs. The top three hospitals from Peer Groups A and C were identified to account for differences in scoring results in hospital sub-groups, i.e., A1 hospitals relative to A3 hospitals, and C1 hospitals relative to C2 hospitals. A description of each hospital peer group, in terms of the services offered or size, can be found in Appendix A.

A Principal Component Analysis (PCA) examined the variation of the hospital scoring for the questions included in the three data sources: patient experience survey (Adult Admitted Patient Survey), workforce survey (The Quality Systems Assessment (QSA)), and Hand Hygiene Compliance data (NHPA). The PCA analysis standardizes the responses across each of the data sets to create a Z score. It examines the relationships of the questions related to the dimensions of PS and PCC.

Data Sources

Patient experience data were extracted from the Adult Admitted Patient Survey collected by The Bureau of Health Information (BHI) (Bureau of Health Information, 2015) The survey asks for feedback from patients who have recently been discharged from a public hospital in NSW. The BHI uses a sampling strategy to send surveys (Bureau of Health Information, 2014) to 70,000–85,000 people per year at approximately three months after the end of their hospital stay. The 2014 Adult Admitted Patient Survey was mailed to approximately 70,000 patients. The

survey achieved a response rate of 43%. The response rate was adjusted to account for the oversampling of some patients.

The Adult Admitted Patient Survey includes 106 questions over 17 domains. A sample of the 2014 Adult Admitted Patient Survey can be found in Appendix B and located. Survey questions are based on Likert scale response and are scored on a descending scale based on the number of response options (e.g., 2,1,-2,-1). Question-level scores were used to calculate a total score for each organization.

The subset of questions from the BHI Adult Admitted Patient Survey, which showed the strongest correlation with PCC and PS, was used in the summary score. Appendix C: shows the subset of the questions included from the Adult Admitted Patient Survey.

The total score for the patient experience data was the sum of patient scores across each question. All questions were weighted equally. Appendix C lists those questions from the BHI Adult Admitted Patient Survey that were used in calculating a hospital's score for patient experience and the survey domain from which the survey question is derived.

Survey data from clinical staff regarding perceptions of organizational safety culture and patient-centered practices came from The Quality Systems Assessment (QSA) surveys collected by the Clinical Excellence Commission (CEC), which serves as the state-level reporting agency on quality and safety (Clinical Excellence Commission, 2015).

Facility-level survey respondents included staff acting in roles such as: Facility or Cluster Manager, Patient Safety Manager/ Quality Manager, Director of Medical Services, Director of Nursing, Director of Allied Health, and other relevant executive staff. The 2014 QSA had 1,793 respondents, which reflected a 99.4% response rate. Survey questions are based on a Likert

scale response and are scored on a descending scale based on the number of responses (e.g., 5.4.3.2.1). The entire QSA Instrument is located at http://www.cec.health.nsw.gov.au/__data/assets/pdf_file/0007/259297/fac-cluster_level-2014selfax.pdf . Summary and Reports are located at http://www.cec.health.nsw.gov.au/programs/qsa. Three questions related to concepts of safety and partnership with patients and carers were extracted for this study and can be found in Appendix D. The three QSA questions came from the Patient-Based Care sections of the survey, which were linked directly to actions related to patient safety and partnering with consumers articulated in the first edition of the National Safety and Quality Health Service Standards (NSQHS) (Australian Commission on Safety and Quality in Health Care, 2012). For example, NSQHS Standard 2 Action 2.1.1 requires that healthcare organizations involve consumers and carers in the governance of the organization, and Action 2.2.1 requires the establishment of mechanisms to include consumers and carers in strategic and operational planning. NSQHS Action:1.8.3 examines whether systems exist to escalate the level of care when there is an unexpected deterioration in health status. NSQHS Action: 9.9.1 examines whether mechanisms are in place for a patient, family member, or carer to initiate an escalation of care response. Accordingly, the three included QSA questions represent workforce perceptions of safety and partnership with patients and carers. There are likely correlations between the three included questions indicating overlapping dimensions (PSS and PCC) measured by the questions.

Hand hygiene compliance rates were calculated based on the staff member's compliance with the WHO's guidelines for the five distinct moments for hand hygiene. See

Appendix E for WHO's list of five distinct moments associated with increased risk of spread of contaminants, also located at http://www.who.int/gpsc/5may/5Moments_Image.gif. Washing or sanitizing hands before patient contact is a moment intended to protect patients from transmission from the practitioner. Evidence shows lower rates of compliance with this moment compared to compliance rates observed after patient contact, which tends to protect practitioners (Landers et al., 2012), (Stewardson & Pittet, 2012), (Schwappach, 2009),(M.-K. Kim et al., 2015) (Sax et al., 2007), Thus, hand hygiene compliance rates are a robust indicator of considerations of both safety and patient-centeredness.

Publicly reported hand hygiene data were collected from the National Safety and Quality Health Service Standards by the CEC for hospitals in 2014. Audits are conducted three times per year by state auditors. The Hand Hygiene Australia hand hygiene compliance auditing method is by direct observation of healthcare workers. Hand hygiene compliance data must be collected and submitted by validated auditors to meet state and federal requirements.

The hand hygiene compliance rate was calculated by comparing the number of hand hygiene moments for which hand hygiene was appropriately performed compared to the total moments observed. For example, a hospital with 324 correct moments compared to 331 total observed moments would have a 97.9% hand hygiene compliance rate.

Summary Score Calculation

A sum score was calculated for each of the subsets of questions from the surveys regarding staff perceptions of organizational safety culture and patient perceptions of their care along with the rank score of hand hygiene compliance (1-66, 66 being the

highest). Organizations with the highest total **hand hygiene** compliance score were combined with the other two data sources regarding staff perceptions of organizational safety culture and patient perceptions of their care. To confirm summary score results, we retrospectively conducted a sensitivity analysis via Principal Component Analysis (PCA) since the three data sets do not all use the same response scale (5, 4, 3, 2, 1 vs. +2, +1, -1, -2). The PCA calculated a Z-score for each variable to provide a consistent way to examine overall scores and the variation of scores across the dimensions of PCC and PCC.

3.6 Results

The summary score was calculated for 66 hospitals in NSW, Australia. The non-weighted summary scores across these hospitals ranged between 1686 and 2071 total points. From those 66 hospitals, the top two scoring hospitals with the highest score from Peer Groups B were identified. The top three scoring hospitals from Peer Groups A and C were identified to account for the differences in scores in sub-group peers A1and A3 hospitals and C1 and C2 hospitals. A total of eight HPHs represented different geographic locations and all three hospital sizes. Hospitals in the community-based peer groups (C1-C2) are smaller hospitals and tended to have higher summary scores than larger hospitals serving more complex patient needs (Peer Groups A1 & A3). Summary scores ranged between 1686-1975 points for Peer Group A, 1690-1927 for Peer Group B, and 1765-2071 for Peer Group C. The eight HPHs identified serve as the population sample for the qualitative assessments explained in the subsequent chapters. Table 2 describes the characteristics of the eight identified HPHs compared to the hospitals not identified as HPH. High performers tended to score higher across all three data sets (HPHs median 1959 [min 1856- max 2071] vs. Non-HPHs median 1862 [min 1686- max 2033]. Figure 4 shows the variation in the overall

scores by the different hospital peer groups (A-C). Hospitals in Peer Group C (community/district level) scored highest across all Peer Groups. HPHs tended to be more rural (75.0%) than urban (25.0%), where non-HPHs were spread equally in rural and urban locations.

The first three principal components represented the majority of the variation of all the components for the Principal Component Analysis of the three data sets (Patient (BHI), Provider (QSA), Hand Hygiene Compliance (NHPA). Figure 5 shows the mean PCA score across all three components (PC1, PC2, PC3) by hospital peer groups were similar to the summary score results, supporting the credibility of the summary scoring methods.

Figure 6 shows the distribution of BHI Adult Admitted Patient Survey scores by Peer Groups A-C. Community/district level hospitals (Peer Groups C1&C2) tended to score higher than all other hospitals across Peer Groups. Hospitals in Peer Group A3 scored higher than A1 hospitals. It also reveals new opportunities to explore the high-performance practice occurring at the community/district hospital level.

Figure 7 shows the distribution of Hand Hygiene Compliance scores by Peer Groups A-C hospitals. Community/district level hospitals (Peer Groups C1& C2) tended to score higher than all other hospitals across Peer Groups. However, there was greater intra-peer variation in performance across C1&C2 hospitals. Note that the y-axis ranges from 0-100% compliance. Though the mean compliance was generally the same across hospitals, there were several positively deviating community/district level hospitals with exceedingly high rates (>90%) of hand hygiene compliance. Figure 8 shows the distribution of QSA scores of Workforce Perceptions of PS and PCC by Peer Groups A-C. Overall, Community/district level hospitals (Peer

Groups C1 & C2) tended to score higher than all other hospitals across Peer Groups. While Community/district level hospitals (Peer Groups C1 & C2) again outscored the other hospitals on average, figure 5 prompts inquiry; HPHs from Peer Groups A & B scored higher across all hospitals. One possible explanation is higher workforce reports of fully implemented formalized PS and PCC programs among larger (A & B Peer Groups) relative to C1 & C2 hospitals.

This study calculated a quality summary score for 66 hospitals in New South Wales, Australia, that integrated measures from the perspective of patients, staff, and experts in the field of PS and quality, with a particular emphasis on using measures of PCC and PS. From the initial set of results, we identified eight HPHs for further study. HPHs were more likely to be located in rural rather than urban settings, smaller and community/district level, as compared to non-HPHs. HPH's tended to score higher across all three data sources representing the perspectives of patients, staff, and subject matter experts.

While others have done work to relay quality information about hospitals, we approached this work by combining measures into a summary score to reduce the number of data points and information overload. And while others have calculated composite scores of hospital quality, for example, Keroack et al. (Keroack, Youngberg, Cerese, et al., 2007)(Index, Index, Index, Index, & de Fiziologie a) explored "Organizational Factors Associated with High Performance in Quality and Safety in Academic Medical Centers," they omitted PCC metrics from their composite index. At the same time, this study emphasized PCC and measures related to safety in our summary score.

The Australian health system provides multiple publicly available data sources on hospital performance, but there is still a need for a harmonious account of overall hospital

quality. For example, one Australian site (HealthStaff Recruitment, 2017) touts a list of "best hospitals" as performing well in a single quality measure, i.e., emergency room wait times; the number of admissions per year; lowest HAI rates; wait-times for elective surgery, and contributions to teaching and research, but the application of only one measure may not be useful when considering more than one part of quality. To the best of our knowledge, no summary scoring system to identify HPHs existed in Australia at the time of the study.

Legislators, consumers, and health practitioners often have different ideas about how to identify a hospital's performance. The growing amounts of data being collected and reported about healthcare quality can be overwhelming. The vast amount of healthcare data can leave users feeling a sense of information overload. Attempts to understand how healthcare quality is defined and measured further complicates issues around decision-making. This study was novel in combining the perspectives of patients, the workforce, and regulators in identifying HPHs. Moreover, this study directly incorporates measures of PS and PCC to determine health care quality and those hospitals able to deliver it despite facing the same constraints as others.

This analysis demonstrated the feasibility of creating a hospital quality summary score using data collected from patients and carers, health practitioners, and subject matter experts. The results showed that community hospitals and hospitals of various sizes and levels of acuity are also able to achieve clinical excellence regarding PS and PCC. The results build on the work completed by Taylor, Keroack, Bradley, VanDeusen, (and others which demonstrated the use of various quality metrics across hospitals to assess high performance in quality. The design encourages future analysis, which incorporates data from patients alongside other

measures of quality. Where prior studies have focused only on a particular service-line or clinical outcome, this study combines process and outcome measures and hospital-wide measures of quality. Other evolving approaches to assessing quality are poised for similar considerations. The application of this summary scoring to identify high performance in the Australian context can inform similar efforts in the US and healthcare systems that collect hospital quality data. While the data used in the current study are publicly reported in Australia, other health systems currently collecting data from patients, the workforce, and hand hygiene compliance reports could also replicate these methods.

Some of the strengths of a composite or summary score are that(1) a composite of multiple measures is more likely able to identify a 'signal' of the construct being measured than individual measures; (2) a single composite or summary score may be easier to understand for general consumers. However, there are also some weaknesses as well: (1) composites can mask performance on individual measures (e.g., hospital may look good on overall composite, but perform poorly on an individual measure in the composite); (2) underlying assumptions about relative weights of the measures included in the composite which may or may not match the preferential weights for all individual consumers.

AHRQ notes the methodological considerations regarding weighting schemes, which are applied in summary scoring. Summary scores must either give the same "weight" to all the measures they include or assign some measures more weight than others. Weightings inherently involve judgments of what is more important and consequential. Each subset of measures included in the summary score of the current study reflect associations with the health care quality domains of PS and PCC. The preceding sections outline the individual

measures used to derive the summary score, which applied equal weights across all three data sources.

There is increased interest in creating composite and summary scores to encourage more consumers to use publicly available quality information. Over time, more summary scores are likely to be developed to reduce information overload and present data in formats easily understood across stakeholders.

3.7 Discussion

In 2019, Newsweek introduced a methodology for identifying "the world's best hospitals." Newsweek partnered with the global data research company Statista Inc., to rank the leading hospitals in 21 countries by calculating a summary score ("World's Best Hospitals 2020 - Top 100 Global," 2020). The 21 countries and one city-state included in the sample were Australia, United States, Canada, Germany, France, United Kingdom, Italy, Spain, Switzerland, Netherlands, Sweden, Denmark, Norway, Finland, Israel, South Korea, Japan, Singapore, India, Thailand, and Brazil. The rankings are based on recommendations from medical professionals (reflecting the workforce perspective), results from patient surveys, and key medical performance indicators. The similar application of data from the workforce, patients, and performance indicators reinforces the appeal and rigor applied in the study carried out in this dissertation. Newsweek acknowledges that its scores are only comparable between hospitals in the same country, as there are not global standardized, publicly reported data sets, where the current study combines data from sources that are also available in other countries such as the UK and Canada.

Limitations

This study has some limitations. First, much like the US-based HCAHPS methodology, the BHI uses a sampling strategy to gather data from patients and the lag time between the patient being discharged and receiving the survey is not ideal, as the sampling methods and time since treatment are known vulnerabilities of representativeness of
the respondents' perspectives. Second, the questions selected from each of the data sets in the summary score could be weighted differently and yield different results when combined. For this study, we chose equal weights in calculating the summary score, but one could decide to use different weights. Third, the questions that were selected could measure other concepts than the concepts of PS and PCC that were under evaluation. Fourth, the data used for the analysis was from one single year (2014). A hospital's performance may vary outside of the study period, potentially resulting in variations in performance during other years of observation. And finally, the need to protect the identity of the participants of the organizations in the other aspects of the broader study prohibited the disclosure of more granular results of the hospitals in the sample.

3.8 Conclusion

Despite decades of efforts to improve healthcare quality, serious and widespread quality problems persist throughout healthcare delivery systems and occur in small and large communities alike. Yet, some organizations find it possible to achieve improvements in quality. This study presented a method for identifying excellence in hospital quality and how excellence can be identified by integrating staff, patient, and consensus-based measures. Quantitative approaches should be linked to other assessments for advancing the work of
improving overall healthcare quality. Further examining how these positive outliers achieve

exemplary results is the next step in discovering the characteristics related to improved care and are described in the subsequent chapters, which offer insight into high performing practices.

Table 2. Characteristics of High Performing Hospitals and Non-High Performing Hospitals

	Non-high Performing	**High Performing**	**Overall**
	(N=58)	**(N=8)**	**(N=66)**
Hospital Peer Group			
A-Large (~548 beds)	13 (22.4%)	3 (37.5%)	16 (24.2%)
B-Medium (~280 beds)	18 (31.0%)	2 (25.0%)	20 (30.3%)
C-Small (~82 beds)	27 (46.6%)	3 (37.5%)	30 (45.5%)
Urbanicity			
Metropolitan	29 (50.0%)	2 (25.0%)	31 (47.0%)
Rural	29 (50.0%)	6 (75.0%)	35 (53.0%)
High-performance Summary score			
Mean (SD)	1849 (± 84.01)	1959 (± 90.16)	1862 (± 91.49)
Median [min, max]	1862 [1686-2033]	1951 [1856-2071]	1868 [1686-2071]

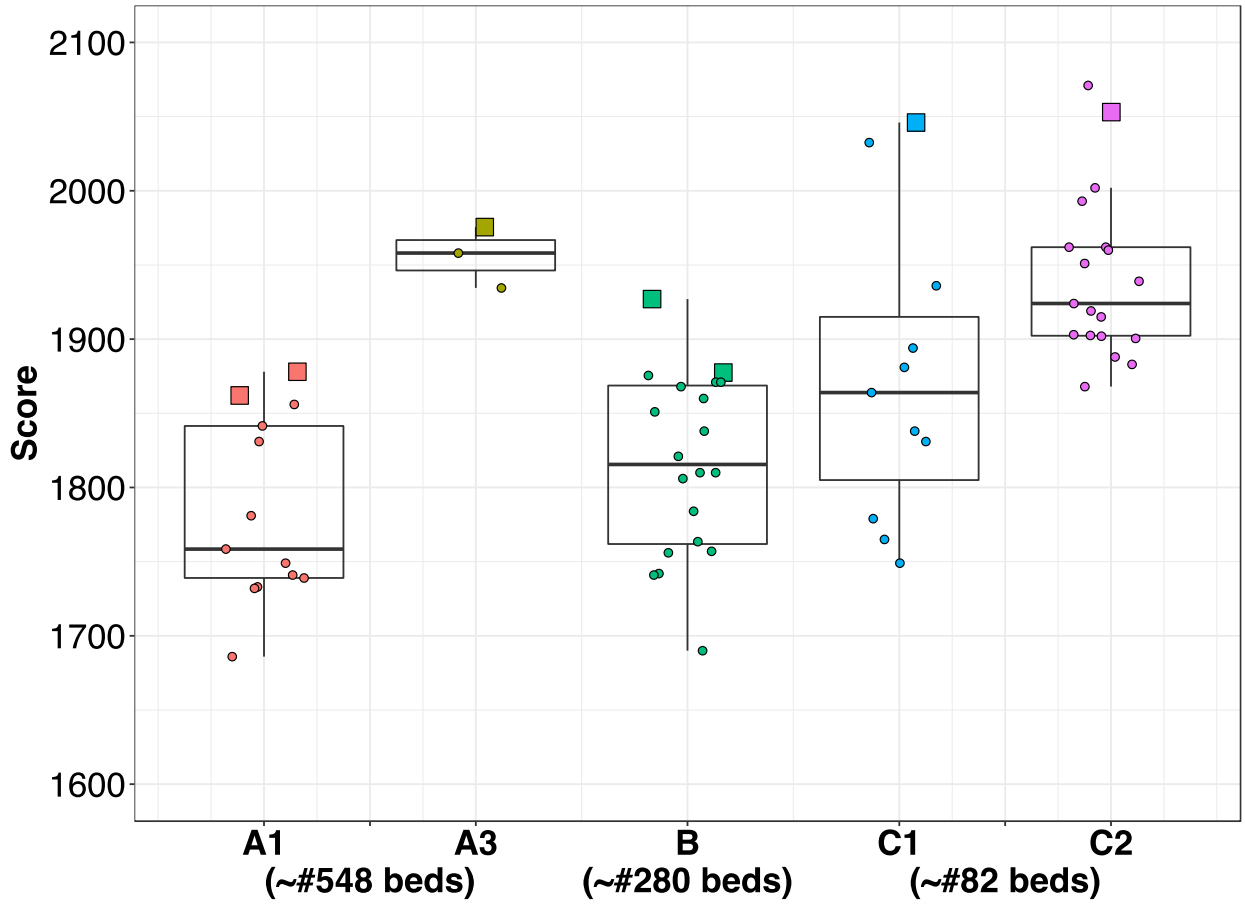

Figure 4. Box Plots of Summary Score by Hospital Peer Group

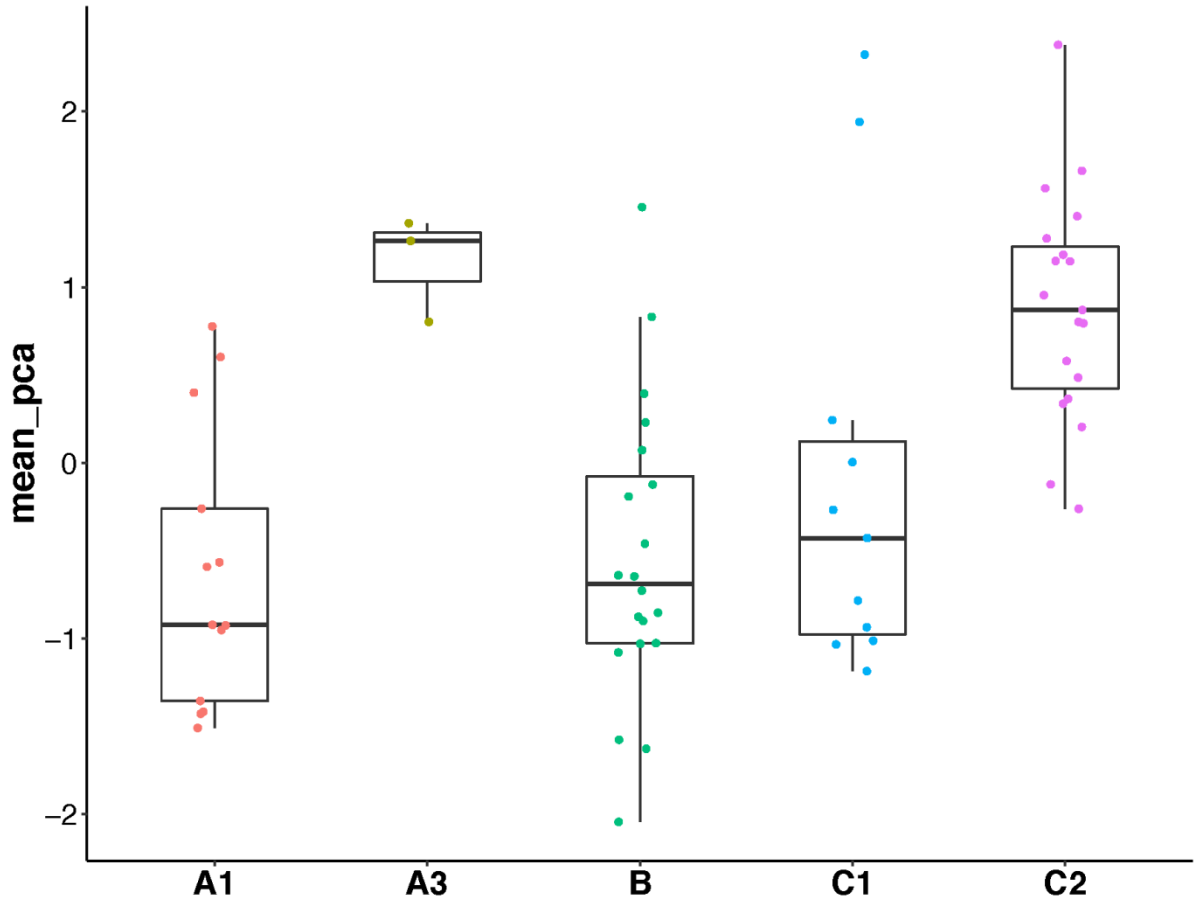

Figure 5. Mean Principal Component Analysis Score by Hospital Peer Groups

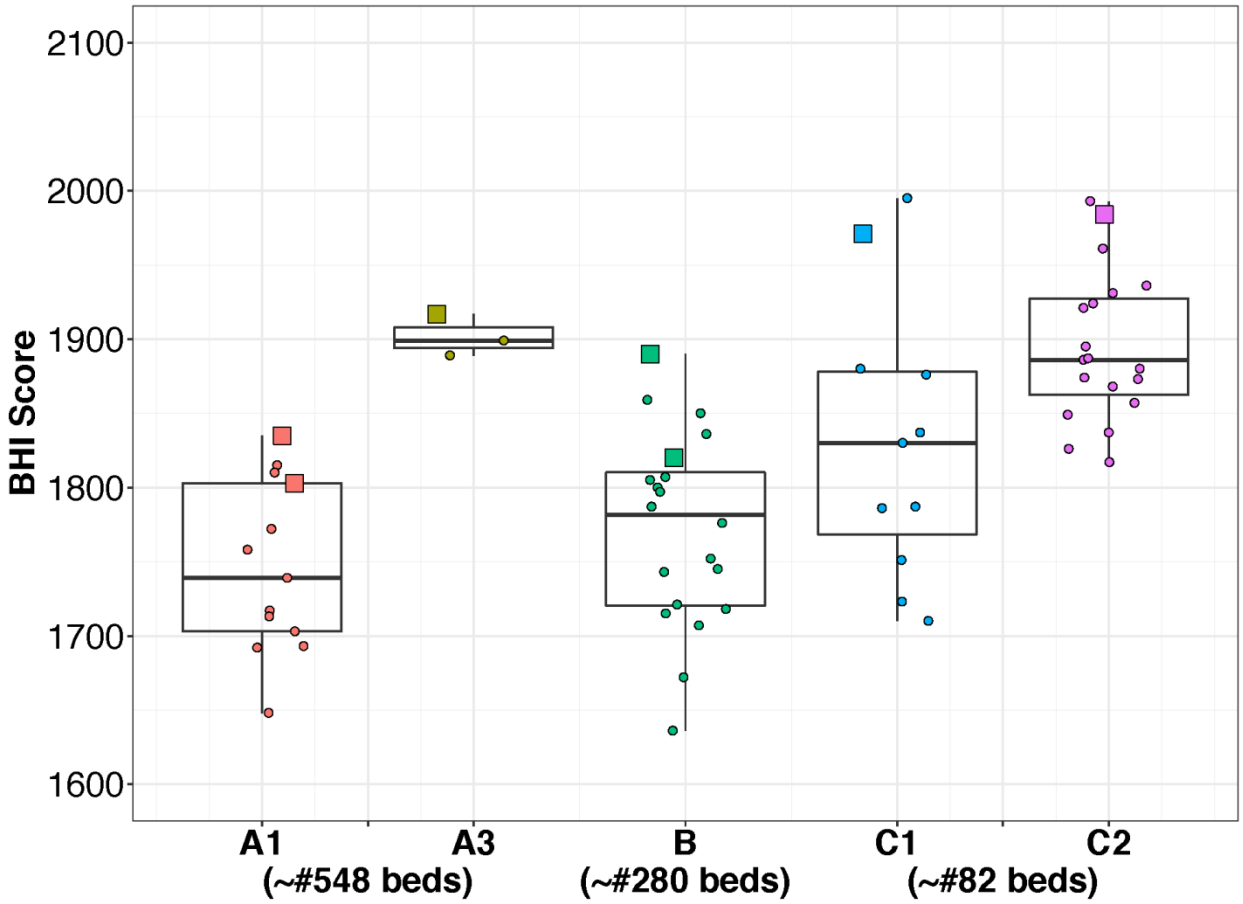

Figure 6. BHI Adult Admitted Patient Survey scores by Peer Groups A-C

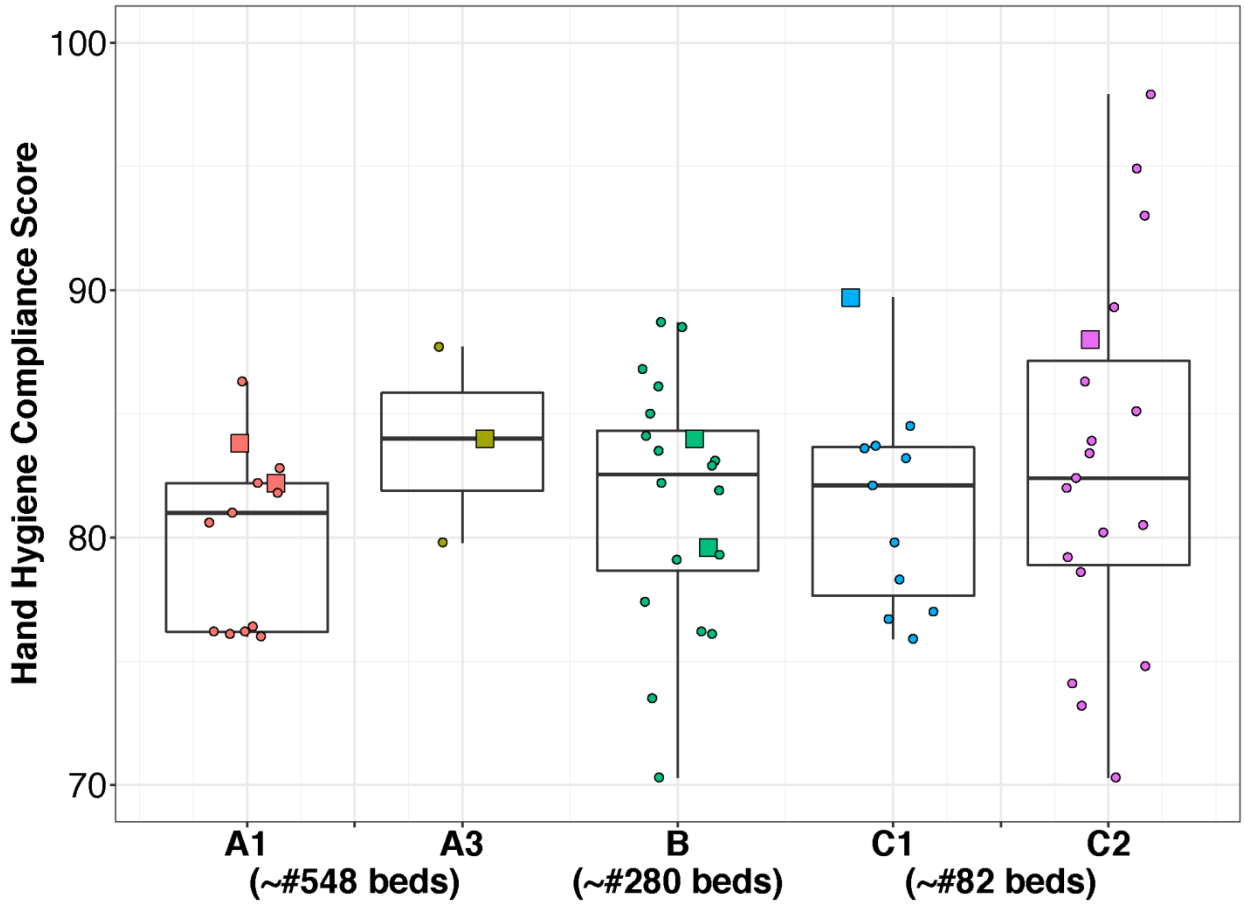

Figure 7. Hand Hygiene Compliance scores by Hospital Peer Groups

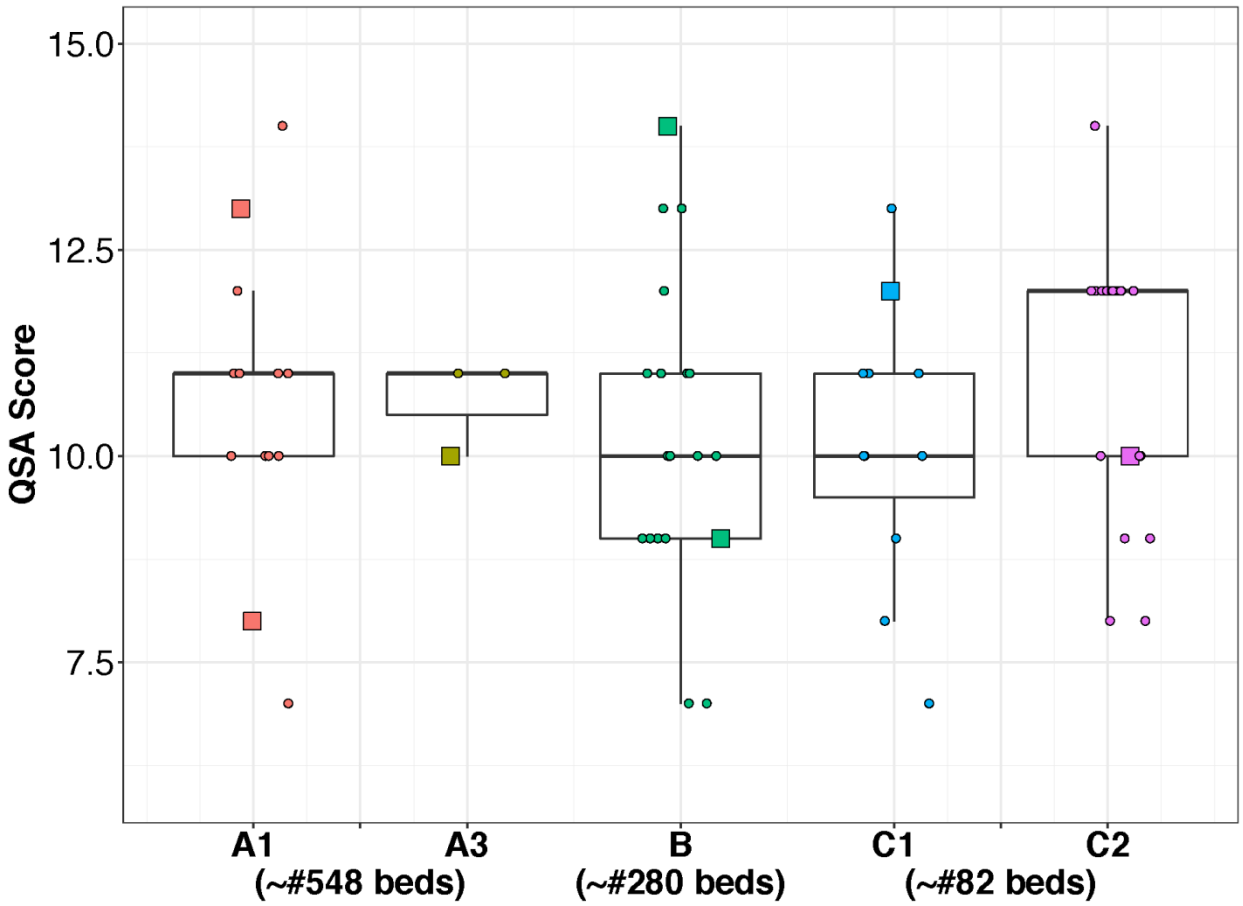

Figure 8. QSA Scores of Workforce Perceptions of PS & PCC by Hospital Peer Groups

CHAPTER 4: MANUSCRIPT 3 QUALITATIVE ANALYSIS OF HIGH PERFORMING HOSPITALS

Abstract

Objective To identify the interplay of technical and adaptive factors that contribute to a select group of hospitals achieving high performance at the nexus of (a) patient safety and (b) patient-centered care delivery.

Materials and Methods

Drawing on a 'positive deviance' model, an analysis of quantitative measures of healthcare quality was conducted to create a master sample of high-performing hospitals in New South Wales (NSW), Australia. The quantitative analysis was based on reported outcomes in three 2014 data sources:

1. patient experience data from the Bureau of Health Information (BHI);
2. workforce perceptions of the state of a hospital's safety culture, and of its approach to integrating patients and family caregivers (any relative, partner, friend or neighbor who has a significant personal relationship with, and provides a broad range of assistance for, an older person or an adult with a chronic or disabling condition)as members of the health care team from the Quality Safety Assessments (QSA);
3. hand hygiene compliance rates and quality indicators reported to the National Health Performance Authority (NHPA)

The primary investigator parsed a master sample of potential hospitals for representativeness across three key criteria: size, case acuity, and geographic location. Seven institutions with a range of bed counts (~82 to ~548);), levels of acuity mixes ranging from tertiary academic to regional community; and geographic locations ranging from urban to rural were selected from across NSW.

Site visits to this purposively derived sample of seven hospitals were then conducted by the primary investigator. Alongside informal observations, these site visits included key informant interviews. The interviews targeted an improved understanding of organizational factors and

relationships in the seven high performing hospitals. Interviews with key informants helped to unpack the policy, professional, and institutional characteristics they saw as related to their hospital's success in patient safety and patient centrism.

A total of 47 semi-structured interviews were conducted over the course of the seven site visits (5-9 interviews at each location) using a standard discussion guide. This guide included deductive and inductive approaches. Deductively, the hypothesis guiding the broader project was that these seven high performing hospitals would exhibit identifiable organizational policy, professional, and institutional characteristics linked to their performance. Using a positive deviance model in that high performance was assumed to be deviant behavior that could be explained by local combinations of technical and adaptive elements. With this deductive background assumption in place, the site visits and interviews were conducted and the resulting data analyzed using a grounded theory approach that deployed the constant comparative method. That method generated a range of recurrent themes that allowed overarching narratives about the technical and adaptive elements that combine to support patient safety and patient centrism.

Results

Our analysis suggests three key moments where HPH staff combined technical and adaptive elements to arrive at the activities and culture of high quality care. Specifically, these were: filtering policy through an inclusive patient-centric culture; blurring the borders between the hospital and its surrounding community; and grounding technical QI metrics in a collaborative culture. These were the techniques that allowed staff to excel, deviating positively where other hospitals with similar constraints achieved lower results.

Discussion

Health care executives, health care managers, and policymakers may want to consider how high performing hospitals have leveraged specific policies, attitudes towards professionalism, and

institutional attributes plus leadership style or structures to attain positively deviant patient safety and centrism results. Limitations on these findings include a need to be aware of national and low performer characteristics to ensure these results are portable to institutions beyond high performers in NSW.

Introduction

Chapters one and two summarized the literature and measures used to assess hospital quality. Two conceptual models – the Positive Deviance Model (PDM) (Bradley et al., 2009). and the High Performing Hospitals in Hospital Quality model (HPHM) (Taylor et al., 2015) are deployed throughout this study to first identify and then track down the roots of exceptional care. The PDM assumes that problems can be overcome using solutions that already exist within the 'positively deviant' portions of communities. (Wishik & Vynckt, 1976) The HPHM describes practices that are present in high-performing hospitals (HPHs) enabling them to deliver high-quality care. Together these two models drove the creation of a scoring methodology, described in chapter three and used in the identification of High Performing Hospitals (HPH)s that were assessed as positively deviating from their peers ((peers (Baxter, Kellar, Taylor, & Lawton, 2014), (Baxter, Taylor, Kellar, & Lawton, 2015)Baxter, Kellar, Taylor, & Lawton, 2014). HPHs demonstrate exemplary healthcare quality despite confronting similar constraints as other hospitals.

The PDM has been applied over several decades in various public health settings, from malnutrition in children to newborn care and disparities in educational outcomes. (Wishik 1976, Sternin 2000) As an approach, it provides a rigorous yet pragmatic process to uncover the behaviors and practices of communities ranging from full societies to individual organizations that result in positive outcomes. Part of the utility of the PDM is its coupling of qualitative and quantitative methods to expose "the secret sauce" of what might otherwise go undetected with quantitative measures alone. The field of healthcare quality improvement stands to benefit immensely from further expanding the deployment of PDM techniques. The present study seeks to augment the apparently endless search for comprehensive quantitative measurements of quality. It assumes that behind the increasingly precise and nuanced numbers lie attitudes, approaches, and behaviors that are essentially unquantifiable and drive implementation in positively deviant HPHs.

The combination of the models provides a lens to magnify the nexus – the central, or most important point of interaction – in hospital quality where Patient-Centered Care (PCC) meets Patient Safety (PS) models. Indeed, the IOM's six aims of quality pointed to the interconnectedness of PS and PCC (see Figure 9) with the other aims. Avedis Donabedian famously said, "the secret of quality is love." (Best & Neuhauser, 2004). He then made several suggestions as to where love might reside: between a clinician and a patient, between a clinician and her profession, between a clinician and her God (Best & Neuhauser, 2004). More recently studies have continued to try to locate where the love that is so central to QI success might reside. Ronald Heifetz, has described a way of overcoming organizational challenges, and so finding Donebedian's love, that focuses on both technical and adaptive, or cultural, aspects of organizational practices (Heifetz, 2003). The literature indicates that neither technical nor adaptive changes result in sustained net gains without the concerted attention to the other (Heifetz, 2003) , (Heifetz, 1994) The broader thrust of this study picks up on this search for the location of love by focusing on high-performers providing safe, patient-centered care despite the barriers that all providers and organizations must confront. It assumes that the mystery ingredient in this positive deviance is to be found at the intersection of quantitative and qualitative inquiry and the nexus of technical and adaptive change.

Figure 10 shows the conceptual framework applied to the analysis of the positively deviating hospitals. Outputs of the preceding aims distilled standardized measures of hospital quality and means to identify high performance from the perspectives of patients, workforce members, and subject matter experts—all with the lens of assessing safe, patient-centered care. Taylor et al. outlined seven themes characterizing high performers (Taylor, 2015), and Bradley et al. described the methods to examine high performing practices in positive deviants (Bradley, 2009). The primary investigator applied the learnings from both models to conduct qualitative analysis during the seven site visits and observations of the

seven HPHs to look for manifestations of the seven themes of high performance and detect positively deviating practices contributing to high performance.

After describing the methodology in more detail, this chapter presents an analysis of the mix of technical and adaptive elements – on the one hand the policies and organizational features that structure life, and on the other the cultural values and narratives that make sense of safety and patient centrism in the seven HPHs. Specifically, participants described their adaptive engagement with, and translation of, federal policies mandating consumer engagement, and state policies prescribing particular organizational values.

Further, they described a particular shared vision to serve the community (social cohesion); professional(ism) that relied on a 'servant leader' style of interaction. Finally, they described particular institutional features that included accountability systems designed to support quality and safety, a focus on results, and the creation of a culture of teamwork. The analysis drawn from the qualitative site visits provides insights for other hospitals, with further examination of low performers and private hospitals likely required to add contrast and further clarify the findings.

To arrive at the analysis and insights, observational field notes, documentary evidence, and the transcripts of 47 interviews with 53 participants were analyzed by the primary investigator in consultation with medical sociologists, health services researchers and health practitioners, and state-level policymakers. Initial interpretations of the data were checked with participants in the study. In this sense, the analysis presented here complements and nuances the results of the statistical analyses conducted to identify the HPHs (study aim 2). Specifically, the following pages seek to better identify and understand any organizational factors that leaders and staff from HPHs of different bed-size, levels of acuity, and geographic location see as contributing to their positively deviant status in PS and patient centrism. Organizational factors here can range across technical and adaptive elements. They include formal technical indicators, processes or structures as well as informal relationships, approaches,

attributes, or understandings that key informants see as shaping performance. Beyond the immediate analysis of the qualitative data, this chapter explores the extent to which the emergence and development of practices associated with positive deviance can be transferred to other organizations hoping to achieve similar results. To do this, it seeks to identify ways in which HPHs – in the eyes of patients, staff, and subject matter experts – converge on technical and adaptive organizational factors that contribute to creating a "good hospital."

Methods

The primary investigator – trained in qualitative methodology, and has extensive experience in health policy, organizational behavior, QI, and patient safety, but was unaffiliated with the Australian health system generally or any of the HPHs specifically – parsed a master sample of potential hospitals. Three key criteria were used to create a representative sample pool, including hospital: size, case acuity, and geographic location. From a total pool of 66 hospitals meeting these criteria, eight HPHs with a range of bed counts (~82 to ~548); acuity mixes ranging from tertiary academic to regional community; and locations ranging from urban to rural across NSW were selected. One of the eight hospitals identified was unable to participate because of transitions in the organization's leadership.

The state of New South Wales (NSW) groups public hospitals into peer groups. Peer groups are categorized based on the number of patients discharged each year (size), the primary role of the hospital (such as principal referral) and geographical location (i.e. rural or metropolitan area). This study identified HPHs from Hospital Peer Groups A(~548 beds), B(~280 beds), C(~82 beds) to account for differences in size, type, urbanicity, and geographic locations.

In the Australian context, it is notable that all public and private hospitals, day procedure services and public dental practices are required to be accredited to the NSQHS Standards. Many other healthcare facilities will also choose to be accredited in order to improve the safety and quality of health care provision https://www.safetyandquality.gov.au/standards/national-safety-and-quality-health-

service-nsqhs-standards/assessment-nsqhs-standards. Therefore, this analysis presents national and state policy synonymously with accreditation standards.

The primary investigator conducted seven site visits that included informal observations, documentary evidence gathering, and formal and semi-structured interviews. Forty-one hours of observations were conducted with the primary investigator recording field notes on hospital management meetings (n=4) and multi-disciplinary rounding processes at the seven sites (n=7). HPH staff allowed the primary investigator to "shadow" them while they went about their regular activities and answered detailed questions. A total of five shadowing sessions were conducted. Acting opportunistically and with respect for clinical operations priorities, the primary investigator held informal conversations with front-line staff encountered during general observations and shadowing sessions. These conversations were recorded as field notes. HPH-specific documents, including non-confidential in-house policies and hospital mission statements, were collected opportunistically and formed a background for the informal and formal interviews as well as the analysis.

Additionally, 47 formal semi-structured interviews (Glaser & Strauss, 2017), (McCracken, 1988) and one ad-hoc focus group were conducted with a total of 53 unique participants using a standardized discussion guide. The interviews and focus group were digitally audio-recorded and professionally transcribed for analysis. Participation in the observations, shadowing, and interview elements of the study was voluntary, and participants could decline or withdraw at any time. The ethics board at the University of Technology Sydney approved the study [UTS HREC REF NO.2009-143P]. The site visits were conducted over the course of one to two days from March 2016 to June 2016, with discussions focusing on the previous years of activity. For all seven HPHs, each Local Health District (LHD) leader was the initial point of contact to coordinate site visits, followed by the hospital general manager[1]. Beyond these foundational sessions, interviews were conducted with at least one physician, one nurse, and an

[1] (General Managers are also known as the Chief Executive Officers (CEO) in privatized systems

administrative staff member at each HPH. The remaining interviews varied by site as the hospital contact person coordinating the visit selected staff with the greatest knowledge regarding hospital QI efforts. A minimum of five interviews were conducted at each site.

The average length of the interviews was 60 mins. The average number of interviews conducted at each of the sites was seven with the largest and smallest being five and nine. Table 3 summarizes the hospital demographics of the seven high-performing sites. Table 4 summarizes participants and their position/role in their respective hospitals in more detail. General Managers(GM)s/CEOs of the seven HPHs varied in training experiences; five were clinicians-- four nurses and one physician, two came from administrative (finance, business administration) backgrounds before occupying leadership roles within the organization. Interview participants with senior executive or clinical responsibilities are referred to as members of 'the executive team' in the pages that follow.

The interview guide was designed to elicit how staff in the HPHs approached engaging, understanding and communicating a range of organizational factors. Focal factors included: healthcare quality and performance; partnering with patients; preventing harm; workforce attitudes and self-concepts; and external policies. See Figure 11 entitled 'Triangulating Three Data Sources to Identify High-Performance in Healthcare Quality'. The guide was developed and adapted in collaboration with health practitioners and experts in PCC, as well as NSW state representatives and medical sociologists and healthcare QI experts on the research team. It was based on an existing assessment instrument (Cunningham et al., 2014) and focused on understanding staff perceptions of their hospital's quality and patient-centered care. The resulting novel instrument was pilot-tested at a site identified in the initial representative pool, but not scoring as an HPH and thus not a positive deviant by the study's definition.

As noted above, our initial sampling strategy was deductively driven by the PDM model. In this way, the assumption that the seven hospitals in the quantitatively identified sample were positively deviant from the norm informed qualitative interviews. The interview guide was then deployed in an

inductive fashion to conduct sessions that were digitally recorded and transcribed to facilitate analysis. This inductive approach allows for the post-hoc drawing of inferences, identification of themes, and generation of hypotheses regarding the effects of inner and outer organizational factors (Damschroder, 2009) and so the interplay of technical policy issues with adaptive cultural issues based on participant's reports. The research team employed a grounded theory approach to this inductive work, using the constant comparative method (see Appendix A: Interview Guide)(Glaser & Strauss, 2017) to identify recurrent and unifying themes in the transcripts. Initial open codes were expanded, collapsed in the course of the emergent, inductive analysis and eventually organized into categories in a coding scheme. NVIVO11 software facilitated coding. After discussing initial codes with the co-investigators, the primary investigator used the codes to build an analysis that was checked with participants and experts, including NSW state health administrators. The primary investigator conducted the coding, and a medical sociologist on the team verified that work. Extracts from the interviews and field notes are presented in the findings to support the analysis. In some cases identifying details have been altered to protect participant's anonymity. These alterations are marked by square parentheses[].

Results

Our analysis suggests three key moments where HPH staff combined technical and adaptive elements to arrive at the activities and culture of high-quality care. Specifically, these were: filtering policy through an inclusive patient-centric culture; blurring the borders between the hospital and its surrounding community; and grounding technical QI metrics in a collaborative culture. These were the techniques that allowed staff to excel, deviating positively where other hospitals with similar constraints achieved lower results.

Policy Filters

While standards and accreditation requirements were the same across NSW, the local culture of HPHs acted as a filter in the implementation of that policy, resulting in deviantly high-quality care. A key

element of these localized filters, or adaptive responses to technical policy requirements, can be seen in the HPH's attitudes to operationalizing on-paper policy. Key examples here included consumer engagement and health system value statements. Where they might have seen this engagement as an irritant or exercise in formal compliance, the executive teams and staff in the HPHs all valued patient voices as influences on hospital operations, seeking ways to ensure that consumers were able to contribute, regardless of their backgrounds or training. One General Manager (GM) from a community-based (Peer Group B) hospital described how including consumers was not just a pro forma activity, required by National Standard 2, noting:

For me, the key is to ensure that they have a voice…at that interface where care's delivered. [As much as] we have people who sit on committees, who are consumers… the reality is that they're at a disadvantage because when we're talking in those forums they're one or potentially two people sitting around [a] table that has nine or ten people who [have] health backgrounds–

Similarly, the Director of Nursing at a large, urban (Peer Group A) HPH described specific efforts to overcome the 'outsider' disadvantage described by the CEO.

"*We obviously have a lot of volunteers here [who] are often on key committees. …One of the things we do with the new people who go into those roles is they get allocated [to] someone senior so that when [they're in a meeting they're being talked] through what's happening, what's happened in the past. Just [to] give them a little bit of understanding as to how the meeting operates …and also try [to] be a role model for them to understand how to talk at those meetings as well."*

These efforts to be genuinely inclusive to consumer-volunteers, rather than merely following the letter of the consumer engagement policy, did not just transform policy-on-paper into operational

action. In doing so they also reflected local cultural values. Illustrating this, one member of the executive team at a large, urban (Peer Group A) described taking a NSW policy called 'CORE' off paper and making it part of the HPH's culture:

CORE stands for Collaboration, Openness, Respect and Empowerment. Even though it's a state-wide mantra, most hospitals tend to just [repeat] it as part of their [mission statement]. They don't do a lot about it. But we actually [use] funding from the district to make the CORE value our focus for the hospital in terms of building culture and building staff awareness … For the last year [we've] tried to make CORE values into an every day culture for the staff [making] a video featuring staff members, talking about CORE and [showing] it in orientation and stuff like that."

With the production and use of a video signaling organizational priorities to new hires, this HPH, like its peers was able not just to operationalize policy, but to tie value-driven policy to local culture.

Community Embeddedness: Blurring Hospital Borders

A key factor enabling these moves to operationalize what might have been merely a box-checking exercise, and so enact the values of policy, was a sense that the hospital was bigger than its walls. Many participants described a sense of connection and desire to serve their community that produced an *esprit de corps* and sense of common purpose that transcended the actual size of the HPH they were embedded in. A surgeon at a large, urban (Peer Group A) hospital described how:

"we are big enough to have a full range of services… yet we are small enough for staff to know each other. I think that's what puts us at a huge advantage."

Similarly, a Nurse Unit Manager (NUM) at a smaller Peer Group B Hospital described their workplace as:

"a big organisation acting like a little country town. Because I've [worked in a] very small community, and [I was] always popping up to the hospital. Everyone knows everyone and you communicate a lot."

The sense of being part of a small, communicative town was assumed to extend beyond the hospital into the surrounding community it served. At another large, urban (Peer Group A) hospital, the Director of Nursing described a former colleague who had transitioned to new operational role as an embodied link between the organization's values and the community, stating:

"*So she thinks about 'What does the hospital need operationally?' and 'How do we make sure the patients benefit from this as well?' … we're really lucky [that our] clinical and other staff [think like that] as well because they're very committed to the hospital and the local area. …They're constantly thinking about the hospital being presented in a great light and wanting to do the best for their patients."*

By conflating value-for-the-community with value-for-the-hospital, this kind of thinking was seen as blurring the border between the HPH and its community. It was further emphasized as participants described how patient feedback was used in the hospitals. Consumer engagement made real as described above, also carried real operational consequences for the hospitals. As an example, visiting hour policies might shift. One director of nursing at a large, urban (Peer Group A) hospital described concerns about safety and hospital security which were resolved by engaging patients:

"I had heard rumblings that people weren't happy [with visiting hours so] we took it to the Patient and Family Centred Care Committee. [We then took the results] to the General Manager [who] said 'That's fine' and then he did a memo and ...we changed the lock-down [time] of the hospital. So visiting hours finish at a certain time and they're quite long."

This decision-making process not only shaped organizational operations, but further blurred the borders between the hospital and its community by approaching patients as legitimate filters for policy.

The Director of Nursing (DON) at a small, community-based (Peer Group C) hospital described how, for staff, patient centrism had its origins in lifelong connections that similarly blurred the hospital and community.

> *"We're a small country [hospital where] you'll find staff...who were born in this facility and staff ..who delivered their own children in this facility. Our nurse educator...is now seeing students come back who he delivered when he was a midwife, before he became an educator....So, when you go onto that general floor and you see the patients, or when you go into theatre and you see the patients or when you go into ED and you see the patients, these are people who are the staff's neighbours, they are the staff's cousins, they are the staff's – hopefully not husbands and wives or mothers and fathers and children, but potentially. ...These are the people who teach their children. These are the people whose shops they go to. So, there's a genuine sense of ownership of the care that's given because there's a genuine care for the person who is sitting in the bed, is my belief, and certainly my feeling around this facility. Our staff know their patients and know them well and genuinely care for them because these are the people that make their community up."*

Out of their commitment to providing good care to their neighbors and family members, staff at not just this small hospital, but all the HPHs regardless of size, found themselves eliding the apparently separate two categories of 'hospital' and 'community.'

As an anesthesiologist, also in Hospital Peer Group C described it:

> *"There is a feeling amongst the senior [physicians] that they take ownership of patients...Now, that's more likely to happen in a smaller community. What tends to happen to you is you become part of the community. I will run into people in the street and I've been here a long time. I do about*

2,000 anaesthetics a year, I've been here for 20 years or 25 years, so I've done about 50,000 cases, right?. I've done anaesthetics to lots of people and I've met their families."

In the words of a Wound Care Specialist at a a rural, community-based (Peer Group B) hospital:

*"You see [your patient] in the [*grocery store] *in the produce area. And I couldn't remember him from a bar of soap but he lifted up his pant leg to tell me "Hey look how well I've taken care!"...I've had family as patients here before. I enjoy working here; it's like a little family."*

The General Manager at a large, urban (Peer Group A) distilled the sentiment in their observation: *"We are the community"* .

In this way, HPHs managed, regardless of their actual size or geographical positioning, to imagine themselves as small family operations in which the lines between the hospital and the community were so blurred as to be meaningless. At this point of elision, the previously noted transformation of consumer engagement from a pro forma exercise into a genuinely inclusive, genuinely patient-centric activity becomes both an expression of organizational culture and an exercise in improvement that targets the good of family and neighbors.

QI Systems grounded in Values:

Subtending this adaptive culture of improvement were technical features of the HPHs' QI systems. Specifically, in-hospital mechanisms to track and encourage QI were important factors in participants' minds for achieving higher quality care. Regardless of discipline (i.e. nurse, doctor, wound specialist) or role within the organizational hierarchy, participants from all the HPHs described the importance of knowing that their behaviors led to high-quality care and outcomes. They talked about specific efforts in their ward (unit) and, at an organizational level, to elicit feedback from their patients to learn how they were performing.

Data were discussed as a tool to identify, track and monitor performance more so than an instrument of punishment or penalty. Executives and organizational leaders had an appreciation for data reporting requirements and cultivated a desire to use data towards improvement.

The General Manager (GM) at a rural, community-based (Peer Group A) hospital described his view of data collection and reporting like this:

"I have the key points and I will defer to the expert in that area to just give us an update. So the infection prevention officer, just give us an update on how we're going with hand hygiene uptake compliance, et cetera. I might talk about mandatory training and some of our not so good performance there. Okay, what are we going to do? What are the strategies we're going to put in place to improve on that? What are the barriers? What are the issues? I guess I talk a lot, because I have got a lot of information to give. We also have an open forum. People can put their hand up and add value. My executive - I sit them at different tables, and make sure that they are interacting with the other managers."

At a large, urban (Peer Group A) hospital, a NUM provided insight about ward(unit)-level perceptions about patient experience data:

we did patient satisfaction surveys and so we did a lot of collection for them (patients) and on that was topics about what you think we can improve, how can we make your journey a lot better, what kind of treatment do you expect, you know, was communication okay, who would you like to talk to, and then we fed off all of that. So I collect data as both patient satisfaction and staff satisfaction when redeveloping the business rules.

Participants at each of the HPHs talked about data as a necessary path to learning. There was an acknowledgement that many of the data were required for reporting but, the executive team and staff across the organization echoed the appreciation and desire to use data (inclusive of patient experience and hand hygiene data) as a means to spot trouble and fix problems.

While the metrics and consumer engagement of QI were key technical mechanisms for providing the feedback that promulgated improvement, in the background adaptive cultural factors were at least equally important. Beyond any particular target or challenge put forward in a new policy, a NUM at a community-based (Peer Group B) hospital described their HPHs' leadership as providing empathetic support.

"*If something comes down from on high that we all struggle with [the general manager] actually really has empathy and supports us in that. [They don't just say] "Well, bad luck, you've got to do it." …you feel supported as a manager*."

In addition to empathy in implementation, another participant – an executive (Director of Allied Care) at a community-based (Peer Group B) hospital – described a generalized:

willingness to say yes to new ideas, to innovation, even though that means more work. Hard work…communicating and articulating why you're [making changes and showing staff how those changes will be] of benefit. [Improvement] is the reason we're here and I don't think I've got anyone on my team that doesn't want to work hard for that goal.

The General Manager (GM) from another HPH large, urban (Peer Group A) hospital described a similar atmosphere, noting that "*Problem-solving is infectious here*."

Across both of these accounts, adaptive cultural values inform attitudes not just to the work of innovating and solving problems, but being a good hospital. A surgeon at another large, urban (Peer Group A) hospital described a

"*culture of working cooperatively. It comes as the expectation of what you want to be when you start working at this place. …staff tend to talk to each other and [combining this with the culture of cooperation] you then have the common goals.*"

The HPHssynergistic effect of technical and cultural elements of the individual practitioners and the collective group within the organization that echoed a commitment to provide high-quality for the

organization's sake as much as for the communities were impressive. These organizations converted measures and government requirements for inclusivity into demonstrations of a commitment to serve and act as stewards to the communities to which they belonged, inside and outside of the hospital's entrance. The same Director of Nursing (DON) from one of the smallest, community-based (Peer Group C) hospitals that mentioned the accountability of the hospital staff to the community summed up the links of all three elements like this:

> *"The truly high performing team is going to be the team that is the happiest. The team that gets along the best with each other, that is able to step in there and say "I know what you're up to, and I can take over ...I can also take that on." I think the security and patient safety comes [from people taking] responsibility for a multitude of things.... It's very rare in a facility this size and in this facility to hear people say that's not my job, because, well, we don't have another person to do that job so therefore it becomes all of our jobs, whether it's a matter of pushing a patient up from ED(emergency department). If I'm standing in ED and a patient needs to go to the ward, I'll take them. I promise you I've passed the competency ...so I can push the bed safely....I've had the quality tick of doing the competency, but it's not my job to do, but the [porter] is up on the ward showering a patient, [and] there's no reason to take them away from that ...So, you'll find that staff are quite willing to step into those other roles because they see it being a better outcome for the patient."*

Discussion

Prior research has demonstrated a link between organizational culture or climate and organizational outcomes, including financial (Kotter & Heskett, 1992), quality (Shortell et al., 1995) and safety (Estabrooks et al., 2002), (Brewer, 2006), (Stone & Gershon, 2006) performance (Singer, Lin, Falwell, Gaba, & Baker, 2009). Expanding on this, the present study suggests that health policy filtered through HPH organizational culture tends to elide key categories like personal and professional, as well

as hospital and community, with this elision yielding positively deviating high-quality care in a publicly funded health system.

Policy – in the form of legislation, regulation, or local protocols and procedures – can be an effective tool for changing practice. It can catalyze the standardization of processes (i.e., data collection, reporting, and monitoring) or create incentives toward desired QI outcomes. However, policies, can be filtered through organizational cultures that render them ineffective (Hinchcliff et al., 2012), (Braithwaite et al., 2011), (Mumford et al., 2014) (Greenfield et al., 2012). Conversely, when effective policy meets optimal local culture, patients, providers, and the public all stand to benefit. The hospitals in this study were capable of filtering policies into deviantly high performance in external measures of safety and patient centrism. This is to say, their internal cultures acted as optimizing filters on external, often technical plans, becoming value-driven motivators that led to safe, patient-centered care (Damschroder, 2009, Shortell, 2005).

There is conflicting evidence regarding whether and how accreditation programs lead to improvements in the quality and safety of health services (Hinchcliff et al., 2012). However, other studies have shown that accreditation may promote changes to organizational processes associated with quality of care. (Touati, 2009), (Greenfield, 2008), (Al-Awa, De Wever, Melot, & Devreux, 2011), (Commonwealth of Australia,2007),(Haute Autorité de Santé, 2010), (Nicklin, 2009) While this study did not set out to explicitly evaluate accreditation effectiveness, the assessment of hospital performance to meet pre-determined standards to receive certification (accreditation) was an important external, technical factor in the operations of several of the HPHs. This is to say, along with national and state policies explicitly calling for patients and consumer engagement, accreditation was filtered through the HPHs' cultural values. Filtering and implementing accreditation requirements through lived values of safety and patient centrism, the HPHs created new processes and structures, such as QI-focused accountability systems that were not merely pro forma window dressing. Rather than tick-box

exercises, these new, culturally filtered and concordant processes and structures were seen as holding all staff (Powell & DiMaggio, 2012) accountable. All the HPHs demonstrated some location-specific execution of the national policies and accreditation standards. That is, the integration of consumers (patients) and carers led to specific changes within the organization to meet those changes. Similarly, external policy direction to create a culture of teamwork led HPHs to create structures that supported the functioning of interprofessional teams in locally appropriate ways. Where these processes and structures might have been what sociologists of institutions have called mimetic isomorphism (Powell & DiMaggio, 2012, the present study suggests a deeper, value-driven commitment underpinned them. Rather than being mere copycats, miming the actions of external organizations working in the same policy and regulatory environment, the HPHs drew on their cultural values to build their own, internally concordant, processes and structures. These included: creating roles dedicated to meeting the accreditation standards; establishing processes of reporting data to meet the accreditation standards; and sharing lessons within and outside of the organization. In nearly every site, the person in charge of meeting accreditation standards came to that role without formalized training in QI but learned QI methods and practices as a part of the process of meeting the national and local standards. The expectation of meeting the accreditation standards drove the hospital to include patient stories and participation as direct engagement in the organization's operations. In addition to specific roles, there were governance structures present within the HPHs focused on quality and safety programs. Committees or subgroups comprised of clinicians and non-clinicians alike met regularly to coordinate and discuss performance and activities related to meeting the accreditation standards.

While external policy required the inclusion of patients and consumers in organizational governance led the varied processes that HPHs took to engage their communities leveraged existing social ties (Granovetter, 1983) between providers and patients, and blurred borders. These blurred borders between the hospital and what might have been its catchment as articulated in an external

policy document, were further elided in the approaches to professionalism taken by many HPH staff. Across organizational roles and traditional inter-professional divisions, HPH staff all enunciated a vision of community service as integral to their core professional identities (Powell & DiMaggio, 2012) Service to, and in the words of Donabedian (Best M, Neuhauser D 2004) love for, the community was central to who they were as professionals. Whether their ties to the community were personal, familial even, and strong, or 'weak,' they were embedded in HPH staff's professional identities. As such, they provided real bridges into, and access to information from, the community outside the hospital (Granovetter, 1983), (Greenhalgh, Humphrey, & Woodard, 2011). This analysis describes the apparent positive effects of having close relationships with patients, but there could also be risks associated with caregivers having proximal relationships to patients.

This shared, professional boundary-spanning, vision included a sense of ownership of processes and outcomes and was present in all interviews, and observable at all HPHs. Ownership linked to professional identity, in this sense, appeared to contribute to the HPHs' capacity to be 'mindful' organizations. This is to say, ownership facilitated the emergence of a key trait of a High-Reliability Organization (HRO) (Sutcliffe, 2011) capable of improving its safety and patient centrism even in the face of high risk and constant threats (Weick, Sutcliffe, & Obstfeld, 1997), (Sutcliffe, 2019), (Wears & Sutcliffe, 2019) Beyond ownership, HPHs exhibited other HRO traits, including sensitivity to operations, and a hierarchy flattening deference to expertise as problems were solved, solutions formed, and new processes disseminated. Professional identity here was not rigid and focused on protecting or asserting jurisdictional authority (Abbott 1988) but rather flexible and preoccupied with failure while seeking collaboration over punishment (Singer 2009). This flexible professionalism is perhaps best understood through the concept of 'servant leadership' (Greenleaf, 2002). Greenleaf et al. describe servant leadership as a style marked by going beyond a leader's own self-interest(s) and instead focusing on opportunities to help subordinates grow and develop. A servant leadership style was valorized and

practiced across the HPHs' executive teams. Unsurprisingly, servant leadership has been shown to orientate organizations towards patient-centered processes and structures (Trastek et al., 2014), (McCann, 2104), (Neill, 2008) . As the literature predicts, this professional commitment to knowing and owning problems, as well as serving one's subordinates created HPHs that were better at identifying and mitigating safety risks (Singer et al., 2009), (Roberts 1990), (Weick and Sutcliffe 2000), (Weaver et al., 2013).

Staff were not merely aware of their unit or organization's specific QI performance metrics, but linked those metrics to community service and so, achieving a positive professional identity. The literature suggests, professional identity offers explanations as to why service workers do as they do while co-creating service (Echeverri & Åkesson, 2018)Indeed individual motivations, filtered through professional identity, have been shown to be drivers of employee engagement(Echeverri & Åkesson, 2018), (van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012). Interviewees articulated a connection to place and the surrounding community to guide their daily operations and practice. While we know that many QI failures can be linked to Professional identity/self-interest(s) also consistently affects how changes in legislation and policy are carried out and to what extent. The alignments of health practitioner's (service worker's) perceptions of self as it relates to macro-level, societal views and organizational and cultural factors (Davidoff, Dixon-Woods, Leviton, & Michie, 2015), the present study suggests that the internal professional self-perceptions of HPH staff play important roles in filtering external policies and bolstering the creation of objectively safe and patient centric processes and structures.

Another facet of professional identity lies with self-determination theory (19 Ryan, 2000) (Gagné, 2005), which proposes that people prefer to feel they have control over their actions—a sense of autonomy. Considerations of self-determination theory may also explain a practitioner's intrinsic connections to place i.e. a sense of community and motivations to provide care that is safe and sensitive

to patient needs. Additionally, self-determination theory proposes that people seek ways to achieve competence and positive connection to others. This may also influence leadership styles.

At the individual level, when participants reflected on their own considerations of patient-centered care and quality, they talked about a sense of connecting the patient's experience with their practice and a recognition of creating positive patient experiences and outcomes as a part of their motivations to improve--a sense of service. In the larger organizations, the various organizational structures were constructed to surface and connect patient (consumer) input and stories across the organization. That is, implementing programs and practices to address patient experiences and patient and consumer needs led to the creation of committees discussing and reporting on performance in those areas. Specific roles were identified or created and deemed responsible for tracking the activities related to patient experience and patient focus.

Institutional features

An organization's inability to anticipate and respond effectively to risks can, and often does, result in breaches of patient safety. Evidence suggests that much of the failure to improve is linked to organizational and cultural factors (Davidoff, Dixon-Woods, Leviton, & Michie, 2015). The High-Reliability Organization (HRO) framework addresses system safety and the organizing of high-hazard work and technologies. (Sutcliffe, 2011) The underlying theory is that a "mindful organization" can increase its system's reliability even in the face of high risk and constant threats. Regarding excellence in applying concepts of systems safety and High-Reliability organizing (Weick, Sutcliffe, & Obstfeld, 1997), HPHs showed sensitivity to operations, and a deference to expertise was talked about in the context of large and small hospitals; regardless of level within the organizational hierarchy, a person or staff talked about a culture of being able to raise concerns, share ideas and problem-solve solutions, and disseminate those ideas, concerns and solutions. In high-performing sites, the inclusion of patients and carers as a

part of the care team and governance aids healthcare providers in the anticipation and mitigation of various safety risks. Another similarity across the sites was a sense of ownership across the organization, not just top-down from the leadership. When leadership encourages questioning towards improvement, showing a "preoccupation with failure," and is "not a punitive culture" (Singer 2009), institutions are better at identifying and mitigating safety risks.

The characteristics of the servant leadership style ((15521 Greenleaf, Robert K 2002;)) were discussed across the executive team and throughout the organizations at all of the high-performing sites.described servant leadership as a style marked by going beyond a leader's own self-interest(s) and instead focusing on opportunities to help followers grow and develop. A servant leadership style was valorized and practiced throughout the organization, beginning with the executive team. Demonstrations of this leadership style supported an organizational orientation towards patient-centered processes and structures (Cunningham et al, 2015), which were further reinforced by organization-wide practices. The servant leadership style was coupled with the communication of aspirational goals and putting processes in place to track performance towards those goals, e.g., no falls.

We found some common qualities shared by top performers, some of which were outlined in the work of Taylor et al and Bradley et al to identify high performers in quality. The commonalities across the HPHs in this study include **a shared vision to serve the community (social cohesion), a servant leadership style, accountability systems for quality and safety, a focus on results, and a culture of teamwork.** We also found that hospital size informs the processes and interactions employed in the provision of exceptional safe and patient-centered care.

The results of this study benefits from the juncture of several academic disciplines that explore the concept of social cohesion as it relates to the impact of individual and group behaviors: sociology, social psychology, psychology, population health.

Small, community-based Hospitals and Manifestations of Social Cohesion

Smaller populations, e.g., rural communities and hospitals within them have fluid boundaries between the entry doors into the clinical setting and the interactions between neighbors and community members. It appears that the relationships and reputational connections in the community influence practitioner decision-making, practice, and shared decision-making with patients and carers.

In the exploration of the intersections of the delivery of optimal and patient-centered care, the words and wisdom of Donabedian, along with the findings of sociologist Mark Granovetter regarding weak (social) ties, help to explain how our relationships outside of our immediate social circles— weak ties— act as bridges to access information (and care) that we might not otherwise be able to access (Granovetter, 1983), (Greenhalgh, Humphrey, & Woodard, 2011). Institutional practices created and reinforced a shared vision among practitioners and within the organization to serve the community (social cohesion).

There are several overlapping practices among this group of seven HPHs ("Same:Same"), and there are also some differences in approach to provide high-quality care ("Same: Different"). At a macro-system level, the repeated infrastructure across Local Health Districts (LHD) within the health system in NSW for building and supporting QI expertise, goal alignment, and communication at all levels of an organization (Pronovost & Marsteller, 2014) likely contributed to the emergence of high-performance. The branching structure of the LHDs to share and connect resources and strategies as a part of a health system appears to contribute to accessing and sharing information and resources.

The smaller, community-based hospitals scored higher in the statistical analysis than the other hospitals, prompting the the comparison across hospital sizes and types to detect similarities and differences. The differences in how smaller hospitals talked about the intersections of external policies, individual (professional), and institutional notions of safety and partnership with patients was of particular interest. This study focused on identifying and understanding strategies that HPHs have put in place to provide high quality, patient-centered care. But given that the study did not include a

comparator group (non-HPHs), a limitation of our findings is whether the identified strategies and their implementation are unique only to the positive deviants. Future research could include conducting similar qualitative interviews and analyses with non-HPHs to understand if there are any key differences between the two groups.

Community hospitals often have continuity in the workforce, i.e., people generally stay at a facility and in their roles for a long time because they are often long-time residents of the community in which they work. In contrast, turnover is more frequent in larger hospitals.

Smaller organizations have simpler information sharing paths with less physical and informational distances between the providers, the patients, and the communities they serve. There are fewer barriers to communicating information and data. i.e., creating transparency. Communication pathways are somewhat different by hospital size. Larger organizations created structures and processes--committees and assigned roles specific to achieving goals in quality, i.e., PCC & PS (and to meet accreditation and regulatory standards). Those committees function as nodes of communicating performance in those areas and have meetings dedicated to doing so.

Communication channels are tighter in community hospitals and more overlapping—you come into contact more frequently without necessarily a formalized meeting. One person functions in multiple roles across an organization, where larger organizations establish more formal, structural ways of communicating. That is not to say that community hospitals exclude formalized fractal style(Pronovost & Marsteller, 2014) reporting; it merely happens more organically in corridors and shared spaces (Iedema, Long, Carroll, Stenglin, & Braithwaite, 2006) than in a giant hospital. However, one of the larger, academic hospitals achieved the same benefits by having most executive team leads in an administrative building and shared floor.

General comparisons of US vs. Australian healthcare systems

A key differentiator of the US and Australian health systems are in resource allocation and governance. Despite this distinction, broad stroke comparisons between the US and the Australian healthcare system include some similarities, such as an emphasis on organizational culture and the idea that you create a culture to conduct QI work, which might result in positive changes in patient experiences of their care. As health care systems are large, dynamic, and complex organizations, leadership is critically important. In order to achieve transparency and accountability of patient outcomes, assessment of not only patient and organizational attributes is important, but also the impact of culture and leadership styles. In an era when patient-centered care is gaining attention, practitioners want to know how to make social cohesion happen in big bureaucratic settings. This study of the nexus of PCC and PS offers some ideas on how to replicate micro-communities inside macro-organizations.

One manifestation of social cohesion within the community-based, smaller hospitals may be that people speak *out* and speak *up* and hold one another more accountable in more personal and less bureaucratic ways. Intentional inclusion of patients (and consumers and carers) creates a sense of trust that their providers to consider their preferences and keep them safe. Creating a micro-community within the hospitals acts as a feedback loop long before a patient experience surveys or patient safety incidents might be reported.

Some of the HPHs were under the direction of the same leadership—rolled under the same LHD leader and shared patient population. Future explorations might more directly examine aspects of leadership at all levels of the organization, which might influence high-performance.

Conclusion

Health care executives and health care managers, and policymakers should consider how high performers (positive deviants) across hospital types and sizes create the conditions in which policy was optimally filtered, and borders between hospitals and communities were optimally blurred, and those technical and cultural conditions appeared as characteristics of High-Reliability Organizing. The presence of optimal filtering of policy and melding of connections to the community appears to have been strongly linked to professional identity. Hospitals of different sizes and geographic locations, and acuity and community engagement levels achieve success in delivering high-quality care by operationalizing policies, professional(ism), and institutional features such as creating roles dedicated to meeting the accreditation standards; establishing processes of reporting data to meet the accreditation standards; and sharing lessons within and outside of the organization. High performing community-based hospitals demonstrate features of safe, patient-centered care in ways that recognize practitioners' relationships to the community at large. High performing large hospitals construct formalized ways to provide safe and patient-centered care via supportive bureaucratic structures and processes which resemble the nimble capacities of smaller, community-based hospitals to detect and respond to the needs of the patient and address risks. The key takeaway is that when policy reflects values that institutions and individual practitioners also hold, then the positive deviations and local adaptations taking place at institutions to overcome barriers to achieving outcomes can lead to high-performance.

Table 3. High-Performing Hospital Demographics

Total n=7	Frequency	Percentage
Bed Size (Peer Group)		
Small (~82 beds)	3	42.86%
Medium (~280 beds)	2	28.57%
Large (~548 beds)	2	28.57%
Teaching Status		
Teaching	3	42.86%
Non-Teaching	4	57.15%
Urban/Rural		
Urban	2	28.57%
Rural	5	74.43%

Table 4. Participant Characteristics

Total n=53		
Position/Role	**Frequency**	**Percentage**
Executive Officer/GM/CEO	7	13.2
Accreditation, Quality & Education	1	0.02
Allied Health	1	0.02
Campus Nurse Manager	1	0.02
CNC Stomal Therapy & Wound Management	1	0.02
Deputy Director of Nursing	2	0.04
Director of Emergency Department	1	0.02
Director of Medical Services	4	0.08
Director of Nursing	4	0.08
Director of Nursing & Midwifery Services	1	0.02
Director of Occupational Therapy	1	0.02
Director of Pharmacy	1	0.02
Director of Physiotherapy	1	0.02
Director of Social Work	1	0.02
Director Patient Safety and Quality Unit	1	0.02
Infection prevention and control	1	0.02
Manager Clinical Governance	1	0.02
Manager Community Health	1	0.02
Network Manager Community	1	0.02

Nurse Unit Manager	12	0.23
Operational Nurse Manager	1	0.02
Patient Safety & Clinical Quality Officer	1	0.02
Patient Services Officer	1	0.02
Physician	3	0.06
Quality and Risk Manager	1	0.02
Quality and Safety Manager	1	0.02
Quality Coordinator	1	0.02

Figure 9. Institute of Medicine Six Aims of Quality

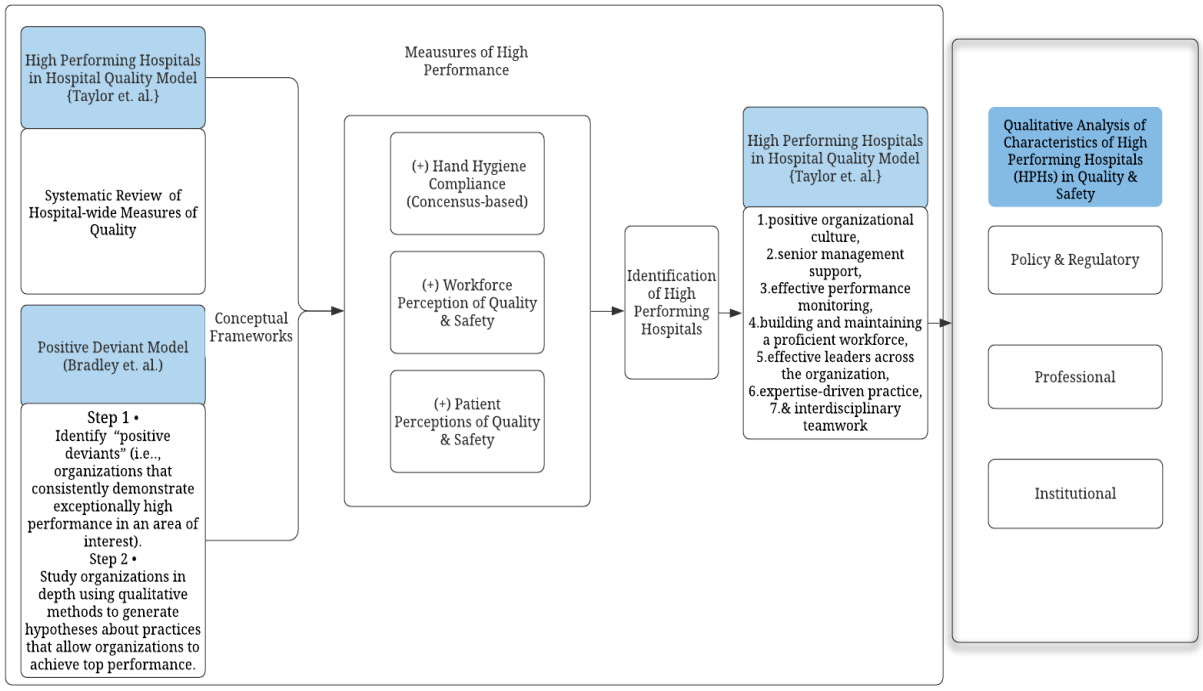

Figure 10. Conceptual framework applied to the analysis of the positively deviating hospitals

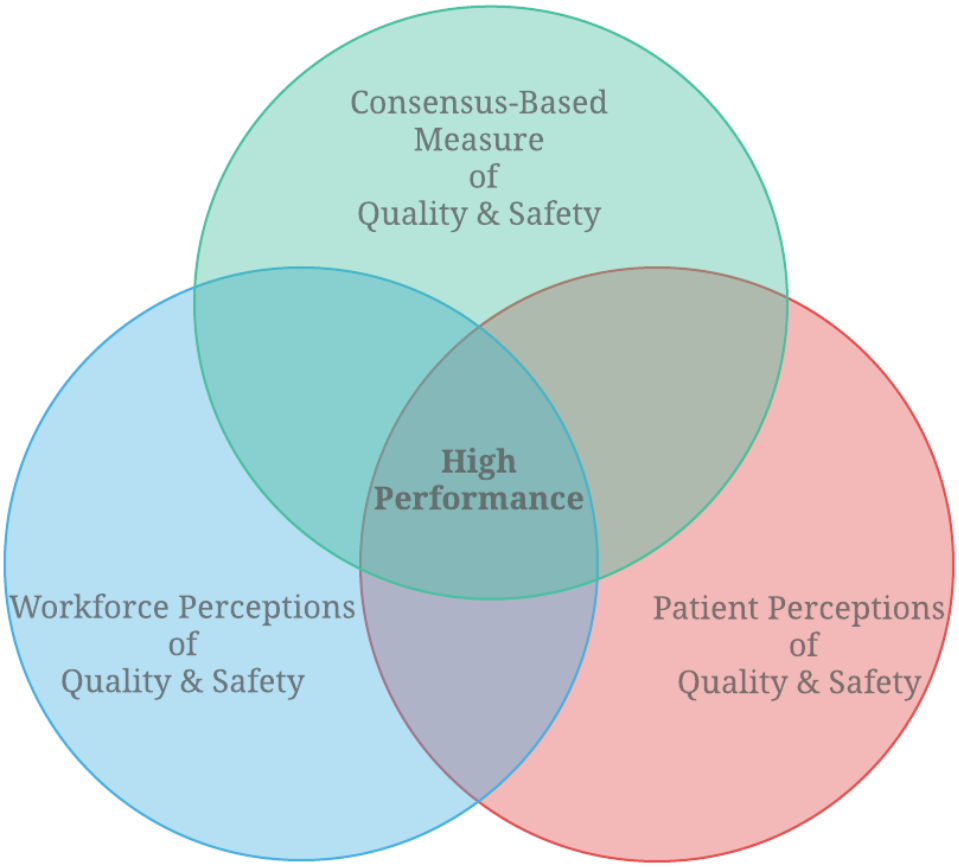

Figure 11. Triangulating Three Data Sources to Identify High-Performance in Healthcare Quality

CHAPTER 5

Summary

This study focused on identifying and examining high performance in health care quality, paying particular attention to the aspects of patient-centeredness and patient safety. The findings highlight the activities and strategies employed by high performers—using the resources they have to provide high-quality, safe care. Despite the common resource constraints of hospitals, High Performing Hospitals (HPHs) find solutions to the problems where others have not, deviating from usual practice to achieve positive results.

This thesis also provides an overview of current and past efforts to measure healthcare quality. We found that while multiple measures, metrics, and indicators of health care quality exist, yet it is often difficult for different stakeholders to know and recognize the characteristics of a quality hospital. This study did not evaluate non-high performing hospitals, but several features were present in HPHs, which could be applied to all hospitals and organizations to improve quality.

The output from aim 1 established criteria for identifying HPHs and elucidated why applying a combination of metrics is important. The search of the literature revealed a vast amount of available data to assess health care quality (Austin et al., 2015) (Schneider et al., 2107). It showed no lack of information, but rather there is a need to provide reports of health care quality that are equally meaningful to patients, providers, and policymakers. We found that combining the existing data could better meet the needs of health practitioners and the public. The literature review also provided a robust summary of the currently used measures and rigorous models to identify high performance. The positive deviant model provided a salient construct for evaluating factors of high performance. We found that pairing the positive

deviant model and the metrics from a systematic review of health care quality indicated which measures aligned with the interests of patients, the workforce, and legislators. The systematic review pointed at the need for alignment across stakeholders and the additional benefits of exploring healthcare quality using qualitative methods. Where others have routinely measured health care quality, it was limited to measures that were specific to a particular clinical area or condition(s) but did not include hospital-wide measures that considered patient-centeredness and patient safety. While measures do exist of patient safety, patient experiences of their care, and workforce perceptions of quality, they are often looked at individually rather than interconnected to a whole picture of quality.

Aim 2 applied the criteria generated in Aim 1 to identify high performance in Australia, a publicly funded, single-payer healthcare system. Examining high performance in a healthcare system that does not provide financial incentives for performance enabled an analysis of non-financial motivators to provide optimal health care. We found that the use of publicly available data from patients, the workforce, and subject matter experts was feasible, rigorous, and informative to identify hospitals outperforming their counterparts. We found that small, community-based hospitals were more likely to score higher than larger, more complex hospitals, specifically regarding patient safety and patient-centeredness.

In aim 3 we elucidated the prominent aspects of HPHs' positive deviants that contributed to exemplary quality. We learned that high performance is observed where there are alignments in incentives and synergies among policy, professional(ism), and institutional goals and actions. The remarkable top performance of community-based hospitals provided a unique magnifying glass to explore the interplay of policy tools, professional identity, and

expanded identity of self (McIntyre, Mattingly, Lewandowski, & Simpson, 2014) in the presence of institutional reinforcements to provide exemplary care. The triangulation of evidence-based measures and qualitative analysis of high-quality manifestations provided a deeper understanding of how high performance can be achieved. Participants at HPHs discussed the positive effects of a sense of ownership, autonomy, and purpose to achieve patient-centered outcomes. Participants at HPHs also expressed an awareness of policies as a tool to standardize, monitor, and evaluate performance and reported health policy (and accreditation standards) as being a beneficial mechanism to drive activities like partnering with consumers to improve hospital operations and performance.

Researchers, practitioners, and hospital executives are continually searching for ways to improve the quality of the healthcare delivery system in the presence of ever-changing tools, policies, and external environment while also facing demands to rein in costs even in a publicly run health system. Despite efforts to advance, many healthcare quality improvement efforts fail (Dixon-Woods et al., 2013) and suffer the consequences of susceptible systems and processes This study recognized that hospitals struggle to excel on multiple performance domains and that they may achieve excellent results on some performance indicators such as in organizational structure (Braithwaite, Westbrook, & Iedema, 2005), but perform below an expected standard on others (Bradley et al., 2006) (Jha et al., 2009) (Rosenthal et al., 2007). It sought out and provided exemplars to show practices that yield high performance.

Attempts to improve quality may have fallen short because of the disciplinary boundaries, myopic approaches and misaligned incentives. The allure of quantifying processes and outcomes has created a groundswell of metrics, indicators, and measures that are not

easily interpretable across stakeholder groups. We showed that coupling quantitative measures and qualitative methods to look at interactions between individuals, groups, populations within systems, and the environment provides lessons about what influences the partnership of providers, patients, and carers to keep patients safe.

The current study used publicly report data from three different data sources to identify and examine HPHs. HPHs leveraged specific policies, attitudes towards professionalism, and institutional attributes or structures to attain positively deviant patient safety and centrism results.

From a policy standpoint, the National Safety and Quality Health Service (NSQHS) Standards were effective in further protecting the public from harm and improving the quality of health service provision. Reports from participants indicated that the NSQHS standards do provide a quality assurance mechanism that tests whether relevant systems are in place to ensure that expected standards of safety and quality are met. The existence of such policies at a national level are common across other countries; what was unique about this study and the findings at HPHs was the uptake and implementation of policies at these positively deviating hospitals.

Each of the three data sources selected was developed by national governing bodies with explicit intentions to create common and comparable elements to improve healthcare quality. In the US, assessment of patient experience and staff are two common mechanisms to assess hospital quality. Similarly, in Australia patients (consumers) and carers are asked questions about their hospital stay. Some states have adopted practices to assess staff perceptions of quality and safety. The Australian healthcare system offers an alternate setting

to explore the nexus of PS and PCC via publicly available data from three equivalent data sources as those (HCAHPS, HSOPS, Hand Hygiene Compliance data) collected in the US. Surveys of patients reveal how practices align with patient expectations, and surveys of staff reflect the ways in which an organization values and focuses on PS and PCC. Furthermore direct observations of hand hygiene compliant practices are manifestations of infection prevention, workforce culture, and patient-centeredness. Each process aims to measure overlapping elements of quality.

Longo et al., showed evidence that consumer reports are associated with improvements in the quality of hospital care, especially in competitive markets. (Longo et al., 1997). This study confirmed that consumer/patient satisfaction combined with workforce and patient safety expert perceptions point to a nexus of safe, patient-centered care. The triad tells us about the drivers of high-quality care outside of the US capitalistic market. Each of three selected data sources selected are developed by national governing bodies in Australia with explicit intentions to create standardized and comparable elements to improve healthcare quality. In the US, patient experience and staff assessment are two common mechanisms to assess hospital quality. Similarly, in Australia, patients (consumers) and carers are asked questions about their hospital stay. Some states have adopted practices to assess staff perceptions of quality and safety.

Theoretical frameworks, defining context, processes and actors, surfaced a means to identify measures used to assess high-quality hospitals. Theoretical frameworks can assist in elucidating key constructs and activities to elicit desired outcomes. As a value-based agenda is increasingly emerging across health systems such an approach can be useful in clarifying

nomenclature, strategies, agendas and as consequence aligning incentives. The practices via PS and PCC initiatives carried out in HPHs could significantly advance evidence about QI and potentially shift health policy thinking and clinical practice as it relates to the formation of policy, professional identities, and institutional efforts to integrate consumers and the community into hospital governance. The strategies described could inform the development of a framework that facilitates large-scale dissemination of high-performance. Further information from non-HPHs (low performers) is needed to solidify understanding of positively deviating practices.

This study offers a novel approach to identify exemplary healthcare quality across stakeholders where legislators, consumers, and health practitioner accounts point to the central point of quality, care that promotes patient preferences, shared decision-making and positive health outcomes. Based on the findings of the review of the literature, aim 2 evaluated hospital performance by triangulating three publicly reported data sources to identify exemplary hospitals.

This dissertation examined some of the historical precedents of modern healthcare quality measurement and focuses on three common domains of measuring healthcare quality: patient experience, workforce perceptions of healthcare quality, and observations of workforce compliance with hand hygiene guidance. Summary scores ranged between 1686-1975 points for Peer Group A, 1690-1927 for Peer Group B, and 1765-2071 for Peer Group C. High performers tended to score higher across all three data sets (HPHs median 1959 [min 1856- max 2071] vs. Non-HPHs median 1862 [min 1686- max 2033]. HPHs were more likely to be located in rural rather than urban settings, smaller and community/district level, as compared to non-HPHs.

HPH's tended to score higher across all three data sources representing the perspectives of patients, staff, and subject matter experts.

To complement the statistical analyses of hospital performance, aim 3 explored organizational characteristics and strategies associated with high performance. We found that social cohesion in the presence of servant leadership styles and the application of standardized measures of quality predicated a sense of partnership with patients and improved safety. Larger hospitals serving more complex care needs achieve similar performance and safety by intentionally organizing structures and processes which support high-quality practices across the hospital. Smaller, high-performing sites, e.g., community-based hospitals, have within them a fluid existence wherein the relationships and the reputational connections in the community influence practitioners toward shared decision-making in practice.

While others have done work to relay quality information about hospitals, we approached this work by combining measures into a summary score to reduce the number of data points and information overload. And while others have calculated composite scores of hospital quality, for example, Keroack et al. explored "Organizational Factors Associated with High Performance in Quality and Safety in Academic Medical Centers," (Keroack et al., 2007) they omitted PCC metrics from their composite index. At the same time, this study emphasized PCC and measures related to safety in our summary score.

Discussion and debate concerning health care leadership are discussed widely and there is considerable investment by health systems in leadership development. Leadership is highly influential in shaping organizational culture and so understanding attributes, competencies and behaviors is important. (West et al., 2105) In this study, leadership practices contributed

immensely to the success of HPHs to co-create common goals and purpose to partner with consumers (patients) across their respective organizations. Greenleaf et al. described servant leadership as a style marked by going beyond a leader's own self-interest(s) and instead focusing on opportunities to help followers grow and develop. (Greenleaf, 1977). Expanding beyond serving, a servant leader exerts less institutional power and control while shifting authority to those who are being led. Servant leadership values community because it provides a face-to-face opportunity for individuals to experience interdependence, respect, trust, and individual growth (Greenleaf, 1977). Characteristics of servant leadership such as amplifying the needs of others, cultivating distributive decision-making and autonomy, creating a shared vision and common goals emerged in this study as enabling attributes. Aspects of servant leadership may be further cultivated and enhanced through formal education and training so that organizations might intentionally adopt behaviors of servant leadership as an enabler of patient-centered practice. However, the leadership style might not align with all cultures globally. Further research could shed light on the presence or absence of characteristics of servant leadership in cultures that have less emphasis on service to achieve positive outcomes in healthcare.

The overarching narratives that accompanied success across the seven sites related to policies, professional(ism), and institutional features. Participants articulated the translation of local, state, and federal policies and accreditation processes regarding PS and partnering with patients (consumers and carers); institutional practices to create a shared vision to serve the community (social cohesion); professional(ism) practices demonstrating, a servant leadership

style, communications about accountability systems for quality and safety, a focus on results, and a culture of teamwork, focus on results, and a culture of teamwork.

Overall findings include that local system factors (and organizational culture) can both help or hinder the successful implementation of policies. Public health systems with rigorous standards to monitor and track performance can be effective in driving excellence. Providing a unified set of measures from different stakeholders gives a more rich picture of quality in HPHs. The addition of qualitative analysis is a critical step in teasing out characteristics like the role that the institution plays in facilitating a sense of ownership and staff commitment to providing patient-centered and safe care.

The collection and reporting of standardized quality metrics enables large-scale comparison of quality of care across various settings. Moreover, national policies and accreditation protocols related to partnering with patients can be strong catalysts to initiate organization-wide changes in practice and culture. When professional identity regarding individuals' values and beliefs about what is important as a practitioner rubs up next to what society through policy says is important-- values and beliefs about providing safe and PCC—and is enabled by an institution that says we are a part of this community we serve this community and our values are to provide safe and PCC and here is what we are going to do about it. Regardless of geography or size, when institutions acted as a conduit for this shared common purpose, that is where high performance arose. Where policy, professionalism, and institutional values and practices converge, we arrive at the nexus of quality. That is where Donabedian's definition of love resides.

Limitations

There are some limitations to the current study. The absence of non-high performing/low performing hospitals make it difficult to distinguish high performing practices as being unique to the hospitals identified as high performers. Also, further information is needed directly from patients regarding their perceptions of their care and definitions of health care quality. Data from private hospitals would further augment distinctions in the performance that are potentially linked to financial incentives. Furthermore, the study design means that findings are contextually bound and are limited in generalizability.

Future Work

An assessment of non-high (low) performing hospitals across the same Hospital Peer Groups would offer a comparison of the similarities and differences of high performers. Additionally, interviews with patients and carers would enable a more proximal assessment of patient perceptions of their care. Including data from private hospitals would also provide insight into high-performance practices across the entire health system. More research is needed to replicate this study in privatized health systems and outside of the Australian context. Future research could also explore whether and how the HPHs sustained exemplary performance. Future examinations could also integrate disparities in care and the quality of care provided across different minority groups. Further testing of the composite score developed in this study in other settings is warranted. Moreover, further elucidation of alignment of leadership styles to organizational attributes may assist in fostering high performing centers and optimizing patient outcomes.

Policy Implications

The findings in this study indicate regulatory changes in accreditation to include consumers in hospital governance resulted in positive changes in practice and performance. Further examination of accreditation to positively influence performance is needed to move towards an enabling agenda. The requirements of public reporting of data that integrates patient, workforce, and consensus-based indicators of healthcare quality enables many stakeholders to get a fuller picture of quality; to understand the perspectives of multiple parties critical to the production of health; addresses the asymmetry of quality for various stakeholders. Additionally, policies which drive comprehensive assessments of hospital performance in quality and safety which integrate perspectives of patients, clinicians, and other stakeholders is needed.

The Desire Path: The Nexus of Patient Safety and Patient Centeredness

The concept of the desire path comes from the field of architectural landscaping, in which there is an understanding that humans tend to create a natural path to arrive at a desired location or outcome (Lidwell, Holden, & Butler, 2010). Desire paths are dirt paths that develop over time as individuals independently bypass formal sidewalks and imprint new paths on the physical landscape (Lidwell et al., 2010). In the design of a park, architectural landscapers might create a walkway which is aesthetically pleasing yet does not consider people's movements towards their desired destinations. Frequent travelers who choose not to use the paved walkway soon form a towpath or cut-through; this is called "finding the desire path." Sociologists adapted the concept into the "social desire path" (Nichols, 2014), (Sewell, 1992), which similarly acknowledges that the limitations of existing structures prompt changes in human behaviors to arrive at socially desired outcomes via creative solutions. Future work could

continue to expand on the social desire path in healthcare and how the nexus of patient safety and patient centric care arise across health systems regardless of geography, funding, or size.

Conclusions

Health care is delivered in dynamic, complex and multifaceted environments with competing incentives and in spite of multiple measures of accountability, agendas can be opaque and conspire to achieve organizational goals. Around the world, the stakes in healthcare are high underscoring the importance of advancing investigations to ensure that patients and their families receive care in high performing organizations that are tailored and targeted to their needs.

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Appendices

Appendix A: Description of Services Offered or Size by Hospital Peer Groups.

Hospital Peer Group	Services Offered or Size
A1: Principal referral	Offers highly specialized services; examples: bone marrow and other specialized transplants, severe burn injury, major trauma
A3: Ungrouped acute - tertiary referral	Specialist acute hospitals not suitable for assignment to any other group
B1: Major hospitals group 1	Availability of one or more specialist services requiring specific infrastructure such as cardiac catheterization, comprehensive cancer center, in-center dialysis or medical radiation imaging
B2: Major hospitals group 2	No specialist services requiring specific infrastructure
C1: District group 1	Less than 10,000, but greater than 4,000, acute weighted separations
C2: District group 2	Less than 4,000, but greater than 2,000, acute weighted separations

APPENDIX B1: SURVEY INSTRUMENT

NSW GOVERNMENT

Bureau of Health Information

NSW Patient Survey: Adult Admitted Patients

<Barcode>
<Title> <First Name> <Last Name>
<Address Line 1>
<SUBURB> <STATE> <POSTCODE>

Date

Dear <INS_TITLE> <INS_SURNAME>,

Your experience in hospital is very important to us

I am writing to ask you to take part in the NSW Patient Survey by telling us about your recent admission to [HOSPITAL NAME] during [MONTH]. **Your experience in this hospital is important as it helps us understand the quality of care you received and allows hospitals to see where they need to improve.**

The Bureau of Health Information was established by the NSW Government to independently report on the performance of the public health system in NSW, including the healthcare experiences of patients. We are running the survey along with Ipsos Social Research Institute, who is sending you this survey on the Bureau's behalf.

The survey is easiest to complete online. Please visit the web address below and log in with the following username and password. It is possible to partially complete the survey online and then return to it later to complete the remainder.

Web address: survey.ipsos.com.au/patientsurvey

Username: [INS_UNAME]

Password: [INS_PWORD]

If you prefer to complete the attached paper survey, please use the included reply-paid envelope to mail it back to us.

Taking part in the survey is voluntary. You have been randomly selected to participate and there are many safeguards in place to protect your identity. The hospital staff who cared for you will not know if you have returned a completed survey and will not be able to see your responses to the survey. At no point will we report any information that identifies you as an individual.

If you have any queries regarding the survey, please contact the toll-free Patient Survey Helpline on 1800 220 936 (Monday to Friday, 4pm–8pm).

Thank you for taking part in the survey.

Yours sincerely

Jean-Frédéric Lévesque
Chief Executive
Bureau of Health Information

Please turn over ☞

How to complete the survey

This survey is about your recent experience as an admitted patient in the hospital named on the previous page. If you have been an admitted patient more than once during the month specified on the previous page, please answer about your most recent experience.

For each question, please use a blue or black pen to mark the box ☒ next to the answer you choose, as shown below.

Example only

How clean were the wards or rooms you stayed in while in hospital?

- ☐ Very clean
- ☒ Fairly clean
- ☐ Not very clean
- ☐ Not at all clean

Sometimes you will find the box you have marked has an instruction to go to another question. By following the instructions carefully you will be able to move past questions that do not apply to you.

If you would prefer not to answer individual questions, leave them blank but please complete the rest of the survey.

If you make a mistake or wish to change a response, simply fill in that box and mark the correct box like this: ☒

If someone is helping you to complete this survey, please ensure the answers given are from your point of view, and not the opinion of the person helping you.

If you prefer a language other than English, please refer to the separate language sheet for information on the Healthcare Interpreter Service.

Please do not write your name or address on the questionnaire.

When you have finished

➔ Remove the covering letter by tearing along the perforated line.

➔ Place the completed survey in the "Reply Paid" envelope and post it. You do not have to use a stamp.

➔ If you have misplaced the "Reply Paid" envelope, please use a plain envelope (no stamp is necessary) and address to:

NSW Patient Survey Program
Ipsos Social Research Institute
Reply Paid 84599
Hawthorn VIC 3122

Some questions and answers

Why are you carrying out the survey?

The NSW Patient Survey gathers information about your experience of health services. By completing the survey, you are helping to improve health services in NSW.

How do I make a formal complaint about my experience in hospital?

Please contact the hospital directly.

Alternatively, you can get more information about your options at the following website:

www.health.nsw.gov.au/patientconcerns

What happens to my survey responses?

Your survey responses will be de-identified and then processed with responses from other people who completed the survey to form a report. These reports will then be provided to NSW Health and local hospitals to help them to improve health services.

Your responses will be treated in the strictest confidence and no identifying information will be given to NSW Health, the hospital or health service you attended, your doctor or other health provider unless required by law. Your responses will not affect any future health services that may be provided to you.

How is my privacy protected?

Your privacy is protected by legislation. Ipsos has been provided with your name and address by NSW Health for the purpose of sending you this survey only, and will keep your contact details confidential.

After all surveys are processed, identifying information will be destroyed and Ipsos will then no longer be able to identify the responses you provided. However, for the period that identifiable details remain, you will be able to contact Ipsos through the toll-free Patient Survey Helpline to ask to see your responses, or to request that some or all of your information be deleted.

You can get more information about privacy and confidentiality by calling the toll-free Patient Survey Helpline or at the following website:

www.bhi.nsw.gov.au/nsw_patient_survey_program/privacy

How do I get more information about the survey?

Please contact the toll-free Patient Survey Helpline on **1800 220 936** (Monday to Friday, 4pm–8pm, excluding public holidays).

NSW Patient Survey: Adult Admitted Patients

Q1 Was your stay in hospital planned in advance or an emergency?

- ☐ An emergency.....Go to Q5
- ☐ Planned in advance
- ☐ Something else

BEFORE ARRIVING AT HOSPITAL

Thinking back to before your hospital stay...

Q2 From the time a doctor said you would need to go to hospital, how long did you have to wait to be admitted?

- ☐ Less than 1 month
- ☐ 1 to 3 months
- ☐ 4 to 6 months
- ☐ 7 to 12 months
- ☐ More than 1 year
- ☐ Don't know/can't remember

Q3 Do you think the amount of time you waited was ...?

- ☐ About right
- ☐ Slightly too long
- ☐ Much too long
- ☐ Don't know/can't remember

Q4 Before your arrival, how much information about your hospital stay was given to you?

- ☐ Not enough
- ☐ The right amount
- ☐ Too much
- ☐ Don't know/can't remember

ARRIVING AT HOSPITAL

Q5 When you arrived in hospital did you spend time in the Emergency Department?

- ☐ Yes .....Go to Q6
- ☐ No .....Go to Q8
- ☐ Don't know/can't remember.....Go to Q8

THE EMERGENCY DEPARTMENT (ED)

Q6 Were the Emergency Department staff polite and courteous?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No
- ☐ Don't know/can't remember

Q7 Do you think the amount of time you spent in the Emergency Department was...?

- ☐ About right
- ☐ Slightly too long
- ☐ Much too long
- ☐ Don't know/can't remember

Go to Q10

PLANNED AND OTHER TYPES OF ARRIVAL/ADMISSION

Q8 Were the staff you saw on your arrival to hospital polite and courteous?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q9 Do you think the time you had to wait from arrival at hospital until you were taken to your room or ward was...?

- ☐ About right
- ☐ Slightly too long
- ☐ Much too long
- ☐ Don't know/can't remember

THE HOSPITAL AND WARD

For the following questions, please think about the time from when you arrived at your ward or room until you left hospital...

Q10 How clean were the wards or rooms you stayed in while in hospital?

- ☐ Very clean
- ☐ Fairly clean
- ☐ Not very clean
- ☐ Not at all clean

Please turn over ☞

Q11 How clean were the toilets and bathrooms that you used while in hospital?

- ☐ Very clean
- ☐ Fairly clean
- ☐ Not very clean
- ☐ Not at all clean

Q12 Did you see nurses wash their hands, use hand gel to clean their hands, or put on clean gloves before touching you?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No, I did not see this
- ☐ Can't remember

Q13 Did you see doctors wash their hands, use hand gel to clean their hands, or put on clean gloves before touching you?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No, I did not see this
- ☐ Can't remember

Q14 Were you given enough privacy when being examined or treated?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q15 Were you given enough privacy when discussing your condition or treatment?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

FOOD

Q16 Did you have any hospital food during this stay?

- ☐ Yes
- ☐ No ..... Go to Q22

Q17 How would you rate the hospital food?

- ☐ Very good
- ☐ Good
- ☐ Neither good nor poor
- ☐ Poor
- ☐ Very poor

Q18 Did you have any special dietary needs (e.g. vegetarian, diabetic, food allergies, religious, cultural, or related to your treatment)?

- ☐ Yes
- ☐ No ..... Go to Q20

Q19 Was the hospital food suitable for your dietary needs?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No
- ☐ Don't know/can't remember

Q20 Did you need help from staff to eat your meals?

- ☐ Yes
- ☐ No ..... Go to Q22

Q21 Did you get enough help from staff to eat your meals?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

DOCTORS

Q22 If you needed to talk to a doctor, did you get the opportunity to do so?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No, I did not get the opportunity
- ☐ I had no need to talk to a doctor

Q23 When you had important questions to ask a doctor, did they answer in a way you could understand?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No, I did not get answers I could understand
- ☐ I did not ask any questions

Q24 In your opinion, did the doctors who treated you know enough about your medical history?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q25 Did you have confidence and trust in the doctors treating you?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q26 Were the doctors polite and courteous?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q27 Were the doctors kind and caring towards you?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q28 Overall, how would you rate the doctors who treated you?

- ☐ Very good
- ☐ Good
- ☐ Neither good nor poor
- ☐ Poor
- ☐ Very poor

NURSES

Q29 If you needed to talk to a nurse, did you get the opportunity to do so?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No, I did not get the opportunity
- ☐ I had no need to talk to a nurse

Q30 When you had important questions to ask a nurse, did they answer in a way you could understand?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No, I did not get answers I could understand
- ☐ I did not ask any questions

Q31 In your opinion, did the nurses who treated you know enough about your care and treatment?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q32 Did nurses ask your name or check your identification band before giving you any medications, treatments or tests?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No, they did not ask my name or check my identification band
- ☐ Don't know/can't remember

Q33 Did you have confidence and trust in the nurses treating you?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q34 Were the nurses polite and courteous?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q35 Were the nurses kind and caring towards you?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q36 Overall, how would you rate the nurses who treated you?

- ☐ Very good
- ☐ Good
- ☐ Neither good nor poor
- ☐ Poor
- ☐ Very poor

Please turn over ☞

OTHER HEALTH PROFESSIONALS

Q37 Which, if any, of the following other health professionals did you receive care or treatment from during this hospital stay?
Please ✗ all the boxes that apply to you

- ☐ Dietician
- ☐ Occupational therapist
- ☐ Pharmacist
- ☐ Physiotherapist
- ☐ Psychologist
- ☐ Radiographer (X-ray, ultrasound, MRI)
- ☐ Social worker
- ☐ Speech pathologist
- ☐ Other

Please write in ☐

☐ None of these ..... Go to Q40

Q38 Were these other health professionals polite and courteous?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q39 Did you have confidence and trust in these other health professionals?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

YOUR TREATMENT AND CARE

For the following questions, please think about all the health professionals who treated or examined you in the hospital, including doctors, nurses and others.

Q40 Did the health professionals explain things in a way you could understand?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q41 During your stay in hospital, how much information about your condition or treatment was given to you?

- ☐ Not enough
- ☐ The right amount
- ☐ Too much
- ☐ Not applicable to my situation

Q42 Did you have worries or fears about your condition or treatment while in hospital?

- ☐ Yes
- ☐ No ..... Go to Q44

Q43 Did a health professional discuss your worries or fears with you?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No

Q44 Were you involved, as much as you wanted to be, in decisions about your care and treatment?

- ☐ Yes, definitely
- ☐ Yes, to some extent
- ☐ No
- ☐ I was not well enough
- ☐ I did not want or need to be involved

Q45 If your family or someone else close to you wanted to talk to a doctor, did they get the opportunity to do so?

- ☐ Yes, definitely
- ☐ Yes, to some extent
- ☐ No, they did not get the opportunity
- ☐ Not applicable to my situation
- ☐ Don't know/can't say

Q46 How much information about your condition or treatment was given to your family, carer or someone close to you?

- ☐ Not enough
- ☐ Right amount
- ☐ Too much
- ☐ It was not necessary to provide information to any family or friends
- ☐ Don't know/can't say

Q47 How would you rate how well the health professionals worked together?

- ☐ Very good
- ☐ Good
- ☐ Neither good nor poor
- ☐ Poor
- ☐ Very poor

Q48 If you needed assistance, were you able to get a member of staff to help you within a reasonable timeframe?

- ☐ All of the time
- ☐ Most of the time
- ☐ Some of the time
- ☐ Rarely
- ☐ Never
- ☐ I did not need assistance

Q49 Was a call button placed within easy reach?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No
- ☐ Not applicable
- ☐ Don't know/can't remember

Q50 Did you feel you were treated with respect and dignity while you were in the hospital?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q51 Were your cultural or religious beliefs respected by the hospital staff?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No, my beliefs were not respected
- ☐ My beliefs were not an issue

Q52 While in hospital, did you receive, or see, any information about your rights as a patient, including how to comment or complain?

- ☐ Yes
- ☐ No
- ☐ Don't know/can't remember

Q53 Not including the reason you came to hospital, during your hospital stay, or soon afterwards, did you experience any of the following complications or problems?

- ☐ An infection
- ☐ Uncontrolled bleeding
- ☐ A negative reaction to medication
- ☐ Complications as a result of surgery
- ☐ Complications as a result of tests or procedures
- ☐ A blood clot
- ☐ A pressure wound or bed sore
- ☐ A fall
- ☐ Any other complication or problem
- ☐ None of these .....Go to Q56

Q54 Was the impact of this complication or problem ...?

- ☐ Very serious
- ☐ Fairly serious
- ☐ Not very serious
- ☐ Not at all serious

Q55 In your opinion, were members of the hospital staff open with you about this complication or problem?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No

PAIN

Q56 Were you ever in any pain while in hospital?

- ☐ Yes
- ☐ No .....Go to Q59

Q57 When you had pain, was it usually severe, moderate or mild?

- ☐ Severe
- ☐ Moderate
- ☐ Mild

Q58 Do you think the hospital staff did everything they could to help manage your pain?

- ☐ Yes, definitely
- ☐ Yes, to some extent
- ☐ No

Please turn over ☞

TESTS

Q59 During your stay in hospital, did you have any tests, X-rays or scans?

- ☐ Yes
- ☐ No ..... Go to Q63

Q60 Did a health professional discuss the purpose of these tests, X-rays or scans with you?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q61 Did you receive test, X-ray or scan <u>results</u> while you were still in hospital?

- ☐ Yes
- ☐ No ..... Go to Q63

Q62 Did a health professional explain the test, X-ray or scan results in a way that you could understand?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No

OPERATIONS AND PROCEDURES

Q63 During your stay in hospital, did you have an operation or surgical procedure?

- ☐ Yes
- ☐ No ..... Go to Q70

Q64 Was your operation or surgical procedure planned before you came to hospital?

- ☐ Yes
- ☐ No ..... Go to Q68

Q65 Thinking back to when you first tried to book an appointment with a specialist, how long did you have to wait to see that specialist?

- ☐ Less than 1 week
- ☐ 1 to 4 weeks
- ☐ 5 to 8 weeks
- ☐ More than 8 weeks
- ☐ Don't know/can't remember

Q66 From the time a specialist said you needed the operation or surgical procedure, how long did you have to wait to be admitted to hospital?

- ☐ Less than 1 month
- ☐ 1 to 3 months
- ☐ 4 to 6 months
- ☐ 7 to 12 months
- ☐ More than 1 year
- ☐ Don't know/can't remember

Q67 Do you think the total time between when you first tried to book an appointment with a specialist and when you were admitted to hospital was...?

- ☐ About right
- ☐ Slightly too long
- ☐ Much too long
- ☐ Don't know/can't remember

Q68 Before your operation or surgical procedure, did a health professional explain what would be done in a way you could understand?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No
- ☐ I did not want or need an explanation

Q69 After the operation or procedure, did a health professional explain how the operation or surgical procedure had gone in a way you could understand?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No
- ☐ Don't know/can't remember

LEAVING HOSPITAL (DISCHARGE)

Thinking now about when you were discharged, that is when you left the hospital to go home or to another facility...

Q70 Did you feel involved in decisions about your discharge from hospital?

- ☐ Yes, definitely
- ☐ Yes, to some extent
- ☐ No, I did not feel involved
- ☐ I did not want or need to be involved

Q71 At the time you were discharged, did you feel that you were well enough to leave the hospital?

- ☐ Yes
- ☐ No

Q72 Thinking about when you left hospital, were you given enough information about how to manage your care at home?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No, I was not given enough
- ☐ I did not need this type of information

Q73 Did hospital staff take your family and home situation into account when planning your discharge?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No, staff did not take my situation into account
- ☐ It was not necessary
- ☐ Don't know/can't remember

Q74 Thinking about when you left hospital, were adequate arrangements made by the hospital for any services you needed?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No, arrangements were not adequate
- ☐ It was not necessary

Q75 Did hospital staff tell you who to contact if you were worried about your condition or treatment after you left hospital?

- ☐ Yes
- ☐ No
- ☐ Don't know/can't remember

Q76 Were you given or prescribed medication to take at home?

- ☐ Yes
- ☐ No ..... Go to Q80

Q77 Did a health professional in the hospital explain the purpose of this medication in a way you could understand?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No

Q78 Did a health professional in the hospital tell you about medication side effects to watch for?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No

Q79 Did you feel involved in the decision to use this medication in your ongoing treatment?

- ☐ Yes, completely
- ☐ Yes, to some extent
- ☐ No, I did not feel involved
- ☐ I did not want or need to be involved

Q80 Did you receive a copy of a letter from the hospital doctors to your family doctor (GP)?

- ☐ Yes
- ☐ No
- ☐ Don't know/can't remember

Q81 On the day you left hospital, was your discharge delayed?

- ☐ Yes
- ☐ No ..... Go to Q85

Q82 How long was the delay?

- ☐ Less than 1 hour
- ☐ At least 1 hour but less than 2 hours
- ☐ At least 2 hours but less than 4 hours
- ☐ 4 hours or longer
- ☐ Don't know/can't remember

Please turn over ☞

Q83 Did a member of staff explain the reason for the delay?

- ☐ Yes
- ☐ No

Q84 What were the main reasons for the delay? Please ✘ all the boxes that apply to you

- ☐ I had to wait for medicines
- ☐ I had to wait to see the doctor
- ☐ I had to wait for an ambulance/transport
- ☐ I had to wait for the letter for my GP
- ☐ I was not well enough
- ☐ Some other reason
- ☐ Don't know/can't remember

OVERALL

Q85 Overall, how would you rate the care you received while in hospital?

- ☐ Very good
- ☐ Good
- ☐ Neither good nor poor
- ☐ Poor
- ☐ Very poor

Q86 How well organised was the care you received in hospital?

- ☐ Very well organised
- ☐ Fairly well organised
- ☐ Not well organised

Q87 If asked about your hospital experience by friends and family how would you respond?

- ☐ I would speak highly of the hospital
- ☐ I would neither speak highly nor be critical
- ☐ I would be critical of the hospital

Q88 Did you want to make a complaint about something that happened in hospital?

- ☐ Yes, and I did complain.....Go to Q90
- ☐ Yes, but I did not complain.....Go to Q89
- ☐ No, I did not want to make a complaint.....Go to Q90

Q89 Why didn't you make a complaint? Please ✘ all the boxes that apply to you

- ☐ I didn't know how to make a complaint
- ☐ I didn't know who to complain to
- ☐ I was worried it might affect my future care
- ☐ I didn't think it would be taken seriously
- ☐ I was too unwell to complain
- ☐ It wasn't a serious issue
- ☐ Some other reason

OUTCOMES

Q90 Did the care and treatment received in hospital help you?

- ☐ Yes, definitely
- ☐ Yes, to some extent
- ☐ No, not at all

Q91 Is the problem you went to hospital for...?

- ☐ Much better
- ☐ A little better
- ☐ About the same
- ☐ A little worse
- ☐ Much worse

Q92 In the week before your hospital stay, how difficult was it for you to carry out your normal daily activities (e.g. physical activity, going to work, caring for children)?

- ☐ Not at all difficult
- ☐ Only a little difficult
- ☐ Somewhat difficult
- ☐ Very difficult
- ☐ I was not able to at all

Q93 About one month after your discharge from hospital, how difficult was it for you to carry out your normal daily activities?

- ☐ Not at all difficult
- ☐ Only a little difficult
- ☐ Somewhat difficult
- ☐ Very difficult
- ☐ I was not able to at all

ABOUT YOU (THE PATIENT)

Q94 What year were you born?

WRITE IN (YYYY) ☐☐☐☐

Q95 What is your gender?

- ☐ Male
- ☐ Female

Q96 What is the highest level of education you have completed?

- ☐ Still at secondary school
- ☐ Less than Year 12 or equivalent
- ☐ Completed Year 12 or equivalent
- ☐ Trade or technical certificate or diploma
- ☐ University degree
- ☐ Post graduate/higher degree

Q97 Which, if any, of the following long-standing conditions do you have (including age related conditions)?

Please ✘ all the boxes that apply to you

- ☐ Deafness or severe hearing impairment
- ☐ Blindness or severe vision impairment
- ☐ A long-standing illness (e.g. cancer, HIV, diabetes, chronic heart disease)
- ☐ A long-standing physical condition
- ☐ A learning disability
- ☐ A mental health condition (e.g. depression)
- ☐ A neurological condition (e.g. Alzheimer's, Parkinson's)
- ☐ None of these

Q98 In general, how would you rate your health?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

Q99 Which language do you mainly speak at home?

- ☐ English .....Go to Q102
- ☐ A language other than English

Please write in then go to Q100 ☐

Q100 Did you need, or would you have liked, to use an interpreter at any stage while you were in hospital?

- ☐ Yes
- ☐ No .....Go to Q102

Q101 Was an interpreter provided when you needed one?

- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No

Q102 Are you of Aboriginal origin, Torres Strait Islander origin, or both?

- ☐ Yes, Aboriginal
- ☐ Yes, Torres Strait Islander
- ☐ Yes, both Aboriginal and Torres Strait Islander
- ☐ No

Q103 Who completed this questionnaire?

- ☐ The patient
- ☐ The patient with help from someone else
- ☐ Someone else on behalf of the patient

Q104 The Bureau would like your permission to link your survey answers to other information from health records relating to you which are maintained by various NSW and Commonwealth agencies (including your hospitalisations, medical visits, ambulance transportation, medication or health registry information). Linking to your health care information for the two years before and after your visit will allow us to better understand how different aspects of the care provided by health facilities are related to the health and use of health services of their patients.

Your information will be treated in the strictest confidence. We will receive the linked information after your name and address have been removed. We will not report any results which may identify you as an individual and your responses will not be accessible to the people who looked after you.

Do you give permission for the Bureau of Health Information to link your answers from this survey to health records related to you?

- ☐ Yes
- ☐ No

Please go to the next page to complete the final two questions ☞

YOUR FINAL COMMENTS

Q105 What was the best part of the care you received while in this hospital?

Q106 What part of your care provided by this hospital most needs improving?

Thank you for your time.
Please remove the front page by tearing along the perforated line.
Return the questionnaire in the reply paid envelope provided
or send in an envelope addressed to
NSW Patient Survey, Ipsos Social Research Institute,
Reply Paid 84599, Hawthorn, VIC 3122 (no stamp is needed)

Certain questions within this survey are drawn from the NHS Inpatient Survey (courtesy of the NHS Care Quality Commission), Picker Institute questionnaires (courtesy of National Research Corporation), the Patient Experience Information Development Working Group (PEIDWG) national set of core, common patient experience questions, and the Victorian Patient Satisfaction Monitor, and are used with permission.

Barcode

Appendix B2: NSW Patient Survey Question Domains: Adult Admitted Patients

Question	Domain from Survey
Q10_Rm_Cln: How clean were the wards or rooms you stayed in while in hospital? Score (+2Very Clean; +1 Fairly Clean; -1 Not Very; -2 Not Clean at all)	Infection prevention
Q11_Toilet_Cln: How clean were the toilets and bathrooms that you used while in hospital? Score (+2Very Clean; +1 Fairly Clean; -1 Not Very; -2 Not Clean at all)	Infection prevention
Q12_ObsNurseHH: Did you see nurses wash their hands, use hand gel to clean their hands, or put on clean gloves before touching you? *Score (+2 Yes, always; +1 Yes, sometimes; -1 No, I did not see this; 0 Can't remember)*	Infection prevention
Q13_ObsDocHH: Did you see doctors wash their hands, use hand gel to clean their hands, or put on clean gloves before touching you? *Score (+*2 Yes, always*;* +1 Yes, sometimes*;* -1 No, I did not see this*;* 0 *Can't* remember *)*	Infection prevention
Q22_Pt_Tlk_Doc: If you needed to talk to a doctor, did you get the opportunity to do so? *Score (+*2Yes, always*;* +1 Yes, sometimes*;* -1No*)*	Access
Q25_Doc_Trust: Did you have confidence and trust in the doctors treating you? *Score (+*2Yes, always*;* +1 Yes, sometimes*;* -1No*)*	Trust
Q28_Doc_R8: Overall, how would you rate the doctors who treated you? *Score (+*2-Very good*;* +1 Good*;* 0Neither good nor poor*;* -1 Poor*;* -2Very poor*)*	Perceived Quality
Q29_TlkNurse: If you needed to talk to a nurse, did you get the opportunity to do so? *Score (+*2Yes, always*;* +1 Yes, sometimes*;* -1No*)*	Access
Q33_Nurse_Trust: Did you have confidence and trust in the nurses treating you? *Score (+*2-Yes, always*;* +1 Yes, sometimes*;* -1No*)*	Trust
Q44_PTInvolved: Were you involved, as much as you wanted to be, in decisions about your care and treatment? *Score (+*2Yes, definitely*;* +1 Yes, to some extent*;* -1 No*)*	Involvement
Q45_TalkDoc: If your family or someone else close to you wanted to talk to a doctor, did they have enough opportunity to do so? *Score (+*2Yes, definitely*;* +1 Yes, to some extent*;* -1 No*;* 0 *Don't* know/*can't* say*)*	Access

Q85: Overall, how would you rate the care you received while in hospital? *Score (+*2Very good*;* +1 Good*;* 0Neither good nor poor*;* -1 Poor*;* -2Very poor*)*	Perceived Quality

Appendix C: Questions from BHI Adult Admitted Patient Survey Used in Patient Experience Score and Associated Quality Domains.

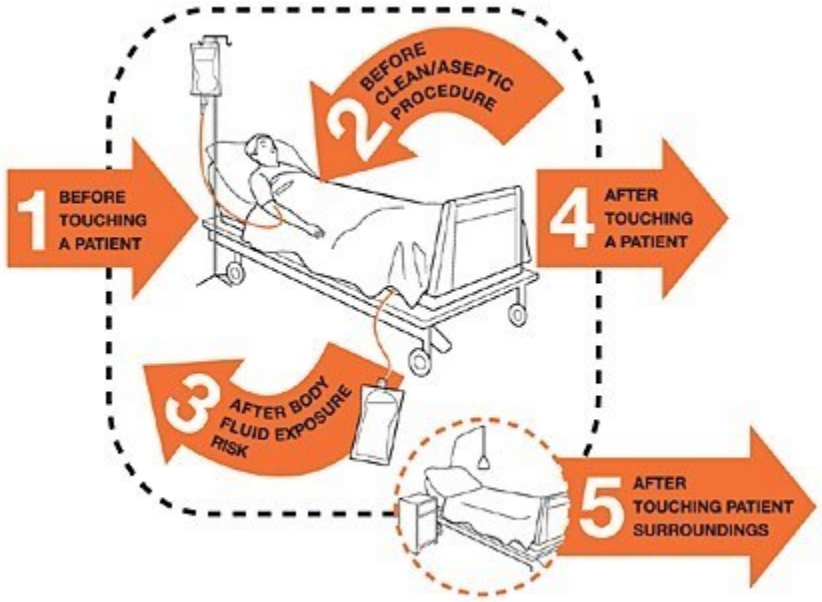
QSA **Question**	**Response Options**
[R4A] Please indicate your level of agreement with the following statement: Patients and their families and / or carers are viewed as integral members of the health care viewed as integral members of the health care team. *Score (+ 5* Strongly Agree, +4 Agree, +3 Neutral, +2 Disagree, +1 Strongly disagree*)* *NSQHS actions: 2.2.1*	• Strongly agree • Agree • Neutral • Disagree • Strongly disagree
[FAC5A] Please indicate your level of agreement with the following statement: Consumers representing patients and their carers or families are involved in facility level planning, service development and quality improvement, service development and quality condition improvement. NSQHS actions:1.8.3; 9.9.1 *Score (+5* Strongly Agree, +4 Agree, +3 Neutral, +2 Disagree, +1 Strongly disagree*)*	• Strongly agree • Agree • Neutral • Disagree • Strongly disagree
[R6A] What is the level of implementation of the following process in your facility: Our facility has a process for patients, families or carers to escalate care and to request a clinical review or rapid response if they are worried or concerned about any change in the patient's condition Score (+5 Fully Implemented, +4 Mostly Implemented ,+3 Partially Implemented, +2 In planning, +1 Not at all (0) NSQHS actions:1.8.3; 9.9.1	• Fully Implemented (100%) • Mostly Implemented (67%-99%) • Partially Implemented (34%-66%) • In planning (1%-33%) • Not at all (0%)

Appendix D: Questions from the Quality Systems Assessment (QSA) and Associated Response Options Used in the Summary Score

QSA **Question**	**Response Options**
[R4A] Please indicate your level of agreement with the following statement: Patients and their families and / or carers are viewed as integral members of the health care viewed as integral members of the health care team. *Score (+ 5* Strongly Agree, +4 Agree, +3 Neutral, +2 Disagree, +1 Strongly disagree*)* *NSQHS actions: 2.2.1*	• Strongly agree • Agree • Neutral • Disagree • Strongly disagree
[FAC5A] Please indicate your level of agreement with the following statement: Consumers representing patients and their carers or families are involved in facility level planning, service development and quality improvement, service development and quality condition improvement. NSQHS actions:1.8.3; 9.9.1 *Score (+5* Strongly Agree, +4 Agree, +3 Neutral, +2 Disagree, +1 Strongly disagree*)*	• Strongly agree • Agree • Neutral • Disagree • Strongly disagree
[R6A] What is the level of implementation of the following process in your facility: Our facility has a process for patients, families or carers to escalate care and to request a clinical	• Fully Implemented (100%) • Mostly Implemented (67%-99%)

review or rapid response if they are worried or concerned about any change in the patient's condition Score (+5 Fully Implemented, +4 Mostly Implemented ,+3 Partially Implemented, +2 In planning, +1 Not at all (0) NSQHS actions:1.8.3; 9.9.1	• Partially Implemented (34%-66%) • In planning (1%-33%) • Not at all (0%)

Appendix E: WHO List of Five Distinct Moments Associated with Increased Risk of Spread of Contaminants



Appendix F: Interview Guide

v.May302016

Case Study Interviews for Australian-American Fellowship Study

Describing Characteristics of High-Performing Patient-Centered, Safe Hospitals

Interviews:

A. The Chief Executive Officer/General Manager
B. Quality and Safety Manager
C. Director of Nursing
D. Director of Medical Services
E. Frontline Provider
F. Other_____

Interviewer:	Kristina Weeks (Fellow)
Interviewee/Study participant:	
Interviewee's Position Title:	
Contact details:	Tel: Email:
Case Study Site:	
Date and time of interview	
Face To Face Interview	□
Telephone Interview	□

[START RECORDER]

Aims

I am interested in finding out how high performing hospitals carry out strategies and practices related to patient safety and patient centered care. I am also interested in understanding what factors make this work possible.

Introduction

- Introduce self
- Duration 40-60 minutes
- Stress confidentiality and importance of open discussion. Conversation will be kept private and all identifiers removed.
- Confirm digital voice recording

Oral consent script

[start recorder before consenting]

Do you give your permission for me to **interview** you?

Do you give me permission to **record** you?

Do you give your permission for me to re-contact you to clarify information?

Are you happy to proceed?

Do you have any questions?

Ok, in which case let's start.

(Once consent is obtained, record this in record of consent on digital recorder.)

ROLES AND LEADERSHIP

Firstly let's talk a little about organizational roles and design ….

Q.1. Tell me how you come to be here, doing this job and how long you have worked here in this role

Q.2. What training do you think best prepared you for your role in the organization?

Q.3. How would you describe the organization's mission? How has it changed over time?

FRAMING PATIENT ENGAGEMENT

Now, I'd like to hear about how the organization perceives patient centered care….

Q.4. How does your organization *do* (*think* or *talk about*) patient-centered care?

Q.5. How might patients and families and carers know that your organization has a focus on patient centered care? What does that look like here? So are there any [other] places/initiatives where centeredness comes in the form of actual patient involvement?"

MOTIVATION

Let's consider why this organization headed along the path to improving patient care experience ….

Q.6. What do you think was the motivating factor/s for improvement in patient care experience?

IMPLEMENTATION

There are a number of ways that patient centeredness and safety might be brought about, and I'd like to go through a few that stick out in the literature and see if you think any of them are happening, or applicable to, life here. The literature and experience tell us: broad policy initiatives like Health Standard 2 might have an effect on safety and centeredness, and then there's more local things like:

a. *developing safety programs;*
b. *including senior management involvement in those programs;*
c. *staff training on safety;*
d. *feedback on performance to staff;*
e. *incentive programs.*

That's a basic list, and likely incomplete – any additions you can think of right now? [add any that they come up with, or offer the chance for later].

So from this list, I'd like to go through them and check in with your experience to see if any of them applies here, and if it does, what it actually looks like on the ground.

So, let's start with National Standard 2.

Q.7. What has that meant for you and the organization?

Q.8. Do you see it as having safety AND centeredness implications? One more than the other?

Q.9. What strategies / projects has your organization done or talked about related to national health Standard 2 regarding partnering with patients?

Q.10. How do you think your organization's approaches to safety and centeredness differ from than hospitals of different size (small, large)?

Q.11. What do think makes your hospital stand out in safety and centeredness?

Q.12. Is there active use of patient feedback, involvement in service design and improvement etc.?)

QUALITY IMPROVEMENT

Next we will discuss quality improvement approaches…

Q.13. Can you give me an example of how a new program to improve performance or quality was developed and implemented?

Q.14. Great, next, how about **senior managers**, do they get involved? Ever? It often shows up in the literature but is helpful to know how you apply it into practice. Has a member of senior management participated in an improvement project in the last 12 months? Role of the senior member (clinical, management)

*[Great, next, how about **training**.]*

Q.15. Do you have mandatory, OR voluntary training to reduce patient harm e.g. LEAN SIGMA, TEAM STEPPS?

Probe: Who pays for the training, the org or the employee?

Probe: Are training (mandatory) requirements in safety different for doctors and nurses?

Q.16. What would be the key elements of a successful intervention to improve patient-centered care? What would be most important to include in an intervention?

COMMUNICATION

*Great, next, how about **communication** across the organization…*

Q.17. How do employees and staff learn about their performance regarding patient safety?

Q.18. How does your organization enable communication across wards and departments?

INFECTION PREVENTION: HAND HYGIENE

Okay, thanks for talking about your thoughts on safety and centeredness implications, but let's ground this in something tangible, like hand hygiene – a nationally reported measure:

Q.19. How does the organization communicate about hand hygiene/who sets the tone here?

Q.20. What strategies have been used to address proper hand hygiene practices?

INCENTIVES

*Great, next, how about **incentives***

Q.21. Does your organization generally have any incentives associated with performance in quality and safety, or patient feedback?

Q.22. Can you tell me more about the types of incentives and how they are used?

Probe: If there are financial incentives, are they awarded to individuals or clinical areas e.g. wards?

Probe: Are incentives used to improve the adoption of QI programs?

DATA

*Now let's talk about how your organization uses **data**:*

Q.23. How is data collected regarding patient experiences of their care?

Probe: For how long has it been collected, and how are the data used?

Q.24. How is data shared across the organization?

Q.25. How does the executive team learn about patient experiences of care?

ORGANIZATIONAL CULTURE

Next we will discuss the way things are done around here…

Q.26. How does the staff **learn** from **mistakes**? How do staff **share** mistakes? How do staff **learn** from **successes**?

Q.27. What factors do you find challenging or difficult about providing patient centered care?

Q.28.If you identified a successful intervention, would you be able to obtain the resources and support necessary to implement it long term?

Q.29 How would you be able to make any intervention sustainable?

EXTERNAL FACTORS

*Now I'd like to hear about **stakeholders** outside of the organization:*

Q.30. Are there external factors such as government directives, funding or regulation; health reform; insurer programs and priorities, or social or community expectations that influence how your organization delivers care?

Probe: Are there some examples that you can describe in detail?

Q.31. Have the priorities of these outside groups changed over time? How so?

Probe: How has that affected the care you provide?

Q.32. How do you keep up with the changes in the health care system that may affect you?

Q.33. Are there unique characteristics of your patients, their homes or communities, or of your organization that should be considered in the design of an intervention?

*******Wrap up*******

Q.34. Is there anything that we didn't talk about regarding the culture of the organization or patient-based care and patient safety that you think should be addressed?

Q.35 Is there anyone else in your organization with whom we should talk? Perhaps someone who is viewed by as a leader by their peers or someone who could "champion" a new program?

CURRICULUM VITAE

The Johns Hopkins University School of Medicine

Curriculum Vitae

_____ Date: 30 November 2020

Kristina R. Weeks MHS, DrPH(c)

DEMOGRAPHIC INFORMATION

Current Appointments

Research Associate Faculty

Armstrong Institute for Patient Safety & Quality

Research Associate Faculty

Department of Anesthesiology & Critical Care Medicine

Personal Data

The Johns Hopkins University School of Medicine

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750 East Pratt Street, 15th Floor

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e-mail : kweeks2@jhmi.edu

Education and Training

Degree	Year	Institution	Discipline
BS, BA	1997-2001	College of Charleston, Charleston, SC	Health Promotion, Spanish,

MHS	2009	Johns Hopkins Bloomberg School of Public Health, Baltimore, MD	Health Policy
DrPH	2020	Johns Hopkins Bloomberg School of Public Health, Baltimore, MD	Health Policy & Management

Doctor of Public Health (Dr.P.H.) Candidate, Department of Health Policy and Management, The Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD. Expected graduation: Dec 2020.

Professional Experience

Dates	Positions	Institution

2016-2018, Deputy to VP of Health Equity, Johns Hopkins Healthcare

2015-2016, Visiting Scholar, University of Technology Sydney, Centre for Health Economics Research & Evaluation

2015-2016, Health Policy Fellow, The Commonwealth Fund

2012-Present, Research Associate Faculty, Johns Hopkins Anesthesia and Critical Care Medicine

2009-2012, Research Program Manager, Johns Hopkins Quality and Safety Research Group

2008-2009, Senior Research Project Coordinator, Johns Hopkins Quality and Safety Research Group

2002-2008, Research Project Coordinator, Johns Hopkins Welch Center for Prevention, Epidemiology, and Clinical Research

2002, Winter Olympics Events Services Specialist, Salt Lake Olympic Committee

National/International Appointments

2015-2016 Health Policy Fellow, The Commonwealth Fund, NY, NY

2015-2016 Visiting Scholar, University of Technology Sydney, Sydney, Australia

2014-2015, Focal Point, World Health Organization (WHO) African Partnership for Patient Safety (APPS) Program

RESEARCH ACTIVITIES

Selected Peer-Reviewed publications

1. Tilburt JC, Dy SM, **Weeks K**, Klag M, Young JH. Associations between home remedy use and a validated self-reported adherence measure in an urban African-American population with poorly controlled hypertension. J Natl Med Assoc. 2008 Jan;100(1):91-7.
2. Goeschel CA, Holzmueller CG, Berenholtz SM, Marsteller JA, Murphy DJ, Sawyer M, Duval-Arnould J, Thompson DA, Lubomski LH, **Weeks K**, Bauer L, Pronovost PJ. Executive/Senior Leader Checklist to improve culture and reduce central line-associated bloodstream infections. Jt Comm J Qual Patient Saf. 2010 Nov;36(11):519-24. No abstract available.
3. Sawyer M, **Weeks K,** Goeschel CA, Thompson DA, Berenholtz SM, Marsteller JA, Lubomski LH, Cosgrove SE, Winters BD, Murphy DJ, Bauer LC, Duval-Arnould J, Pham JC, Colantuoni E, Pronovost PJ. Using evidence, rigorous measurement, and collaboration to eliminate central catheter-associated bloodstream infections. Crit Care Med. 2010 Aug;38(8 Suppl):S292-8. doi: 10.1097/CCM.0b013e3181e6a165.
4. **Weeks KR**, Goeschel CA, Cosgrove SE, Romig M, Berenholtz SM. Prevention of central line-associated bloodstream infections: a journey toward eliminating preventable harm. Curr Infect Dis Rep. 2011 Aug;13(4):343-9. doi: 10.1007/s11908-011-0186-8.
5. Konerman M, **Weeks KR**, Shands JR, Tilburt JC, Dy S, Bone LR, Levine DM, Young JH. Short Form (SF-36) Health Survey measures are associated with decreased adherence among urban African Americans with severe, poorly controlled hypertension. J Clin Hypertens (Greenwich). 2011 May;13(5):385-90. doi: 10.1111/j.1751-7176.2010.00402.x. Epub 2010 Dec 17.
6. Dy SM, Asch SM, Lorenz KA**, Weeks K**, Sharma RK, Wolff AC, Malin JL. Quality of end-of-life care for patients with advanced cancer in an academic medical center. J Palliat Med. 2011 Apr;14(4):451-7. doi: 10.1089/jpm.2010.0434. Epub 2011 Mar 10.
7. Pham JC, Aswani MS, Rosen M, Lee H, Huddle M, **Weeks K**, Pronovost PJ. Reducing medical errors and adverse events. Annu Rev Med. 2012;63:447-63. doi: 10.1146/annurev-med-061410-121352. Epub 2011 Nov 4. Review.
8. Lin DM, **Weeks K**, Bauer L, Combes JR, George CT, Goeschel CA, Lubomski LH, Mathews SC, Sawyer MD, Thompson DA, Watson SR, Winters BD, Marsteller JA, Berenholtz SM, Pronovost PJ, Pham JC. Eradicating central line-associated bloodstream infections statewide: the Hawaii experience. Am J Med Qual. 2012 Mar-Apr;27(2):124-9. doi: 10.1177/1062860611414299. Epub 2011 Sep 14.
9. Lin DM, **Weeks K**, Holzmueller CG, Pronovost PJ, Pham JC. Maintaining and sustaining the On the CUSP: stop BSI model in Hawaii. Jt Comm J Qual Patient Saf. 2013 Feb;39(2):51-60.
10. Marsteller JA, Hsu YJ, **Weeks K**. Evaluating the impact of mandatory public reporting on participation and performance in a program to reduce central line-associated bloodstream infections: evidence from a national patient safety collaborative. Am J Infect Control. 2014 Oct;42(10 Suppl):S209-15. doi: 10.1016/j.ajic.2014.06.001.
11. Weaver SJ, **Weeks K**, Pham JC, Pronovost PJ. On the CUSP: Stop BSI: evaluating the relationship between central line-associated bloodstream infection rate and patient safety climate profile. Am J Infect Control. 2014 Oct;42(10 Suppl):S203-8. doi: 10.1016/j.ajic.2014.05.020.

12. **Weeks KR,** Hsu YJ, Yang T, Sawyer M, Marsteller JA. Influence of a multifaceted intervention on central line days in intensive care units: results of a national multisite study. Am J Infect Control. 2014 Oct;42(10 Suppl):S197-202. doi: 10.1016/j.ajic.2014.06.003.
13. Hsu YJ, **Weeks K**, Yang T, Sawyer MD, Marsteller JA. Impact of self-reported guideline compliance: Bloodstream infection prevention in a national collaborative. Am J Infect Control. 2014 Oct;42(10 Suppl):S191-6. doi: 10.1016/j.ajic.2014.05.010.
14. Nwabuo CC, Dy SM, **Weeks K**, Young JH. Factors associated with appointment non-adherence among African-Americans with severe, poorly controlled hypertension. PLoS One 2014;9(8):e103090. doi: 10.1371/journal.pone.0103090.
15. Berenholtz SM, Lubomski LH, **Weeks K**, Goeschel CA, Marsteller JA, Pham JC, Sawyer MD, Thompson DA, Winters BD, Cosgrove SE, Yang T, Louis TA, Meyer Lucas B, George CT, Watson SR, Albert-Lesher MI, St Andre JR, Combes JR, Bohr D, Hines SC, Battles JB, Pronovost PJ; et al. Eliminating central line-associated bloodstream infections: a national patient safety imperative. Infect Control Hosp Epidemiol. 2014 Jan;35(1):56-62. doi: 10.1086/674384. Epub 2013 Nov 26.
16. Wyskiel RM, **Weeks K**, Marsteller JA. Inviting families to participate in care: a family involvement menu. Jt Comm J Qual Patient Saf. 2015;41(1):43-6. No abstract available.
17. Young JH, Ng D, Ibe C, **Weeks K**, Brotman DJ, Dy SM, Brancati FL, Levine DM, Klag MJ. Access to Care, Treatment Ambivalence, Medication Nonadherence, and Long-Term Mortality Among Severely Hypertensive African Americans: A Prospective Cohort Study. J Clin Hypertens (Greenwich). 2015 Apr 29. doi: 10.1111/jch.12562. [Epub ahead of print]
18. Pham, JC; Goeschel, CA.; Berenholtz, SM.; Demski, R; Lubomski, LH.; Rosen, MA.; Sawyer, MD.; Thompson, DA.; Trexler, P; Weaver, SJ.; **Weeks, KR**.; Pronovost, PJ. CLABSI Conversations: Lessons From Peer-to-Peer Assessments to Reduce Central Line-Associated Bloodstream Infections. Qual Manag Health Care. 2016 Apr-Jun;25(2):67-78.

Selected Abstracts

1. Shands JR, **Weeks K**, Carr B, Young JH. Does Poor Access Increase Mortality Among Severely Hypertensive African Americans? Circulation. American Heart Association May 2007
2. Konerman MC, **Weeks K**, Shands J, Young JH. High Physical Functioning is Associated with Decreased Adherence Among Urban African-Americans with Severe, Uncontrolled Hypertension. Circulation. American Heart Association May 2007.
3. Dy SM, **Weeks K**, Millman A, Segal JB. Johns Hopkins University, Baltimore, MD Efficacy Of Exenatide In Treatment Of Type 2 Diabetes Mellitus: A Systematic Review. Society of General Internal Medicine 2007
4. Claire F. Snyder, Medicine, Amanda L. Blackford, Elizabeth Garrett-Mayer, Julie R. Brahmer, Michael A. Carducci, Antonio C. Wolff, Danetta E. Hendricks, Kristina R. Weeks, Sydney M. Dy, Albert W. Wu. Symptoms, Supportive Care Needs, And Function In Cancer Patients: How Are They Related? International Society of Quality of Life Research November 2006
5. Jon C. Tilburt, Kristina Weeks, Sydney Mors Dy, J. Hunter Young, Michael Klag, Reckless or Pragmatic? The Association of Home Remedy Use with Adherence in an Urban African American Population with Severe, Uncontrolled Hypertension American Heart Association Meeting, March 4, 2006, Phoenix, AZ.
6. Kristina Weeks, J. Hunter Young, Sydney M. Dy Severe, Uncontrolled Hypertension in Urban African Americans and Their Hypertensive Siblings. 20th International Interdisciplinary Conference on Hypertension and Related Cardiovascular Risk Factors in Ethnic Minority Populations (ISHIB2005) at the Caribe Hilton in San Juan, Puerto Rico.

7. Kristina Weeks, J. Hunter Young, Sydney M. Dy. Admission among Severe, Uncontrolled Hypertension in Urban African-Americans. 6th Scientific Forum on Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke, Washington, D.C. May 14 - 16, 2005
8. Dy, SM, JH Young, Weeks KR, Wongus R, Klag MJ. Does Insurance status affect physicians' prescribing for severe, uncontrolled hypertension? 27th Annual Meeting of the Society of General Internal Medicine. 2004

Research Program Building / Leadership

01/11- 2015, Co-Director, Research In Progress Program, Johns Hopkins Armstrong Institute for Patient Safety and Quality

01/12- 2015, Co-Director, Data Management Infrastructure group, Johns Hopkins Armstrong Institute for Patient Safety and Quality

Teaching

Classroom instruction

01/12- Present, Instructor, Patient Safety and Quality Leadership Academy, Johns Hopkins Armstrong Institute for Patient Safety and Quality

01/12- Present, Instructor, Patient Safety and Quality training workshop, Johns Hopkins Armstrong Institute for Patient Safety and Quality

01/12- Present, Instructor, Patient Safety and Quality Certificate program, Johns Hopkins Armstrong Institute for Patient Safety and Quality

01/12- Present, Instructor, Patient Safety and Quality curriculum design, Johns Hopkins Armstrong Institute for Patient Safety and Quality

Fall/14 Guest Lecturer, Krieger Schools Of Arts And Sciences Undergraduate Public Health Studies Program

Fall, 09-11, Guest Lecturer, Johns Hopkins Bloomberg School of Public Health Fall Institute jointly sponsored by the Agència de Salut Pública de Barcelona, in collaboration with the Universitat Pompeu Fabra

Mentoring

Advisees

Val Strockbine, PICU nurse, Johns Hopkins Armstrong Institute for Patient Safety and Quality Patient Safety Fellow

April Lawner, Administrator, Johns Hopkins University School of Medicine, Department of Dermatology

Hanan Edrees, Advisor to the vice minister of economy and planning, Saudi Arabia

Jordan Duval, Assistant Professor, Johns Hopkins University School of Medicine, Anesthesiology & Critical Care Medicine

Presentations/Invited Talks

2018, Invited Speaker, High Performing Hospitals of Safe, Patient-Centered Care, Commonwealth of Australia, Canberra, Australia

2016, Guest Speaker, “Exploring the Nexus of Patient Safety and Patient Centeredness In High Performers”, the Clinical Excellence Commission, Sydney, Australia

2016, Guest Speaker, “Exploring the Nexus of Patient Safety and Patient Centeredness In High Performers”, the Australian Commission on Safety and Quality in Health Care, Sydney, Australia

2016, Guest Speaker, “Hospital-Wide Approaches to Improving Patient Experience ”, Patient Experience Symposium, Sydney, Australia

2016, Guest Speaker, “Exploring the Intersections of Patient Safety and Experience”, the Clinical Excellence Commission, Sydney, Australia

2016, Guest Speaker, “Introduction to the Comprehensive Unit-based Safety Program”, the Clinical Excellence Commission, Sydney, Australia

2016, Guest Speaker, “Organizational Approaches to Improving Patient Experience”, the Clinical Excellence Commission, Sydney, Australia

2016, Guest Speaker, “Exploring the Intersections of Patient Safety and Experience”, the Sax Institute, Sydney, Australia

2015, Speaker, “Healthcare Policy Reform and Hospital Management”. Hospital Management Institute of Nanjing University

2014, Guest lecturer, Johns Hopkins Krieger Schools Of Arts And Sciences Undergraduate

Public Health Studies Program, Foundations of Management and Leadership in Health Care Organizations course, “Performance Improvement Strategies in Health Care."

2012, Guest Speaker, Oregon Hospital Association, “CUSP overview and sustainability”

2012, Guest Speaker, University of Rochester Medical Center, “Using CUSP to C differences in C.Diff”

2011, Guest Speaker, Hawai'i Medical Service Association, Blue Cross Blue Shield of Hawai’i

2009-2011, Guest lecturer, Johns Hopkins Bloomberg School of Public Health Graduate Fall Institute of Health Policy and Management, Problem Solving in Public Health, “Problem Solving in Implementation Science”

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

System Innovation and Quality Improvement Program Building/Leadership:

2016-2018 Deputy to VP of Health Equity, Johns Hopkins Healthcare

2014-2015 Disparities Leadership Program Awardee, Massachusetts General Hospital, stratification of JHM measures (HCAHPS and Core Measures) by gender and race for quality improvement purposes.

ORGANIZATIONAL ACTIVITIES

Professional Societies

2005	Member, International Society of Hypertension
2005	Member, American Heart Association
2009	Member, Academy Health
2009	Member, Johns Hopkins Bloomberg School of Public Health, Health Policy & Management Departmental Curriculum Development and Review Committee
2010	Certificate, Project Management, Georgetown University, Washington DC
2010	Certificate, Johns Hopkins Bloomberg School of Public Health Graduate Summer Institute of Epidemiology and Biostatistics, Baltimore, MD
2011	Certificate, Johns Hopkins Bloomberg School of Public Health Graduate Summer Institute of Health Policy and Management
2012	Member, International Society for Quality in Health Care
2014	Member, Society of Critical Care Medicine

RECOGNITION

Awards, Honors

2003	Award of Excellence in recognition of outstanding contribution to the Department of Medicine. Myron L. Weisfeldt, Director of the Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
2003	Certificate, Johns Hopkins Bloomberg School of Public Health Graduate Summer Institute of Epidemiology and Biostatistics
2007	Certificate, Johns Hopkins Bloomberg School of Public Health Graduate Fall Institute of Health Policy and Management
2008	Certificate, Johns Hopkins Bloomberg School of Public Health Graduate Summer Institute of Epidemiology and Biostatistics
2009	The June Culley Masters Scholarship in Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Ellen McKenzie2009
2009	Certificate, Johns Hopkins Bloomberg School of Public Health Graduate Summer Institute of Health Policy and Management
	Certificate, Johns Hopkins Bloomberg School of Public Health Graduate
	Health and Human Rights
2009	Certificate Health Disparities and Health Inequality, Johns Hopkins Bloomberg School of Public Health