

Accountability in Ontario's Acute Care Hospital Sector and its Effect on Organizational Strategic Priorities

by

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A thesis submitted in conformity with the requirements
for the degree of Doctor of Philosophy

Institute of Health Policy, Management and Evaluation
University of Toronto

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2014

Abstract

Background: In health care, organizations are faced with new and changing requirements for accountability. The province of Ontario, Canada has increased its focus on accountability over the past decade, including efforts directed at acute care hospitals.

Objectives: To examine the environment of accountability in Ontario's acute care hospital sector, and its effect on hospital strategic priorities, perceptions, and behaviours.

Methods: This mixed methods study used three methods: 1) document analysis of three policies introduced between 2004 and 2012: Hospital Service Accountability Agreements, Ministry-LHIN Performance Agreements, and Quality Improvement Plans; 2) a survey of Ontario's acute care hospitals (53 of 116 responded); and 3) thirteen interviews with hospital executives and health system leaders.

Results: The three policies employed performance measures. Since 2004, the focus of performance measurement has expanded from financial and service volumes to include quality and patient safety. Survey findings revealed shifts in perceptions of strategic issues by hospitals in 2011 compared to 2004. Hospital priorities have shifted towards convergence of strategic

priorities. Shifts also moved some priorities to align with external accountability requirements. Interview findings confirmed that accountability is being used as a management tool; hospitals have adapted and purposely adjusted their priorities; accountability requirements provide hospitals with a focus; and unintended consequences may result.

Discussion: The success of legislated accountability may be dampened as hospitals struggle to meet performance targets and reporting requirements. Shifts towards standardized organizational strategic priorities may be a benefit of accountability. Misalignment of requirements and levels of accountability is perceived as a challenge by hospitals, but they continue to adapt. Hospitals are also challenged by low controllability of performance indicators and an uncoordinated environment of accountability. Even so, accountability requirements provide organizations with a focus, an important benefit.

Conclusions: Accountability may be challenging, but it provides a focus for organizations. Added supports for capacity building may be necessary for some organizations, particularly small community hospitals.

Dedicated to
my father, Howard Kromm.

Acknowledgments

My sincerest gratitude goes to my supervisor, Dr. Raisa B. Deber, for her guidance and constant enthusiasm and support. Her students always know that she is their biggest fan and will always push them towards academic excellence and success. She challenged me in ways for which I will forever be grateful.

Special thanks go to my thesis committee members, Dr. G. Ross Baker and Dr. Walter P. Wodchis. I could not have done this without their guidance, thoughtful feedback, and support. Both of them ensured the final product was so much better!

The Institute of Health Policy, Management and Evaluation was always supportive, and provided me with many learning and training opportunities. The staff and faculty of IHPME have created a supportive environment that was essential for this doctoral work. Special thanks to Dr. Whitney Berta.

Thank you, Kānecy Oñate, for assisting me with many essential components of this PhD.

Thank you to Dr. Gillian R. Currie and Dr. Brenda Gamble, whose words of wisdom and friendship were a source of support.

To my friends, both near and far, thank you for your constant support. Karla, Cynthia, Ashley, Sarah, Eun Nim, Jeannine, and Frieda, I was lucky to have you all during this final stretch of my graduate education. I am also grateful to my fellow IHPME students; you made this experience greater than it would have been otherwise. Carolyn, your feedback on my research and final thesis was vital. “PhD school” would not have been the same without your enthusiasm and friendship.

Nancy Kraetschmer, thank you for providing suggestions and contacts along the way.

Thank you to all my study participants; your willingness to give precious time from your busy schedules was invaluable. Thank you to all who responded to the survey even though it was far down their list of priorities. To all those who allowed me to interview them, both for developmental and data collection purposes, I could not have done this without you.

To my parents, Howard and Seija, thank you for your unconditional love and support throughout my life. Dad, you missed the end of this PhD journey, but I know you continue to cheer for me because you always have and were always pleased. Thank you to my sisters, Helen and Anne, for your kindnesses. Thank you to my nephews, Adam and Gideon, for all the laughs over the years!

This research was generously supported through a Health Research Studentship Award from Alberta Innovates – Health Solutions; a Lupina Junior Doctoral Fellowship from the Comparative Program on Health and Society at the Munk School of Global Affairs at the University of Toronto; an Institute of Health Policy, Management and Evaluation Fellowship; and a CIHR PHSI Grant (PHE-101967).

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List of Abbreviations

ACSC	Ambulatory care sensitive condition
ALC	Alternate level of care
AMI	Acute myocardial infarction
ANOVA	Analysis-of-Variance
CAHO	Council of Academic Hospitals of Ontario
CCAC	Community Care Access Centre
CCO	Cancer Care Ontario
CDI	Clostridium difficile infection
CEO	Chief Executive Officer
CFMA	Commitment to the Future of Medicare Act, 2004
CHA	Canadian Healthcare Association
CHF	Congestive heart failure
CIHI	Canadian Institute for Health Information
CIO	Chief Information Officer
CLI	Central line infection
CMG	Case-mix groups
COPD	Chronic obstructive pulmonary disease
CT	Computed Tomography
CTAS	Canadian Triage and Acuity Scale
ECFAA	Excellent Care for All Act, 2010
ED	Emergency department
ELDCAP	Elderly capital assistance program
ER	Emergency room
GDP	Gross domestic product
GI	Gastrointestinal
HAA	Hospital Accountability Agreement
HQCC	Health Quality Council of Canada
HQO	Health Quality Ontario

HRRC	Hospital Report Research Collaborative
H-SAA	Hospital Service Accountability Agreement
HSMR	Hospital standardized mortality ratio
IT	Information Technology
JPPC	Ontario Joint Policy and Planning Committee
LC	Large community acute care hospital
LHIN	Local Health Integration Network
LHSIA	Local Health System Integration Act, 2006
LOS	Length of stay
LSAA	Long-Term Care Home Service Accountability Agreement
LTC	Long-term care
MAC	Medical Advisory Committee
MLAA	Ministry-LHIN Accountability Agreement
MLPA	Ministry-LHIN Performance Agreement
MOHLTC	Ministry of Health and Long-Term Care
MRI	Magnetic Resonance Imaging
MRSA	Methicillin-resistant Staphylococcus aureus
MSAA	Multi-Sectoral Accountability Agreement
NHS	National Health System (UK)
OHA	Ontario Hospital Association
OHQC	Ontario Health Quality Council
P4P	Pay-for-performance
QI	Quality improvement
QIP	Quality Improvement Plan
SC	Small community acute care hospital
T	Teaching acute care hospital
VAP	Ventilator-associated pneumonia
VP	Vice president
VRE	Vancomycin Resistant Enterococcus
WT	Wait time

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Chapter 1: Introduction

1.1. Introduction

Accountability has been identified as an issue of importance in health care (Emanuel & Emanuel, 1996). Many discussions of health care in Canada are also focused on accountability (Brown et al., 2006b) and accountability relationships involving providers of health care services, patients, payers (including private insurers and the government), and regulators (Shortt & MacDonald, 2002). Governments can use various policy instruments to incent organizations to align their strategic priorities with what is desired by policy makers. Tensions may occur between the internal organizational priorities of independent health care providers and the priorities of the health care system as determined by the government, which also finances many health care services. Even so, health care organizations are required to meet new requirements for accountability. It is currently not known how acute care hospitals and their strategic priorities are affected by increased requirements for accountability.

This thesis focuses on acute care hospitals in the province of Ontario and their strategic priorities in an environment increasingly focused on accountability. This chapter will introduce acute care hospitals and concepts related to accountability (expanded on in chapter two). Section 1.2 provides the research questions guiding this study. Section 1.3 defines the acute care hospital sector and explains why accountability in this sector is being sought. Section 1.4 introduces the role of strategic planning, followed by section 1.5 on the contribution of this study. Finally, section 1.6 provides a brief summary of the remaining chapters in this thesis.

1.2. Research Questions

This thesis focuses on the acute care hospital sector of Ontario's health care system to answer the following research questions:

1. *How is accountability of acute care hospitals sought in the province of Ontario and what are the trends over time?*
2. *How has the increased focus on accountability and changes in areas of focus over time been translated into changes in perceptions of strategic priorities by acute care hospitals in the province of Ontario?*
 - a. *What are the consistencies and variations in acute care hospitals' strategic priorities and do they vary depending on the type (size) of acute care hospital?*

- b. *To what extent do shifts in priorities align with areas of formal accountability and how can these shifts (or absence) be explained?*
- c. *How has the process of strategic priority setting and activities carried out by acute care hospitals been affected?*

3. *How have hospitals responded to their environment of multiple accountabilities?*

1.3. Acute care hospitals in Canadian health care

Acute care hospitals provide short term and intensive medical, surgical, diagnostic and treatment services for in-patients for conditions resulting from injury or illness, for a short period of time (CIHI, 2013a). They may also provide some outpatient services. Their medical staff is comprised of physicians, nurses and other health professionals, technologists and technicians (Industry Canada, 2011). Acute care hospitals must be licensed or approved as hospitals by their respective provincial/territorial governments (CIHI, 2012b).

Under the Canadian Constitution, health care is a provincial/territorial responsibility (Marchildon, 2013). However, unlike some European countries, Canada uses what the OECD calls a “public-contract model,” meaning that most providers (including doctors and hospitals) are private providers who receive funding from public payers (the provincial government) to deliver health care services (Docteur & Oxley, 2003). The *Canada Health Act*, 1984 specifies that the provincially run health insurance system must fully fund all medically necessary services provided in hospitals or by physicians. The federal government provides monetary and tax transfers to the provinces for health care services. Since 2004, this transfer flows through the Canada Health Transfer, estimated to amount to slightly more than 20 percent of provincial spending on health care in 2011 (Marchildon, 2013). The remainder of provincial spending on health care is derived from provincial government revenues (Marchildon, 2013). Patients do not face any direct charges at the point of service when accessing medically necessary services from hospitals or physicians (Health Canada, 2012).

In the 1990s, most provinces and territories in Canada implemented regionalization, “a way to control cost and improve delivery by decentralizing decision-making... to the regional... board level” (Health Canada, 2012). This decentralization process and introduction of regionalization often included the dissolution of hospital corporate boards (e.g., Alberta). Ontario instituted regionalization in 2006 when fourteen Local Health Integration Networks (LHINs) were created as an intermediary between independent health service providers and the MOHLTC (Ronson,

2006). Ontario's acute care hospitals have maintained their own independent corporate boards. LHINs are not involved in the provision of clinical services, unlike regions in some Canadian provinces where hospital boards were dissolved. Similar to regionalization arrangements in other provinces, LHINs are entirely funded by the provincial government and are responsible for allocating funding to health service providers, and coordinating and integrating service delivery within their geographical area. Ultimate authority over hospital funding and system strategic direction remains with the provincial government (Brown et al. 2006a).

There are three key actors involved with holding acute care hospitals accountable in the province of Ontario. Prior to 2006, the provincial government provided funding directly to hospitals in Ontario through the Ministry of Health and Long-Term Care (MOHLTC) and held them accountable through hospital accountability agreements. By creating LHINs, the government reduced its direct interaction with hospitals, which now received their allotted funding from their respective LHIN. This arrangement can change because the provincial government retained ultimate authority over the health care system.

Beginning in 2007, hospitals must sign accountability agreements with their LHIN in order to obtain funding. The accountability agreements specify targets for performance indicators and provide a process for LHINs and hospitals to follow if a performance target is not met (OHQC & JPPC, 2008). A hospital that does not comply with the requirements of its accountability agreement may face a penalty of reduced or discontinued funding (CFMA, 2004). In practice, sanctions imposed on acute care hospitals have resulted from their failure to balance their budgets (a financial performance indicator in the accountability agreement). The sanctions used in these situations have not been financial; instead, the government has appointed supervisors or fired CEOs (Kaminski et al., 2009; MOHLTC, 2009; Scott, 2008).

Historically hospital funding has been in the form of global budgets allocated at the end of each fiscal year (Brown et al., 2006a), but is moving towards alternative forms of funding. Annual funding allocations continue to be the norm, with the exception of 2008-10 when a multi-year funding was specified for hospitals. For over a decade, hospitals have received about 85 percent of their funding from the provincial government (CIHI, 2012c). Hospitals continue to account for the largest proportion of public health spending in Ontario (OHA, 2010b); although their share of total health expenditure is decreasing as care moves from hospitals to home and community.

Provincial governments and the public want to ensure taxpayer dollars are used appropriately. The dependence of acute care hospitals on public funding provides provincial governments with fiscal power that can be used to hold hospitals accountable.

The third actor involved with holding acute care hospitals accountable is Health Quality Ontario (HQQ). HQO is a government funded, independent arms-length agency accountable to the public and the MOHLTC, and mandated by the *Commitment to the Future of Medicare Act*, 2004. HQO was given responsibility for measuring and reporting on the quality of long-term care and resident satisfaction in 2008. Responsibility for measurement and reporting expanded with the *Excellent Care for All Act*, 2010 (ECFAA) to include acute care hospital services (HQO, 2012b). HQO is not involved in the funding or delivery of health care services; instead, it is focused on quality improvement and ensuring performance information obtained from health care organizations is publicly available. ECFAA also mandated pay-for-performance (P4P) for hospital executives, to hold them accountable for the hospital's performance on quality indicators reported to HQO. Executive P4P gave the provincial government another form of fiscal power to increase accountability of hospitals and their executives.

The approaches used to achieve accountability, whether financial or regulatory, may lead hospitals to respond by changing priorities and strategies. The next section introduces the role of strategic planning and prioritization of acute care hospitals in the face of regulations and other constraints.

1.4. Acute care hospitals and strategic priorities

Even though Canadian hospitals are susceptible to the priorities of their provincial government because of regulations and financial dependence, they must also engage in internal strategic planning in response to policy changes and health system restructuring (Baker et al., 1990). This susceptibility to government priorities can create tension between organizational priorities and system strategies (Brown et al., 2005a). Ontario's hospitals have independent corporate boards; as independent organizations, they will have their own corporate goals, even when faced with constraints due to regulations and other external requirements. Hospitals are also faced with environmental factors (e.g., catchment size, hospital location) that may affect their prioritization of strategic issues. Because of these constraints, hospitals will need to prioritize among

organizational strategies and those of the health system as established by the government and its priorities.

Constraints are not necessarily negative. They can help hospitals determine what is important in terms of their own goals and those of the health system. Hospitals can use broader health system policies and priorities when deciding upon strategic issues for their own organization. Using broader system priorities as a guide can mitigate the tension between individual organizational priorities and those of the public funder (the government). The use of broader system priorities as a guide for hospitals can also increase value for the system by establishing a link between health system initiatives and organizational strategic priorities (Bevan, 2006; Lomas, 2003; Porter & Teisberg, 2004).

In the past, there was no articulation of a system level strategy for health care in the province of Ontario (Brown et al., 2006a). The absence of both a system strategy and multi-year funding allocations made long-term planning and prioritization difficult for hospitals because they could not be sure of future funding levels or the direction of the system (Brown et al., 2006a). Reducing uncertainty around funding and system strategies could potentially strengthen shared strategic priorities between hospitals and the broader health system.

The Canadian province of British Columbia provided an example of how to address the issue of accountability. It was the first province to implement annually updated multi-year performance agreements between the provincial government and its acute care hospitals as a way to increase accountability and transparency (British Columbia Ministry of Health, 2005; Office of the Auditor General of British Columbia, 2003; Quigley & Scott, 2004). After the first two years of performance agreements, the auditor general of British Columbia suggested measurable performance expectations supporting the Ministry of Health's strategic direction should be established; roles, responsibilities, and performance expectations should be published in an accountability framework; and that reporting should be connected to specific areas of accountability (Office of the Auditor General of British Columbia, 2003). Lessons from British Columbia showed that uncertainty is decreased when clear roles, performance expectations, system strategies, and timely resource allocation decisions are communicated so that organizations can engage in planning and prioritization (Office of the Auditor General of British, Columbia 2003).

Ontario followed the example of British Columbia when establishing its own legislated contractual agreements between public funders and independent acute care hospitals, first between the government and acute care hospitals, then between LHINs and their respective acute care hospitals.

1.5. Contribution of study

This study addresses the policy problem of how acute care hospitals and their strategic priorities are affected by the introduction of requirements aimed at achieving accountability. Health care organizations face new accountability requirements to which they must adapt. These requirements indicate a health system strategy and agenda, but we do not know the effect that these changes and multiple accountabilities have on hospitals and their priorities. The increased focus on accountability in Ontario's health care system and ensuing changes to areas of formal accountability over the past decade provides an opportunity to fill this knowledge gap by answering the three research questions in section 1.2.

1.6. Thesis organization

This thesis is organized into seven chapters, including this introductory chapter. Summaries of chapters two through seven are provided in this section. **Chapter two** provides the theoretical framework used for this study along with a literature review. The framework includes the responses of organizations, and how they are affected by the policy instruments of regulation, financial incentives, and information directed towards payers and users of health care services. The theory includes the concepts of measurability (a production characteristic of goods and services) and controllability as they can affect the success of the policy instrument being used. Unintended consequences of performance measurement and public reporting are also addressed in the framework.

Details of the study are provided in **chapter three**, including data sources and methods used in this research. The unit of analysis is the organization (acute care hospital). The study is mixed methods utilizing data collected from accountability documents, a survey sent to all Ontario acute care hospital Chief Executive Officers (CEOs), and key stakeholder interviews with CEOs and other senior management at selected Ontario acute care hospitals.

Chapter four addresses the first research question of how accountability is sought in the acute care hospital sector of Ontario and the trends over time. The chapter begins with the performance indicators used between 2004 and the most recent version (at the time of writing) of three types of accountability documents used in Ontario's acute care hospital sector: 1) the Ministry-LHIN Performance Agreement (MLPA); 2) the Hospital Service Accountability Agreement (H-SAA); and 3) the Quality Improvement Plan (QIP). The MLPA is an agreement between the LHIN and the Ministry of Health and Long-Term Care (MOHLTC). As such, it outlines the performance and reporting obligations of LHINs who are responsible for allocating funds to health service providers within their geographical boundaries. The H-SAA is an agreement between each acute care hospital and its respective LHIN. Each H-SAA outlines performance and reporting obligations for the specific acute care hospital as well as deliverables that must be achieved with the money the hospital receives. The QIP is an annual plan for quality that includes measures of performance; it ties executive compensation to these performance measures in order to increase executive accountability. Each of the documents is publicly available on LHIN and hospital websites. Examination of these documents over time reveals consistencies, changes, connections between the documents, shifts in the focus of the health care system, and challenges.

Chapter five addresses the second research question of how the increased focus on accountability has been translated into changes in perceptions of strategic priorities by acute care hospitals in Ontario. The chapter provides the findings from the 2011 survey of strategic priorities of acute care hospitals in Ontario, subdivided into three groups by type: 1) teaching, 2) large community, and 3) small community hospitals. The 2011 data is compared to data from 2004¹ collected using the same survey. Between the two survey years major changes occurred in the health care system in Ontario, particularly in the acute care hospital sector; accountability agreements were introduced in 2005, regionalization began in 2006, and Quality Improvement Plans were introduced in 2010. These two years of data revealed consistencies and variations in articulation of strategic issues and organizational perceptions of the importance and challenge of strategic issues, as well as alignment with areas of formal accountability. Subgroup analysis reveals whether all acute care hospitals perceive strategic priorities similarly or whether responses differ depending on the type of acute care hospital.

¹ Permission to use the 2004 data was kindly provided by researchers from the Institute of Health Policy, Management and Evaluation, University of Toronto who used it for an earlier project (Brown et al. 2005a).

Chapter six presents the findings from semi-structured interviews with CEOs and other senior executives from a sample of different types of acute care hospitals in Ontario. All interviewees were obtained from hospitals that responded to the strategic priorities survey. The interviews reveal how the increased focus on accountability and its requirements affect acute care hospitals, how hospitals have responded to the policy instruments being used, and the perceptions of key stakeholders about the effect of accountability and its requirements on the organization. These findings finish answering the second research question on the perceptions of acute care hospitals and answer the third research question about how acute care hospitals have responded to their environment of accountability. The interview findings are presented according to seven major themes: multiple accountability relationships; external accountability requirements; issues in performance measurement; the scope of accountability; unintended consequences; tools of accountability; and changing perceptions of strategic issues over time.

Finally, **chapter seven** provides a discussion of the study findings and a conclusion to the thesis, including suggestions for future research. The framework will be revisited in the discussion to synthesize the study findings.

Chapter 2: Theory and Literature

2.1. Introduction

This chapter presents the theoretical framework guiding this study of acute care hospitals in Ontario, Canada and accountability. The literature used to develop the framework comes from the fields of organizational behaviour, public policy, and health services research, including literature on accountability in health care. A study of accountability requires an awareness of what organizations are held accountable for; to whom they are accountable; how they are held accountable; and consequences for not meeting accountability requirements. The environment of accountability can influence the possible responses organizations make to external requirements, such as priority setting and changing perceptions of strategic issues. Organizations are also influenced by the policy instruments used by governments to achieve accountability and other goals. These instruments can lead to intended and unintended consequences resulting from organizational responses. Finally, literature addressing the effect of uncertainty in an organization's environment will be addressed.

2.2. Accountability in health care

Accountability is defined as having to be answerable to someone for meeting defined objectives (Deber & Schwartz, 2011; Emanuel & Emanuel, 1996; Frink & Klimoski, 2004; Marmor & Morone, 1980), sometimes including a consequence for not doing so (Brinkerhoff, 2003; Frink & Klimoski, 2004; Shortt & MacDonald, 2002). Accountability has been in the forefront of many discussions about health care, including the for-profit and not-for-profit sectors (Kearns, 1994). Emanuel and Emanuel (1996) identified accountability as an issue of importance in health care, and specifically in the acute care hospital sector, where it is sought by “patients, the public and the government” (Ontario Public Hospitals Steering Committee, 1992). Accountability continues to be focused on as a way to enhance the transparency of a “health care system while ensuring that health care remains affordable” (First Ministers, 2003). The definition shows that for accountability to be clear those being held accountable must know what they are accountable for (responsibilities, measures, and targets), to whom they are accountable (Brown et al., 2006b; Fooks & Maslove, 2004), and how they will be held accountable (specific expectations and any sanctions) (Emanuel & Emanuel, 1996; Fooks & Maslove, 2004). Each of these elements of accountability will be discussed below.

2.2.1. Accountability for what

The first dimension of accountability is for what an organization is being held accountable. The literature identifies three main types or objectives (the “whats”) of accountability: financial, performance, and political/democratic (Brinkerhoff, 2003; 2004). *Financial accountability* involves “allocation, disbursement, and utilization of financial resources, using the tools of auditing, budgeting, and accounting” (Brinkerhoff, 2003; 2004). This type of accountability is usually the first to be focused on, especially when public funds are involved. Its purpose is to mitigate the misuse of public resources and to ensure procedural compliance for the proper usage of funds by those receiving public funds for the provision of specified activities. Financial accountability and cost control is often the focus of studies of accountability in health care (Jones, 2002; Kane & Magnus, 2001; Pettersen, 1999). Historically, Ontario’s hospital boards have focused mainly on financial accountability (Quigley & Scott, 2004). Financial accountability is not new in Ontario’s acute care hospital sector; hospitals have always been held accountable to “patients, the public and the government” for the use of public funds (Ontario Public Hospitals Steering Committee, 1992).

The second objective of accountability is for performance. *Performance accountability* involves the use of agreed-upon performance targets and the demonstration of performance with respect to these targets (Brinkerhoff, 2003; 2004). Performance measurement is multi-faceted, including measurement in areas such as financial performance, access to care, patient satisfaction (Lemieux-Charles et al., 2003), and quality (Institute of Medicine, 2001). Performance accountability can promote improved delivery of health care services through the use of feedback and learning (Brinkerhoff, 2004). Feedback has been shown to be important for the success of performance improvement in healthcare organizations (Bradley et al., 2004; Moullin, 2004; Schade et al., 2004). Organizations need to receive feedback in order to know how they are performing, whether they are meeting accountability criteria, and to know that the data they provide is being used to improve health care services. Performance accountability is linked to financial accountability through the allocation of financing for the delivery of goods and services; however, performance accountability focuses on results or outcomes (an important “what” for health care) and not simply on procedural compliance (the process) (Brinkerhoff, 2003; Brinkerhoff, 2004; Chassin et al., 2010).

Increasingly scarce funding for health care and greater consumer expectations has led to a greater focus on accountability for performance (Lemieux-Charles et al., 2003), both in Canada and internationally. The US and the UK are two jurisdictions that provide examples of health care providers being held to account for performance (Leggat et al., 1998). The literature on the use of performance assessment for accountability recognizes that performance is multidimensional (Baker et al., 1998; Baker & Pink, 1995; Kaplan, 2001; Venkatraman & Ramanujan, 1986), and of interest to a wide group of stakeholders who hold organizations accountable (Leggat et al., 1998). Since the early 1980s, the performance of organizations has been increasingly focused on. Performance measures for hospitals in the UK began with a focus on activities and costs, expanding to include clinical aspects of care in the 1990s (Smee, 2002). The importance of seeking accountability for more than funding has also been identified by the Canadian Healthcare Association (CHA) (CHA, 2001). Increasing the dimensions of accountability requires that the objectives (or purpose) be clear (Marmor & Morone, 1980; Office of the Auditor General of British Columbia, 2003). Clear objectives can be achieved by using performance targets for accountability; examples include National Health System (NHS) trusts in England (Bevan & Hood, 2006) and hospitals in the US (Institute of Medicine, 2001; Jha et al., 2005; Lindenauer et al., 2007).

Another issue in performance accountability is that organizations may be held accountable for their role in the achievement of health system goals, not just their own organizational goals. In Canada, for example, the provincial government is not involved in the delivery of health care services and is too far from the point of service provision to make all decisions on local accountability. Therefore, holding hospitals accountable for their performance is necessary because their activities are necessary for the health system to accomplish its goals (MacLeod & Closson, 2013). A priori, organizational goals may or may not align with health system goals (Brown et al., 2006a) such as increasing access to, and the quality, equity, and efficiency of health care services. Misalignment between organizational and health system goals is more likely when the health system's or organization's focus, goals, and/or strategy is unclear. Lack of clarity makes it difficult for the health system to achieve its goals and creates uncertainty about the criteria for which hospitals are being held to account.

In order to increase the clarity of system goals and alignment, specific measures, targets, or metrics for assessing performance can be used (British Columbia Ministry of Health, 2005; MacLeod & Closson, 2013; Office of the Auditor General of British Columbia, 2003). As well, section 14 of Ontario's *Local Health System Integration Act*, 2006 states that the "Minister shall develop a provincial strategic plan for the health system that includes a vision, priorities and strategic directions for the health system and make copies of it available to the public at the offices of the Ministry." This legislation does not specify when a strategy should be developed, how often it should be updated, or to whom the MOHLTC should deliver the strategic plan. At the time of writing, the government has not delivered on this strategic plan. This makes it challenging for organizations to align their priorities with the health system's strategy.

The final type of accountability is *political/democratic*. This type of accountability concentrates on ensuring that the government represents citizens' interests and responds to their needs and concerns, including those related to health care issues (Brinkerhoff, 2004). Citizens are interested in where their tax dollars are spent (by both providers and governments), and whether improvements have been made in quality, access, appropriateness, and equity of health care (Brown et al., 2006b; Kushner & Rachlis, 1996). Provision of this information for accountability purposes increases citizens' trust that their government (and by extension, the health care system) is acting ethically and honestly, with integrity and professional responsibility, and according to national values and culture (Brinkerhoff, 2004). When health care is delivered and/or financed by the government, political/democratic accountability is demonstrated by governmental oversight of ministers and other agency heads linked to health care, and the government's attempts to correct market failures endemic to health care through regulation and resource allocation (Brinkerhoff, 2004). Political/democratic accountability is linked to performance accountability through criteria related to meeting citizens' needs, especially targets for service volumes and access, including wait times (Brinkerhoff, 2004).

2.2.2. Accountability to whom

Accountability necessitates a relationship between those making decisions and those affected by the decisions (Fooks & Maslove, 2004). In health care, this relationship will differ depending on how the health care system is organized and who is providing the health care service. As outlined in chapter one, the focus of this thesis is on acute care hospitals in Ontario. These organizations provide their services under a "public-contract model" where independent private providers (not-

for-profit acute care hospitals) receive their revenues from public payers (the government or government agency) (Docteur & Oxley, 2003). Under the public-contract model, acute care hospitals may be accountable to the government and/or any agencies appointed by the government. In a publicly funded health care system, as found in Ontario, health care organizations are also accountable to their communities, consumers (or patients), and the broader tax-paying public. Health care organizations may also be held accountable for performance expectations passed onto them by the government and regional governing bodies (such as Local Health Integration Networks) that are held to account for other expectations by the government (Lemieux-Charles et al., 2003).

These multiple accountability relationships and levels of accountability create increased pressure for organizations to demonstrate accountability. The “web of accountability” arising from multiple relationships implicitly accepts multiple, overlapping accountability relationships as a way to hold organizations accountable for their performance (Johnston & Romzek, 1999). The multidimensionality of and numerous stakeholders involved in accountability may increase the complexity of accountability for performance as organizations are held to account for performance expectations that are diverse, changing, and possibly contradictory (Freeman, 2002; Johnston & Romzek, 1999). Dealing with multiple accountability relationships is challenging for organizations because different accountability initiatives and reporting requirements can compete with each other (CHA, 2001), possibly constricting accountability efforts. If expectations are clearly communicated and linked to a system strategy the multiple initiatives can be simplified or integrated, and accountability relationships strengthened (Brown et al., 2006b; Office of the Auditor General of British Columbia, 2003).

One typology defines four types of accountability relationships based on how autonomous the organization is (high or low) and where the accountability expectations originate from (internal or external): hierarchical, legal, political, and professional (Johnston & Romzek, 1999). This typology defines autonomy as the amount of control an organization has over its actions, and its independence from a source of control (e.g., government). Johnston and Romzek (1999) define hierarchical accountability relationships as being “based on obedience to higher authorities” (p.387); these use close supervision for meeting standards for performance. Hierarchical accountability occurs when organizations have a low degree of autonomy and expectations are

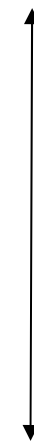
from internal sources. “Legal accountability relationships emphasize compliance and detailed, external oversight to check on performance” (Johnston & Romzek, 1999, p.387); they occur when organizations have low autonomy, but expectations are from external sources. Contracts and audits are used in these types of accountability relationships. Under political accountability expectations come from external sources, but organizations have higher autonomy, giving them the discretion and choice about whether and how to respond. Patient satisfaction measures within health care organizations would be considered an example of a political accountability relationship. Professional accountability relationships are common in health care; organizations have high autonomy and are accountable for performance standards derived from professional norms and best practices. These expectations are from internal sources (within the health sector).

This study focuses on organizational accountability to expectations external to the organization, but possibly internal to a broader network (e.g., health region). This type of accountability relationship falls into both the legal and political typologies because the level of autonomy the organization has can be low (i.e., legal) or higher (i.e., political) depending on for what the organization is being held to account. Johnston and Romzek (1999) describe internal expectations associated with hierarchical and professional accountability relationships as those within the organization; these are beyond the scope of this study.

2.2.3. Instruments to achieve accountability

Another aspect of accountability is how it is sought. Governments use policy instruments as a way to achieve a defined political objective or to address a public problem (Deber & Schwartz, 2011; Doern & Phidd, 1992; Howlett et al., 2009; Salamon, 2002). Many instruments and their categorizations are available in political science literature; a simple classification is found in Doern and Phidd (1992), similarly noted by Preker et al. (2007) and Howlett et al. (2009). It places the available instruments on a continuum of government involvement, or intrusiveness, ranging from the lowest (exhortation/information), to the highest (direct government provision). Table 2.1 provides examples of specific policy instruments used in health care that tie to Doern and Phidd’s (1992) general categories of instruments. This list is not exhaustive and none of the policy instruments is mutually exclusive; they can be used individually or in combination. As well, not all instruments listed will be used.

Table 2.1 Instruments of public action that can be used for accountability in health care

<i>Category of Policy Instrument</i>	<i>Examples of Specific Instruments</i>	<i>Level of Government Involvement or Coercion</i>
Exhortation/Information	Information to encourage provider behaviour that improves health outcomes: - Accreditation information - Clinical (best) practice guidelines - Public performance reporting - Benchmarking/performance indicators - Labelling/ recognition/ reputation	<div style="text-align: center;"> Low  High </div>
Expenditure	Allocation of public funds	
	Subsidies	
	Financial incentives	
	Fines/penalties	
Regulation (influence organization activities)	Legislation/ laws	
	Contracts/accountability agreements	
	Inspections/Accreditation requirements	
	Delegated or self-regulation	
	Rules/Enforcement	
Public provision	Direct government ownership/ production/ provision	

In the case of accountability for performance, it has been hypothesized that the success of policy instruments used and the choice of what is monitored may be affected by the measurability of the good or service (Deber & Schwartz, 2011). *Measurability* is defined by Preker et al. (2000) as “the precision with which inputs, processes, outputs and outcomes of particular goods or services can be measured” (p.782). It is easier to ensure high quality goods or services when outputs can be easily and accurately measured (Johnston & Romzek, 1999). *Controllability* is another issue that arises when organizations are held accountable for performance, particularly when the organization may not have the necessary levers to meet performance targets (outcomes). The measured performance of an organization can be impacted by the actions of other organizations in the health care system and by inherent aspects of health status (e.g., genetics, individual choice with respect to health and health care decisions). Because performance can be affected by other aspects beyond the hospital’s control, the hospital may be limited in its ability to influence the measured outcome and meet requirements, possibly leading to penalties or sanctions (Campbell, 2002). Some argue that organizations should only be held accountable for factors or performance measures under their control (Freeman, 2002; McGlynn & Asch, 1998). Measurability and controllability are challenging in the health care sector because some outcomes (which may be the focus of measures) can be poor even if the process (under the

control of the organization) is high quality. For this reason, outcomes are not always the focus of performance measurement.

As noted by Doern and Phidd (1992), the *exhortation/information* policy instrument relies on the assumption that health care organizations want to provide high quality care, and if provided with the information they will voluntarily change their activities. One mechanism is hospital accreditation, which provides hospitals with information in the form of guidelines to follow (e.g., required organizational practices). Accreditation by Accreditation Canada is voluntary; however, First Nations' facilities, university-affiliated hospitals (i.e., teaching hospitals), and institutions in Quebec (since 2005) are required to be accredited. Consequently, 99 percent of acute care hospitals in Canada are accredited (Pomey et al., 2010). Another example is the dissemination of best practice guidelines to health care providers. Linking best practice guidelines to the strategy, expectations, and/or goals of the larger health system (e.g., increased quality and patient safety) may ensure that information being collected and reported is relevant; potentially increasing the likelihood of improved health system performance and accomplishment of its goals (Brown et al., 2005b; Brown et al., 2006a; Veillard et al., 2012).

While information provision in the form of performance reporting is widely accepted as a policy instrument to improve performance (Brown et al., 2012), it does not guarantee accountability (Brown et al., 2006b; MacLeod & Closson, 2013). Effective exchange and public reporting of information is dependent upon clearly defined roles for accountability and upon organizations having the necessary information technology and decision support to provide accurate information (Baker & Pink, 1995).

Expenditure policy instruments are commonly used by governments, which can use their ability to collect and disburse funds (Howlett et al., 2009). The provision of financial resources can provide an incentive for organizations receiving funds to engage in desired activities. The more government funding an organization receives the more likely it will follow the government's wishes (Howlett et al., 2009). Financial incentives can be positive (carrots) or negative (sticks). Referring to contracts with private providers, Brinkerhoff (2004) stated, "purchasers of services... are able to use their clout to exercise sanctions...through contracting arrangements. Provider payment systems can be important mechanisms for enforcing increased ... accountability" (p.373).

The *regulation* policy instrument is also commonly used in health care. Governments use regulation to prescribe requirements that must be complied with; non-compliance may result in a penalty (Howlett et al., 2009). Regulation can include other policy instruments. For example, Quebec has led other Canadian provinces by requiring its hospitals to make accreditation information publicly available (Born & Laupacis, 2011), increasing accountability to the public. Governments can also use delegated regulation in which non-governmental actors regulate themselves, such as the licensing monopolies given to many self-regulating professions in health care. The professions are able to regulate themselves with the permission of the government (Howlett et al., 2009). Table 2.1 indicates that regulation is the most coercive lever the government can use other than becoming the owner, provider, or producer.

The policy instrument of *public provision* does not apply to acute care hospitals in Ontario, but does in other sectors. For example, in education the provincial government can require teachers to follow a curriculum for which the Minister of Education is responsible for developing (Ontario Ministry of Education, 2009).

2.3. Organizational strategies and priorities

Strategy is defined as “the plans and activities developed by an organization in pursuit of its goals and objectives, particularly in regard to positioning itself to meet external environmental demands” (Shortell et al., 1985, p.220). *Strategic decisions* are “concerned with defining the long-term relationship between the organization and its environment” (Shortell et al., 1985, p.221). Many organizations (including those in health care) begin strategic planning by establishing strategic goals based on identified strategic issues (Paul et al., 2006; Zuckerman, 2005). *Strategic issues* are defined as “fundamental policy questions or critical challenges affecting the organization’s mandates, mission, and values, product or service level and mix, clients, users or payers, costs, financing, organization, or management” (Bryson 2011, p.55).

The literature on strategy focuses mainly on for-profit organizations with some literature focused on not-for-profit organizations. The idea of health care providers using strategy to manage external demands has been a more recent development compared to its use in the corporate world (Paul et al., 2006; Zuckerman, 2005). In the past, each hospital’s vision and goals outlined what it wanted to do, provided it with a broad direction, and helped maintain its focus (Swayne et al., 2006, 232). Limited resources led hospital managers to focus strategy formulation on their own

organization without considering the priorities of the broader system (Brown et al., 2006a). A rationale for the use of policy instruments for accountability is that the government wants organizations to engage in strategic responses and prioritization based on the tools used.

2.3.1. Strategic alignment between organizational and external priorities

Organizations formulate strategies according to their own goals and objectives, but also take their external expectations into account (Porter, 1991), meaning that strategies may change as organizations conform to extra-organizational changes. Proenca et al. (2000) demonstrated that hospitals are more likely to conform, align, or cooperate with external expectations (including regulations) and goals that are compatible with their own goals and objectives. The extent of strategic alignment can be affected by the autonomy of the organization, and/or whether its independence is “sufficient to permit ... [it] to work out and maintain a distinctive identity” (Selznick 1957, p.121). Organizations focused on autonomy are less likely to align with external expectations, making coordination of services provided by different organizations problematic (Brooks & Miljan, 2003). Coordination of services (or integration) is an issue in the health care system where organizations have differing levels of autonomy (based on ownership, presence of an independent corporate board, and/or extent of government regulation). Organizational alignment with external expectations will depend in part on its autonomy and the coerciveness of the policy instrument (see Table 2.1).

Hospitals have been found to engage in strategic planning; strategies may be formulated in response to environmental changes (Zajac & Shortell, 1989) and the policy instruments used. Environmental changes and dependence on resources can affect the autonomy of health care organizations as well as influence their perceptions of strategic issues and priorities. These adjustments to strategic priorities have been found to increase alignment between internal and external (health system) goals, dampening the possible negative effects of regulations and expectations on the hospital (Kumar et al., 2002). Alignment can also mitigate tensions that may arise between organizational and system level strategies (Brown et al., 2006a), creating increased value for the system (Bevan, 2006; Lomas, 2003; Porter & Teisberg, 2004). Benefits can also occur at the organizational level when alignment (or cooperation) is increased. Organizational performance is more likely to improve when organizational priorities fit with those of its environment compared to when the fit is poor (Lamont et al., 1993).

External requirements can involve a performance measurement aspect; this can lead organizations to focus on system strategies because what gets measured provides a focus for activities and behaviour (Pfeffer & Salancik, 1978; Veillard et al., 2010). The use of performance indicators to measure progress towards organizational and system goals can reveal benefits accrued at the organizational and system levels (Walston & Chou, 2012). Performance indicators can also help determine the value obtained for the system and the level of organizational “buy-in” occurring. Organizational responses to external governance around patient safety were studied in the UK by Ramsay et al. (2010). In their study, external governance bodies used performance targets for measures that were important to the public, easily measurable, clearly defined, and used readily available data. The focus was on outcomes and data. Ramsay et al. (2010) found that when data is easily obtained (indicators are easily measured, such as for health care acquired infections), organizational management of the performance indicator cascaded down to front-line staff, and into organizational strategy and scorecards that were used by management to ensure the hospital complied with external requirements. Conversely, they found that medication errors (not as easily measured) were not used at the broader organizational level as a governance tool or as a key component of the organization’s strategy.

2.3.2. Strategic responses to regulation

As noted above, a policy instrument often used by governments to direct organizational strategy and prioritization is regulation; it can direct organizational responses in a specified way. Zajac and Shortell (1989) found that in the face of an environmental change or strong environmental stimuli, organizations respond in a sector-wide pattern or direction. Cook et al. (1983, p.195) conceptualized organizational responses to varying intensities of regulation based on four dimensions: 1) the scope of the regulation, or how much of the hospital’s behaviour is constrained by the regulation; 2) the restrictiveness or stringency of the regulation, or the degree to which the hospital’s behaviour is constrained; 3) the degree of uncertainty created by the regulatory process, or the extent and frequency of change to the regulations and associated processes (this will be addressed in section 2.6); and 4) the duration of the regulation, or how long it has been in existence. Regulatory intensity increases as scope, restrictiveness, uncertainty, and duration increase.

The two main organizational responses to regulation focused on by Cook et al. (1983) are adaptation and selection. *Adaptation* involves organizations making changes in order to adapt to

changing environmental conditions. *Selection* emphasizes the constraints put on organizational responses by their environment, limiting their ability to adapt. Organizations facing increasing regulations can adapt by modifying internal structures, processes or strategies (Cook et al., 1983). Internal changes can occur at different levels of the organization (institutional, managerial, and technical). The institutional level is the relationship between a hospital and other organizations such as the government, regional bodies (e.g., Ontario's Local Health Integration Networks), and other arms-length government agencies (e.g., Health Quality Ontario) as outlined in section 1.3. The managerial level is how a hospital procures and allocates resources within the organization (usually decided by the hospital board, executives, and other senior managers). The technical level is involved with the delivery of services and products (e.g., clinical and frontline staff, and mid-level managers).

2.3.3. Constraints to strategies and buffers from regulation

A structured environment can constrain organizations' choice and prioritization of strategies. These constraints, or barriers, "reduce the range of options and even highlight particular choices that might be deemed 'acceptable' or 'desirable' at a given point in time" (Luke & Walston, 2003, p.303). Luke and Walston (2003) identified a number of institutional barriers that may constrain hospital strategies, two of which are mission-strategy conflicts and multilayered policy oversight. Mission-strategy conflicts may arise when community values create a tradition that constrains strategies and priorities of hospitals. These "community roots" (p.318) may even constrain inter-organizational or regional strategies in health systems. Multilayered policy oversight conflicts may arise from increasing external demands placed on hospitals by multiple sources such as legislation, regulations, accreditation, accountability, and reporting requirements. These institutional barriers affect hospitals' choice, perceptions, and prioritization of strategies.

Organizations may consider constraints as negative because their choice of responses may be limited, possibly affecting an organization's ability to adapt effectively to its environment. Constraints can also be useful to an organization because constraints can facilitate or streamline the decision making process by limiting the organization's choice of responses (Luke & Walston, 2003; Pfeffer & Salancik, 1978). In this way, constraints can provide organizations with greater focus and direction.

Constraints and environmental changes may not lead to uniform organizational responses because some organizations are buffered from constraints and/or changes (Pfeffer & Salancik, 1978). Buffers can decrease the tension between the organization and its environment, and reduce the burden of external demands or requirements (e.g., system level demands, strategies, and priorities). Buffers may not be widespread because not all organizations have the same managerial capabilities, and/or technological or human resources (Lemieux-Charles et al., 2003). Cook et al. (1985) note that different types (sizes) of hospitals may have different organizational goals, which will affect their perception of and response to regulations. “For example, teaching hospitals incorporate teaching and research goals in addition to patient care goals. Rural hospitals are concerned primarily with the delivery of a relatively restricted range of services to their communities” (Cook et al., 1985, p.341). The more narrow priorities of small community hospitals may lead to tensions between external requirements and the hospital’s own organizational goals, because external requirements are more likely to align with broad health system goals. Conversely, teaching and large community hospitals may be buffered from tensions faced by small hospitals. Larger hospitals are likely to have broader priorities that align their organizational goals with those of the system, and to implement new tools (e.g., balanced scorecards) before being required (Yap et al., 2005).

2.4. Theories of organizational response

Organizational responses to accountability are affected by the number of sources promoting accountability and the consistency among these sources (Frink & Klimoski, 2004). As well, the stability (or instability) of the demands from these external sources can influence an organization’s perception of what its priorities are and where its focus should be. Literature on organizational behaviour provides a framework to examine how policy instruments used for accountability can influence organizational responses. We discuss two: institutional theory and resource dependence theory.

2.4.1. Institutional theory

Institutional theory helps explain why acute care hospitals, in aggregate, become increasingly similar or make similar decisions (DiMaggio & Powell, 1983). It has been used in the health care sector to explain why there is an increased focus on regional frameworks for performance, including standardized performance indicators for accountability (Lemieux-Charles et al., 2003). The process whereby organizations become increasingly similar or make similar decisions is

referred to as institutional isomorphism (DiMaggio & Powell, 1983). The mechanisms that can lead to institutional isomorphism are coercive isomorphism due to government mandates and a common legal environment; mimetic processes when successful organizations are imitated; and normative pressures resulting from professionalization of clinical and managerial staff through standardized formal education and professional networks that foster organizational norms.

This process of homogenization is more likely in a structured environment as organizations strive to become compatible. Compatibility is driven by the need to be seen as legitimate, even at the expense of efficiency when adopted processes are not customized to the individual organization's capabilities (Lemieux-Charles et al., 2003; Luke & Walston, 2003). Thus, in the presence of uniform pressures (from regulations) and minimal power over these pressures, organizations will respond similarly. Differences in organizational strategies, or responses, in the face of institutional forces would be influenced by the type and intensity of pressures, the organization's goals and interests, its power relative to institutional stakeholders (Proenca et al., 2000), its size, and any buffers the organization has.

2.4.2. Resource dependence theory

DiMaggio and Powell (1983) hypothesized that organizations highly dependent upon a single source of vital resources and that interact with government agencies regularly will respond similarly to external pressures and become more homogenous (p.150). This hypothesis aligns with resource dependence theory, which states that organizations are more likely to survive when they can acquire and maintain essential resources (Pfeffer & Salancik, 1978). Thus, organizations are more likely to respond to a change or requirement that originates from the source of an important resource. Organizations do not react to every change in their environment, otherwise they "would constantly confront potential disaster and need to monitor every change while continually modifying themselves" (Pfeffer & Salancik, 1978, p.13). Constant monitoring and modifications would negatively affect the organization's ability to carry out its purpose due to the time and effort spent on responding to changes in their environment. The more important the resource the more constrained an organization will be in its choice of responses (Pfeffer & Salancik, 1978), because it will need to meet the demands of the source of the resource. This boundary to the organization's response choice set can make it more vulnerable to externally imposed regulations or requirements and decrease its autonomy (Cook et al., 1983).

2.5. Intended and unintended results of tools for accountability

The policy instruments used for accountability, such as information/exhortation, regulation, and expenditure, can lead to desired results as well as unintended consequences.

2.5.1. Intended results: goals of accountability

Policy instruments (Table 2.1) can be used to achieve intended goals of accountability. One example of an intended goal of accountability is ensuring that public funding is used according to agreed purposes (CHA, 2001; Romanow, 2002). Another goal is increasing access to health care services in the form of reduced wait times (Fooks & Maslove, 2004). Performance and quality improvement are also goals of the health system and reasons for the increased focus on accountability, and performance measurement and reporting (Collopy, 2005; Florizone, 2013; Leatherman & McCarthy, 1999).

Provision of information by health care providers (exhortation/information policy instrument) is essential to accomplishing these goals and achieving accountability. The public needs to know where public funding is being spent and what outcomes have been achieved (Romanow, 2002). The goal of ensuring health care continues to be high quality (Romanow, 2002), even as budgets are monitored more closely and volumes of services increase, is challenging and requires the measurement and demonstration of performance, and the provision of information. The information can be in the form of performance data provided to the public or another agency responsible for monitoring, and/or the sharing of best practice information between organizations.

2.5.2. Unintended results of policy instruments

Unintended consequences may also result from the policy instruments used to achieve accountability. While it is possible for unintended consequences to be positive,² literature examining positive unintended consequences in the health care sector is not common.

Unintended consequences are more commonly thought of as negative. They can result from a tension between meeting requirements (e.g., a policy instrument such as performance measurement and public reporting) and providing high quality services, both of which require resources (e.g., financial and/or human). This tension was observed by Lemieux-Charles et al.

² Adam Smith's "invisible hand" is a classic example of a positive unintended consequence that can occur under certain ideal situations: individuals (or organizations) seeking their own gain can promote the public interest without intending to (Donaldson et al. 2005, p.19).

(2003) when organizations voluntarily engaged in accreditation even when doing so diverted scarce resources away from patient care. They noted that this tension was felt most intensely by smaller organizations with fewer resources and poorer information systems. This observation highlights the risk of unintended consequences when any policy instrument is used to achieve a desired outcome such as accountability and its associated goals.

Potential unintended consequences that may result from the use of the policy instruments of performance measurement and public reporting for accountability purposes include tunnel vision, suboptimization, myopia, misrepresentation, misinterpretation, gaming, measure fixation, and ossification (Smith, 1995). These unintended consequences may occur when the goals of the external body desiring accountability (e.g., government) do not align with those of the organization (e.g., an acute care hospital) (Smith, 1995).

Tunnel vision may occur when organizations focus on measuring areas of performance that can be easily quantified and neglect areas of performance or organizational functioning that are more difficult to measure (Smith, 1995; Townley, 2005). When performance measurement schemes are implemented by an external agent, tunnel vision results in organizations “concentrating on areas that are included in the performance indicator scheme, to the exclusion of other important areas” (Goddard et al., 2000). Tunnel vision aligns with the production characteristic of measurability (defined above), as well as with the tendency to focus on measuring performance in areas with available data rather than on other goals and objectives (Freeman, 2002). Financial indicators and service volumes are examples of measures that are easily quantified and thus focused on more than less quantifiable indicators (e.g., system integration).

Regulations can be used to control for tunnel vision by directing attention towards areas of performance that are more challenging to measure. Another way tunnel vision can be controlled for is by identifying and quantifying objectives beyond those obtained from readily available data. Expanding objectives in this manner can lead to a significant increase in the number of quantifiable indicators being used, making it even more difficult to monitor areas that are not measured or quantified, even though important (Smith, 1995). This is especially true in the health care sector where many aspects of health care cannot be easily measured or quantified. Engaging all staff in the objectives of the organization (even if externally mandated) can help address performance in areas that are not easily quantified (Smith, 1995).

Suboptimization is possible when local objectives of an organization are focused on at the expense of the objectives of the health region it resides in or the health system as a whole (Smith, 1995). This unintended consequence can be mitigated by aligning health system goals with organizational goals, and vice versa. When health system objectives and strategies are clearly communicated to organizations it is more likely that organizations will understand the role they play and be able to align their objectives with the broader health system objectives, alleviating some of the tension between organizational and health system priorities.

Myopia may arise when the benefits of organizational activities occur over long time periods; under these circumstances current performance indicators may reflect years of efforts and cannot show the future result of current efforts (Goddard et al., 2000; Smith, 1995). This consequence may be a problem when organizations focus on short-term improvements that are not sustainable rather than making changes that will provide long-term improvements. Focusing on areas that will deliver long-term results may divert resources from areas that will deliver more immediate successes, and vice versa. The tension between the desire for immediate success and the need for long-term success can be mitigated by focusing on the process of achieving long-term objectives rather than focusing only on outcomes (Smith, 1995). Even so, this can result in the focus on measurable aspects of care or even tunnel vision.

Misrepresentation may occur when too much emphasis is put on performance measures, giving organizations an incentive to manipulate their data. This consequence can lead to “creative reporting” when there is flexibility in how data is recorded, measured, or reported (Smith, 1995), or when data quality is poor. Fraud is another possibility, especially when external auditing is limited. If misrepresentation is likely, the government or other agents will need to invest in monitoring which will be an added cost to the system. The costs of monitoring have been identified in the literature on contracting, especially in the case of deliverables not easily measured or quantified (Vining & Globerman, 1999).

Misinterpretation is possible when data quality is low and there is variability in measurement or definitions of the measures used (Freeman, 2002; Smith, 1995). Auditing by external non-governmental parties is one way of minimizing this unintended consequence (Smith, 1995). Even so, data collection is costly and not always considered when choosing indicators, potentially reducing data quality (Freeman, 2002), and leading to misinterpretation.

Gaming is another unintended consequence that may occur when performance measures are used, especially when rewards or financial incentives are involved. It can be a particular concern in the acute care hospital sector (e.g., pay-for-performance). Gaming occurs when the actual behaviour of organizations is manipulated to gain a strategic advantage (Smith, 1995). The organization will weigh the costs of meeting and not meeting a performance criterion, especially when meeting the target influences the target set for the next year. Smith (1995) suggested three ways gaming could be reduced. First, choose targets based on an overall benchmark and not on the organization's historical performance. Second, use a range of performance indicators instead of just one because it is more difficult to game a number of indicators. Finally, recognize that even though current targets may not be met the efforts of the organization may lead to future targets being achieved.

Measure fixation may result when organizations focus on the measure being used, but lose sight of the ultimate objective underlying the use of that measure (Smith, 1995). This unintended consequence can also be considered a type of gaming. The measurement of wait times for surgery or diagnostic imaging are examples of where this unintended consequence can arise. In the UK, surgeons could shorten wait times by delaying when their patient is put on the wait list (equivalent to the decision to treat) until closer to the surgery date (when treatment occurred) (Smith, 1995). A way to mitigate measure fixation is by including broader, but related, measures along with the measure at risk of fixation. An example of a measure to use along with wait times is patient satisfaction, an area increasingly focused on in Ontario's health care system.

Ossification may occur when innovation is inhibited by the focus on performance measures (Smith, 1995). This consequence can be detrimental when organizations cannot respond to environmental changes or challenges or implement innovative practices due to constraints from performance requirements. Smith (1995) suggests the performance indicator framework being used be reviewed annually, but advises against constantly changing the framework.

Policy instruments are used to encourage intended behaviours and outcomes from organizations, but can also lead to unintended consequences. In order to prevent unintended consequences, the policy instruments or their specifications may change periodically, creating an unstable or uncertain environment for organizations. Uncertainty and its effect on organizations are explored in the following section.

2.6. Uncertainty: accountability requirements and strategy

Implementation of strategies and alignment with external goals and priorities becomes more challenging and less likely to occur when an organization's environment is uncertain (Shortell et al., 1985). Even though organizations are guaranteed to experience changes in their environment, the specific changes will not necessarily be known. Organizations will be challenged to implement strategies or innovation because they will not know whether strategies appropriate in the current planning cycle will be obsolete or ineffective in the next (Shortell et al., 1985). This effect of uncertainty increases the importance of communicating health system strategy and using performance measures that align with the strategy (Brown et al., 2006a) because hospitals will be better able to adapt and plan when they know the direction of their environment as controlled by the government (Baker et al., 1990; Cook et al., 1983). When uncertainty is increased, it can be more challenging to hold organizations accountable for external expectations, especially when they can point to factors beyond their control (Government of Ontario, 2008).

2.7. Summary

This chapter reviews the literature that forms the theoretical framework used in this study of the effect of increased accountability requirements on acute care hospitals and how they respond. Accountability in health care is not a new topic, but is increasingly focused on. Policy instruments such as exhortation/information, expenditure, and regulation can be used to hold organizations accountable. These instruments can lead organizations to respond in both desirable and undesirable ways. The literature on organizational behaviour, specifically resource dependence, institutional theory, and organizational strategies, provides the framework of possible acute care hospital responses to the policy instruments used.

Unintended consequences may arise from the use of policy instruments. These consequences can be positive or negative; however, the focus in the literature has been on negative unintended consequences. Unintended consequences may or may not negatively affect the ability of the health system to achieve accountability and other goals. Uncertainty also plays a role in organizational responses. Uncertainty may make it more challenging to hold organizations accountable and for organizations to align with the health system strategy.

To our knowledge, the current body of literature does not adequately address organizational perceptions of the tools used for accountability, or the effect of using multiple policy

instruments. How organizations respond to accountability requirements or the effect of multiple accountabilities on organizational strategic prioritization are also under represented in the existing body of literature. These gaps justify this study, which uses the data and methodology presented in the following chapter.

Chapter 3: Methods

3.1. Introduction

This chapter presents the mixed methods approach used to answer the study's three research questions examining accountability in the acute care hospital sector in Ontario, Canada, and its effect on acute care hospitals' strategic priorities and priority setting. The research design, study population, ethics approval and confidentiality, survey instrument, document selection, interview guide, and methodology for data analysis and synthesis will be described.

3.2. Research design

This study employed a mixed method approach. The rationale for using a mixed methods approach is that it utilizes both quantitative and qualitative data in a single study to provide a better understanding of a research problem than if quantitative and qualitative methods were used alone (Creswell, 2003). This study consisted of two sequential phases: a survey and document analysis, followed by key informant interviews (see below for more description of these data collection methods). This mixed methods design is referred to as sequential explanatory, the purpose of which is to use qualitative findings to expand upon findings from the quantitative portion of the study (Creswell, 2003). Both the quantitative and qualitative data were important for answering the study questions and as such were equally weighted.

The dependent variable was organizational perceptions of strategic priorities and their responses to accountability and reporting requirements. It was measured by responses to the strategic priorities survey and through interviews.

3.2.1. Time frame

This study is bounded by the years 2004 and 2012 (two interviews were carried out in early 2013, but related to the period of 2004 to 2012). This period was chosen because it spanned the years when the focus on accountability increased in Ontario's acute care hospital sector. Data used for this study was collected before and after the creation of Local Health Integration Networks (LHINs) and the introduction of legislated Hospital Service Accountability Agreements (H-SAA), Ministry-LHIN Performance Agreements (MLPA), and Quality Improvement Plans (QIPs). Data from the 2004 acute care hospital Strategic Priority Survey were kindly provided by the researchers on that project (Brown et al., 2005a) to be used as part of this study. Since that time, policy changes were implemented (as noted above), and sufficient

time passed to measure the perceptions of acute care hospitals in Ontario based on their responses to the strategic priorities survey in 2011 and interviews.

3.3. Study population

The participants in this study were acute care hospitals. These hospitals are licensed by their provincial/territorial governments (CIHI, 2012b) to provide short term and intensive medical, surgical, diagnostic and treatment services for in-patients for conditions resulting from injury or illness (CIHI, 2013a). Acute care hospitals are staffed by physicians, nurses, other health professionals, technologists and technicians (Industry Canada, 2011). This study classifies acute care hospitals according to size: small community, large community, and teaching. These classifications, or types, were defined by the Ontario Joint Policy and Planning Committee (JPPC) and are still used by Health Quality Ontario (HQO) even though the JPPC was disbanded in 2009 (HQO, 2012a).

- **Small community hospitals** are acute care hospitals that provide health care services to a single community. Total inpatient acute, complex continuing care and day surgery weighted³ cases are under 2,700 (HRRC & CIHI 2007).
- **Teaching hospitals** are acute and pediatric hospitals that have membership in the Council of Academic Hospitals of Ontario (CAHO). These hospitals provide highly complex patient care, are affiliated with a university, and have significant research activity and postgraduate training (HRRC & CIHI 2007).
- **Large community hospitals** are all other acute care hospitals that are not defined as small or teaching (HRRC & CIHI 2007).

3.3.1. Unit of analysis

The unit of analysis is the organization, specifically the acute care hospital. Responses to the survey were obtained from senior management (often the CEO). Interviews were carried out with up to three of the following individuals in each hospital selected: CEO, Vice-president of Strategy (risk and/or quality improvement), Acting director of corporate planning, Director of strategic projects, Vice-president of Finance, and/or Vice-president or other senior manager responsible for performance reporting (external, required reporting).

3.3.2. Study sample

In the first phase of the study, a document analysis of accountability documents (H-SAA, MLPA, QIPs) was carried out to identify accountability indicators used in Ontario between the

³Weights are from the day surgery comprehensive ambulatory care classification system.

years of 2004 and 2012. During this phase, survey data was also collected from acute care hospitals in the province of Ontario. All acute care hospitals were selected to participate and were sent the strategic priorities questionnaire; thus, randomization was not necessary. The strategic priorities questionnaire had been used previously in 2004. Hospitals that responded in both 2004 and 2011 were included in the final study sample used for analysis. This sample included at least one hospital from each of the fourteen Local Health Integration Networks (LHINs) in Ontario.

Phase two collected additional data via semi-structured interviews from selected hospital executives and health system leaders. Interviews were sought from Chief Executive Officers and up to two other members of senior management at two of each type of acute care hospital (small community, large community, and teaching) from the survey respondents that indicated they were willing to be interviewed. Each acute care hospital participating in the interviews was from a different LHIN. The LHINs are not identified in this study in order to maintain confidentiality of responding hospitals and interviewees. Thirteen interviews were carried out, eleven with hospital executives and two with health system leaders (see section 3.6.2).

3.4. Phase one: Document analysis and strategic priorities survey

In phase one of this research study the documents to be analyzed were collected and the survey distributed to acute care hospitals. This phase also included the analysis of the documents and survey data; more detail is provided below.

3.4.1. Document collection and analysis

Three documents that were introduced between 2004 and 2011 were focused on for the document analysis. At the time of writing, all of these documents are used by the province of Ontario to achieve accountability. They were Ministry-LHIN Performance Agreements (MLPA), Hospital Service Accountability Agreements (H-SAA), and Quality Improvement Plans (QIPs). The H-SAA was introduced in 2005, the MLPA in 2007, and QIPs were mandated for all acute care hospitals in 2010. Each document contained required or recommended criteria that LHINs or acute care hospitals must meet, emphasizing performance expectations for financial indicators, service volumes, patient safety, wait times, and patient experience.

All documents were obtained from Ontario's Ministry of Health and Long-Term Care (MOHLTC), LHIN, and/or acute care hospital websites. The information retrieved from each of these documents included the required or recommended criteria or indicators used from 2005 until the most recent version at the time of writing. The indicators in these documents were used to determine trends over time within each type of document, between each type of document, and over all three documents. Themes were identified based on the trends revealed. These themes were used to provide additional context for the findings of the Strategic Priorities Survey, described in sections 3.4.2 to 3.4.9.

3.4.2. Survey design

The survey used to collect acute care hospital strategic priority data was closely based on the 2004 "Strategic Priorities Questionnaire" (Brown et al., 2005a), a self-administered questionnaire. Based on experience from using the survey in 2004, the 2011 version was shortened and formatting was adjusted while maintaining the content of interest and its appearance to maintain reliability and ensure comparability over time (see Appendix A for a list of changes that were made between the 2004 and 2011 versions). The survey contained both open-ended questions and a matrix of thirty-seven strategic issues that respondents could rate on importance and challenge on a Likert-scale. The scale for importance was from 0 to 3 (0 = not important, 1 = somewhat important, 2 = important, and 3 = very important); for challenge the Likert scale was from 0 to 4 (0 = not a challenge, 1 = somewhat of a challenge, 2 = a challenge, 3 = a major challenge, and 4 = a major challenge not within the organization's control). The Likert scales were the same as the 2004 version so that hospital responses could be compared between the two survey years, before and after policy changes and the restructuring of Ontario's acute care hospital sector (see section 1.3).

3.4.3. Survey reliability and validity

As noted above, the reliability of the survey findings are enhanced by using a survey that had been used previously in 2004 (Brown et al., 2005a) and by comparisons made to the data collected at that time. The interview data elaborates on the survey findings and provides a richer understanding of the impact of accountability and other reporting requirements on acute care hospitals.

The validity of an instrument used to collect data is made up of content validity and construct validity (Creswell, 2003). Content validity ensures that the instrument being used covers the range of items required to study the domain of interest (Creswell, 2003). Construct validity ensures that proper definitions and measures of the variables of interest are used (Creswell, 2003). The content validity of the questionnaire used in this study was obtained through the survey's use in 2004 (Brown et al., 2005a). The second step taken to ensure content validity was consultations with individuals experienced with acute care hospitals and their operations, either through working as senior management at a teaching hospital or through working with the Ontario Hospital Association (OHA). The 2011 survey was also circulated for feedback amongst the committee and research partners⁴ who had experience working with acute care hospitals in Ontario. Feedback from these individuals included adding definitions of vertical integration, horizontal integration, alliance, federation, network, consortium, merger, and for-profit partnerships. Instructions were shortened for the matrix of strategic issues used in the survey.

The final step taken to ensure content validity was to pilot test the survey before it was used in 2011. Acute care hospital Chief Executive Officers (CEOs) were not used for piloting the survey because of the small number of acute care hospitals in Ontario and the desire to survey the entire population of acute care hospitals. The survey was piloted with a convenience sample of one Chief Financial Officer from a large community hospital whom also had previous experience as a CEO at another large community hospital. Survey questions were of interest, easy to understand, and appropriate for the population being studied. A domain and three strategic issues were suggested for inclusion, but were not used for this study because they were not used in 2004 survey.

To assess construct validity of the questionnaire, the thirty-seven strategic issues in the survey were grouped into seven domains (see Appendix B) using the categories in the paper by Brown et al. (2005a).

⁴ This thesis was under the umbrella of a broader study examining approaches to accountability in the health system of Ontario, funded by a PHSI grant from the Canadian Institute for Health Research (Principal Investigator Raisa B. Deber). The broader study assisted by providing contacts with research partners who shared their knowledge of acute care hospital practices useful for this project's research on the impact of accountability requirements on the activities and practices of acute care hospitals in Ontario.

1. Consumer engagement
2. Corporate governance and management
3. Financial efficiency
4. Human resources cultivation
5. Improved information use for decision making
6. Patient care management
7. Service integration and partnerships

Stata (a statistical software program) was used to test the pair-wise correlation between strategic issues within each strategic domain and Cronbach's alpha for the whole domain for articulation, importance, and challenge using the 2011 data (see Appendix B). Cronbach's alpha is often used to assess the reliability of scales. The reliability of a scale with a score of 0.7 is considered acceptable (Nunnally, 1978). The majority of the strategic issues within strategic domains were not correlated with each other and over half of the twenty-one Cronbach alpha values were below 0.7. Only the domains of *Corporate Governance and Management* and *Improved Information Use for Decision Making* had Cronbach alpha scores above 0.7 for articulation, importance, and challenge ratings. Because of the low correlations between strategic issues and the low Cronbach alpha values (some as low as 0.25) the strategic issues can be considered "causal factors." Causal factors directly influence or define the domain (referred to as a latent variable in factor analysis literature). This allows the strategic domains to be treated as indexes (Streiner, 2003). The items (i.e., strategic issues) within an index do not have to have strong correlations as measured by Cronbach's alpha and can be theoretically unrelated (Streiner, 2003). Conversely, the items within a scale are theoretically correlated and have strong correlations as measured by Cronbach's alpha (Streiner, 2003).

As causal factors, the strategic issues within each strategic domain may or may not be correlated, and correlations can change depending on the population being studied. Inconsistent correlations means that the statistics normally used for scales and effect indicators (such as Cronbach's alpha, mean interitem correlation, or factor analysis) are not appropriate for indexes (Streiner, 2003). Thus, even in the case of domains with high Cronbach alpha values, the finding could be a result of the population being surveyed, not necessarily an indication that the domains should be considered scales as opposed to indexes. Because the domains could be considered indexes, standard tests to validate the construct validity of the survey and its domains, such as confirmatory factor analysis, were not carried out. In the case of indexes, the importance of

using underlying theory and prior research to ensure content validity of the survey domains increases (Streiner, 2003). Underlying theory and prior research was used by Brown et al. (2005a) to create the domains and by the researcher for the 2011 version of the survey.

3.4.4. Survey distribution

Survey design theory and distribution was followed as described by Dillman et al. (2009). A personalized “pre-notice” email was sent to all acute care hospital CEOs (n=116) from the thesis supervisor’s email address to inform them of the study being undertaken and that they would receive a survey in the mail within the following week. The email also indicated that the survey had the support of Ontario Hospital Association (especially important because of the survey’s length). Using the supervisor’s email address (a person known to many of the survey recipients) and an endorsement by the OHA were ways to increase the legitimacy of the survey and thus its response rate. Based on the literature⁵ and advice from health services researchers at the University of Toronto experienced with the use of surveys with populations similar to those of this study, paper based mailed surveys were used instead of an online version. Incentives were not provided because of a limited budget and potential ethical problems due to the population being surveyed (Dillman et al., 2009, p.36).

Each hospital CEO received a personalized copy of the survey package (see Appendix C) via postal mail, with a deadline of four weeks to return the completed survey. The survey package contained four items: 1) a paper copy of the survey; 2) a letter of invitation addressed to the hospital CEO; 3) an informed consent letter; and 4) an envelope with sufficient return postage for respondents to return the completed survey and other documents (faxing was another option if participants preferred). The letter of invitation explained the study, thesis project in general, and included the names and signatures of the thesis supervisor, committee members, a researcher involved with the 2004 survey, an acute care hospital executive (research partner), and the PhD candidate. The logo of the Ontario Hospital Association (OHA) was included on the letter of invitation with the OHA’s permission and support, along with the logo of the Institute of Health Policy, Management, and Evaluation⁶ at the University of Toronto. The survey package also

⁵ Dillman et al. (2009, 414) present a table of response rates from surveys to organizations according to survey format. The highest response rate (44%) was obtained using mailed surveys. The next highest response rate (13%) was obtained using web-based surveys, followed by fax (12%).

⁶ The name of the Department of Health Policy, Management and Evaluation was changed to the Institute of Health Policy, Management and Evaluation in early 2012; this did not affect the study or any materials used.

included a letter of informed consent. An electronic version of the survey (fillable PDF) was also made available on the “Approaches to Accountability” website⁷ for ready access, to aid in dissemination to others who may be needed to answer the questions, and in case the paper copy was misplaced.

3.4.5. Response rate

To increase the response rate, multiple contacts were made before and after the surveys were distributed (see Appendix D). The first follow-up reminder note was sent by mail ten days after the survey. This note thanked respondents who had already returned their completed survey and gave the link to an electronic version of the survey. Three weeks after the reminder note (four and a half weeks after survey distribution), an email was sent from the study supervisor’s email account to all CEOs who had not yet responded. The email acknowledged how busy they were and thanked them for participating if the survey was currently in the mail. A link to the electronic version of the email was also given in the email.

Three weeks after the reminder email (eight weeks after survey distribution), hospital CEOs (and/or their assistant) who had not responded received a phone call from the researcher. The phone call inquired about the status of the survey and acknowledged how busy the respondents are. During the conversation, the importance of participating in the survey was emphasized, while also noting the potential benefit to respondents. Potential benefits were that the study was a part of a larger study with many partners from the health system who were interested in the findings from the acute care sector. As well, the survey also provided respondents with a way to communicate issues affecting their organization confidentially. The researcher asked if anything could be done to make it easier to complete and return the survey; whether a new paper copy was needed; or if access to an electronic copy of the survey would be beneficial. The researcher made multiple attempts to speak to the CEO or his/her assistant in person. If not possible, a message was left on their voice mail. After this phone reminder, some CEOs indicated that they still had the paper copy and preferred to deal with it; others wanted the survey (or link to the survey) emailed to them. Eleven weeks after survey distribution, a final phone call was made by the researcher to hospital CEOs and/or their assistants who had not yet responded. Again, multiple

⁷The survey is no longer being distributed and has been removed from the website. The original link for the survey was <http://www.approachesstoaccountability.ca/reports/Stratsurv.pdf>.

attempts were made to speak to the CEO and his/her assistant personally. This phone call was similar to the first phone call, but gave a final date for organizations to respond to the survey.

Once all surveys that would be completed and mailed back were received, response rates were calculated to check for characteristics of respondents (hospital size and LHIN) and to check for any response bias (see chapter five for the response rates and further discussion).

3.4.6. Data entry

Survey data were entered into a spreadsheet as completed surveys were received. If data were missing, an email was sent to the person whose contact information was voluntarily provided in the survey to verify whether the data were purposely omitted or missed. Following up in this manner increased the completeness of the data. Data were entered into a separate spreadsheet by the researcher a second time after all surveys were received. The two datasets were compared and any discrepancies were checked using the original returned survey. This process of checking the data ensured the accuracy of the data in the 2011 dataset.

3.4.7. Combining survey datasets

Once the 2011 dataset was complete, it was combined with the 2004 dataset. Twelve hospitals had merged or joined into alliances with another hospital to create six multi-site health care organizations between 2004 and 2011. For example, Alexandra Hospital and Tillsonburg District Memorial Hospital were treated as separate facilities in 2004, but were led by the same CEO and reported to their LHIN and the MOHLTC as one hospital in 2011. Hospital mergers or alliances meant that the 2004 data for these twelve hospitals needed to be combined to align with the six 2011 hospital organizations (see Appendix E).

Often the 2004 responses to the questions were the same for both hospitals that subsequently merged. When mergers resulted in more than one response to a 2004 survey question the highest numerical response on the Likert scale was used as the response for the 2004 question. The highest response was chosen because it was the most conservative in the case of the hypothesis that there would be shifts in strategic priorities over time, likely in the direction of issues/domains being more important and/or more challenging. The highest response was the least likely to show spurious shifts and bias findings based on survey data.

3.4.8. Scoring of strategic priority domains

The strategic issues asked about in the survey and their groupings within seven domains are listed in Appendix B. All seven domains were used for the purpose of analysis and interpretation. The score for each hospital for each domain was calculated according to equation 3.1 below.

$$\frac{\text{Sum (Hospital score for each issue in the category)}}{\text{Sum (Total possible score for each issue in the category)}} \times 100 \quad (\text{Equation 3.1})$$

The domain scores were then used as the dependent variables for analysis, and hospital type or year was used as the independent variable. This analysis was done to reveal the impact of accountability and reporting requirements on domain scores of acute care hospitals in aggregate, and by sub-group based on the three types of hospital.

3.5. Quantitative data analysis

Quantitative survey data was analyzed according to the methodologies described in the following sections.

3.5.1. Statistical tests

The quantitative data collected by the survey included a subset of hospitals that responded in both survey years. This subset of data is referred to as “balanced” in the literature on panel data. The rest of the data is referred to as unbalanced in that some data was missing for either 2004 or 2011 for at least one organization (Stock & Watson, 2007). Only the balanced subset of data was used for this study in order to minimize volunteer or self-selection bias (Hernan et al., 2004). The data were analyzed using the statistical software program Stata. Analysis-of-variance (ANOVA) techniques were used to investigate differences in the means of all the issues and domains between the two survey years. Data for hospitals that responded in both survey years were analyzed in aggregate and then separated into subgroups based on the three hospital types. Data were also tested for differences between hospital types within a survey year (for both survey years). A five percent level of significance after a Bonferroni correction was used when testing for statistical significance. The Bonferroni correction reduces the chance of failing to reject the null hypothesis when multiple hypotheses are tested on one dataset (Stock & Watson, 2007). The Bonferroni correction is calculated using equation 3.2 below, where α_b is the Bonferroni corrected critical value, α is the desired level of significance and c is the number of comparisons made. For each strategic issue or domain, six comparisons were made when hospitals were

compared by type, and one comparison was made when responses from the two survey years (2011 and 2004) were compared. This means that α_b is 0.02 when hospital types are being compared and 0.05 when comparisons are made between survey years. The statistical software (Stata) carried out this correction so that the p-values are compared to the five percent level of significance, even when the three hospital types are being compared.

$$\alpha_b = \frac{\alpha}{c} \quad (\text{Equation 3.2})$$

The three statistical tests used were ANOVA, Mann-Whitney, and Kruskal-Wallis. ANOVA is a parametric test that can be used on balanced or unbalanced quasi-interval data as collected by the strategic priorities survey; it assumes the distributions are normal. Because of the small population sizes ($n < 10$) in the small community and teaching hospital groups there is not enough data to test the shape of their distributions accurately. For this reason, multiple tests were used to establish the robustness of the results. Kruskal-Wallis is the non-parametric version of ANOVA, and as such does not assume normal distributions. It is most appropriate to use on data without a measurement (or continuous) variable. Mann-Whitney tests whether two independent samples are from populations with the same distribution; it can also be used on both balanced and unbalanced data. A fourth test was the Wilcoxon test; it is the same test as Mann-Whitney, but is limited to balanced data (McDonald, 2009). Using all four statistical tests and comparing their results provided a sensitivity analysis. All tests gave equivalent results so only ANOVA p-values with Bonferroni corrections are reported.

The variance of hospital ratings of strategic issues were compared by year and by hospital type using data from hospitals that responded in both 2004 and 2011. The comparisons were first carried out on individual issues and then carried out on domains. The 2004 data were used to calculate a baseline level of articulation, importance, and challenge for each of the issues and for each domain. The survey data collected in 2011 provided a second measure of the *articulation*, *importance*, and *challenge* of the strategic issues and domains. Analysis of the two years of data together provided a picture of the stability of or shifts in perceptions of strategic priorities.

3.5.2. Response shift bias

Response shift bias can be found in self-report data (Howard & Dailey, 1979). If this bias is present, it may be a limitation of this study. There are three different types of changes that can be

found with the self-report data collected by this survey: 1) alpha change is an unbiased measure of variation between 2004 and 2011; 2) beta change is a result of the respondent changing her interpretation of the instrument or scale being used (e.g., the rating scales of importance and challenge); and 3) gamma change results from a redefinition by the respondent of the phenomenon being measured (the strategic issues) as a result of the intervention being studied (the increased focus on accountability) (Golembiewski et al., 1976; Terborg et al., 1980). Groups of organizations may shift their responses because of real changes (an alpha change) or because of a change in their frame of reference (environment) that is experienced by all organizations simultaneously (Lau et al., 2012).

To test for response shift bias in responding hospitals, data from hospitals responding in both survey years were compared to data from hospitals responding only in 2004 and data from those responding only in 2011. The comparisons were carried out using ANOVA on aggregate data and data grouped by type of hospital (see Appendix F). A five percent level of significance with a Bonferroni correction was used.

3.6. Phase two: Key informant interviews

The second phase of data collection was key informant interviews. Interview data were collected to expand upon findings from the documents and the survey, as well as provide a richer understanding of the effect of accountability requirements and hospital responses.

3.6.1. Interview guide development

The interview guide was developed using information from acute care hospital accountability documents, feedback obtained via collaboration with study partners and executives from the acute care hospital sector, and findings from the strategic priorities survey. The interviews were undertaken to gain a greater understanding of the impact of accountability and reporting requirements on acute care hospitals. The interview guide was piloted on three individuals with experience as an acute care hospital CEO and/or involved with strategy development in acute care hospitals. The purpose of piloting was to ensure individuals understood the questions and issues being addressed. Based on feedback from pilot interviews, changes were made and the interview guide was finalized (see Appendix G).

The schedule was modified after the first four interviews with hospital executives were carried out to include a question asking interviewees to provide an explanation for the survey findings presented in chapter five, specifically why strategic issues were rated as important but less challenging in 2011 when accountability requirements have increased since 2004.

3.6.2. Key-informant interviews

Interviews with hospital executives were carried out between September and December 2012. Key stakeholders were purposively selected from three types of acute care hospitals in Ontario (small community, large community, and teaching). A purposive, non-probability sample of participants was chosen because they met specific criteria (Creswell, 2003; Miles & Huberman, 1994): they had expertise in acute care hospital activities and dealt with accountability requirements. This selection process is consistent with interviewing methodology (Dexter, 2006). Interviews were scheduled by telephone or email. They were carried out with Chief Executive Officers (CEOs) at each of the hospitals approached (two teaching, two large community, and two small community hospitals). Interviews were also carried out with other individuals involved in strategy and meeting accountability and reporting requirements at different levels of the organization (e.g., VP of Finance, Manager of Quality Improvement, and/or Manager of Information Technology). These other individuals were suggested by the CEO. Using a stratified sample ensured a more complete picture of organizational burden and response, and minimized bias (Miles & Huberman, 1994).

The final interview sample consisted of eleven interviews with hospital executives from six acute care hospitals: two teaching, two large community, and two small community hospitals. Hospitals were purposively chosen based on location and type to ensure two of each type of hospital was used (teaching, large community, and small community), and to provide information from different geographic areas (each hospital was from a different LHIN). Interviews were also carried out in early 2013 with two senior health system leaders familiar with Ontario's health care system. Interviews with hospital executives lasted approximately one hour, and those with health system leaders lasted approximately thirty minutes.

Interviews were carried out in the participant's office or by telephone. Prior to the interview, an electronic copy of the interview questions (Appendix G) and consent letter (Appendix H) were sent to the interviewee. Informed consent was provided by all interviewees. Each signed the

consent form and returned to it the interviewer/researcher for face-to-face interviews or electronically if the interview was by telephone (a scanned copy of the signed consent was emailed to the researcher or faxed to her supervisor). All interviewees agreed to be recorded. Interviews were recorded on a password protected digital recording device to ensure accuracy and confidentiality. Interviews were transcribed and the transcriptions were reviewed by the interviewer/researcher.

3.6.3. Interview validity

As recommended when doing key informant interviews, interviewees were sent a transcript of their interview for verification (Dexter, 2006). This verification process strengthened the validity of the interview data because interviewees could review the transcripts for clarity and accuracy, and provide feedback (Dexter, 2006; Miles & Huberman, 1994; Tashakkori & Teddlie, 1998). Only two participants provided feedback after receiving their interview transcripts.

3.6.4. Analysis of qualitative interview data

Qualitative interview data were analyzed utilizing the framework outlined in chapter two. Transcribed interview data were coded by the researcher in Microsoft Word. To validate the coding scheme, a sub-sample of three interviews was coded by both the researcher and a colleague familiar with the theoretical framework. Each coder followed the same coding scheme and the two sets of findings were compared. The majority of codes were the same; when differences occurred, the code definition was modified or a code was added to increase clarity. Comparisons and modifications of the codes were carried out until consensus was achieved. Once the final coding scheme was created, the double coded transcripts were re-coded and all other transcripts were then coded.

The interviews provided more in-depth qualitative data to inform the interpretation of the quantitative findings. Analysis was guided by the literature on organizational response, strategy, and activities when policy instruments are used to increase accountability. Interviews were thematically coded (Creswell, 2003) using predetermined themes based on this literature and themes arising from the interviews (see Appendix I).

3.6.5. Consolidation of quantitative and qualitative data

The quantitative and qualitative data were collected sequentially and analyzed separately (Creswell, 2003). Integration of all findings was carried out during the analysis and interpretation

stage so that the strengths of one method could offset the weaknesses of the other in order to confirm, validate, and enrich the findings (Creswell, 2003; Mason, 2006).

3.7. Ethics and confidentiality

The study was approved by the University of Toronto's Office of Research Ethics on October 28, 2008. The survey was added as an amendment to the original protocol in 2011 and was approved by the Office of Research Ethics on July 29, 2011. Annual renewals of the original protocol were submitted until study completion in 2013.

As indicated in the letter of invitation accompanying the survey, respondents provided consent by returning the completed survey. Prior to being interviewed, interviewees were given an informed consent form that they signed to indicate consent. All survey responses and interviews are confidential. Data was reported in aggregate and by type of acute care hospital ensuring that no respondent was identified, unless the information or material is already in the public domain. Completed surveys and interview transcripts are kept in a secure location and can only be accessed by the research team. Electronic data (including surveys returned electronically) are maintained on a password-protected computer. All data will be destroyed in a manner ensuring confidentiality and privacy after a period of ten years.

Chapter 4: Document Analysis Findings

4.1. Introduction

This chapter presents the findings from the analysis of the accountability documents introduced since 2004 in the province of Ontario to hold acute care hospitals, and regional bodies responsible for allocating funding to acute care hospitals, accountable for their use of public funds. These documents will answer the first research question: *How is accountability of acute care hospitals sought in the province of Ontario and what are the trends over time?* To answer this research question this study examines who is held accountable to whom in the acute care hospital sector, what are they held accountable for (areas of formal accountability), and how are they held accountable (the policy instruments introduced since 2004).

Section 4.2 discusses the use of policy instruments in health care, specifically legislation introduced since 2004 and expenditure tools. Section 4.3 describes the accountability agreements legislated in the province of Ontario since 2005 and Quality Improvement Plans since 2010, and the indicators used in these instruments over time. The documents addressed are Ministry-LHIN Performance Agreements and Hospital Service Accountability Agreements, and Quality Improvement Plans. Section 4.4 will discuss the emerging themes from these documents over time: the increased number of indicators and areas of performance; the expanding focus of accountability; the alignment between the accountability instruments being used, and the challenges revealed. The final section will provide a brief summary of the findings.

4.2. Policy instruments in health care

As noted in section 1.3, acute care hospital services in Canada are provided under a “public-contract model” where private providers (acute care hospitals) provide services financed by public payers (the provincial government or regional payers such as LHINs in Ontario) (Docteur & Oxley, 2003). Within this model, the government uses policy instruments such as legislation and expenditure to influence hospital priorities and increase accountability. The predominant policy instrument used is regulation in the form of **legislation**, to which hospitals must adhere. At the federal level, section 92 of Canada’s Constitution establishes the power of provinces to make laws respecting hospital services. As well, the *Canada Health Act*, 1984 sets out criteria that provinces and territories must follow in order to receive federal funding, including the requirement that provinces insure “medically necessary” services provided by physicians and

hospitals, without providing an operational definition of medically necessary (Rachlis, 1995). Provinces that do not follow the criteria of the *Canada Health Act* risk a financial penalty (Brooks & Miljan, 2003).

Provincial legislation also provides levers that governments can use to influence the priorities of health care providers. Ontario's acute care hospitals are regulated by many pieces of legislation, starting with the *Public Hospitals Act*, 1990, which outlines the governance of acute care hospitals and their activities. The *Commitment to the Future of Medicare Act*, 2004 (CFMA) mandated the use of accountability agreements (essentially contracts) between Ontario's provincial government and acute care hospitals in order to hold hospitals accountable for the use of public funds. The *Local Health System Integration Act*, 2006 (LHSIA) created fourteen geographically defined regional bodies, or Local Health Integration Networks (LHINs) in the province of Ontario, and each is responsible for the accountability agreements with health service providers within their geographical boundaries and allocating public funding from the provincial government to their health service providers. Each LHIN is governed by its own board of directors. The LHSIA also mandated accountability agreements between LHINs and the Ontario Ministry of Health and Long-Term Care (MOHLTC). Through these agreements, LHINs and acute care hospitals are held accountable for maintaining a required level of financial performance while also achieving performance targets (e.g., volume of services provided and some clinical indicators) and reporting this information publicly. The use of performance measurement and public reporting is an example of the use of the *exhortation/information* policy instrument in Ontario's acute care hospital sector.

The creation of LHINs meant that the provincial government no longer entered into direct contracts with acute care hospitals; instead, the government became a steward, responsible for setting provincial strategic direction and priorities (Government of Ontario, 2010a). The government could now focus on setting up financial controls and “exercise an appropriate and legitimate scrutiny of fiscal management and health services delivery through the LHINs” (Government of Ontario, 2010a). Accountability agreements were initially focused on financial management and were used to ensure delivery of care was not compromised as budgets became increasingly constrained over the past decade. In 2010, the umbrella of accountability expanded to emphasize quality and included another agent to which hospitals must report. The *Excellent*

Care for All Act, 2010 (ECFAA) requires each acute care hospital to submit a Quality Improvement Plan (QIP) to Health Quality Ontario (HQP), an arms-length government agency, and to publicly report on quality indicators outlined in the QIP.

The use of funding and financial penalties to direct policy is an example of the *expenditure* policy instrument. Since 1997, the public share of health care spending in Canada has remained around 70 percent (CIHI, 2013b). Current forecasts estimate that health care will use 11.2 percent of Canadian GDP and 11.5 percent of Ontario's GDP in 2013, with hospitals making up the largest percentage of the total public health care budget (38.6 percent nationally and 36.7 percent in Ontario) (CIHI, 2013b). The forecasted results for 2013 are that 91.4 percent of Canadian and 86.5 percent of Ontario hospital expenditures are publicly financed (CIHI, 2013c). The predominance of public funding in the acute care hospital sector emphasizes the strength of the expenditure policy instrument as a lever for the government to use to direct acute care hospitals within the provincial health care system, as identified by Baker et al. (1990).

4.3. Accountability instruments and their indicators

The province of Ontario currently uses three types of *exhortation/information* policy instruments in the acute care hospital sector: Ministry-LHIN Performance Agreements (MLPA), Hospital Service Accountability Agreements (H-SAA), and Quality Improvement Plans (QIP). The first two agreements also utilize the *expenditure* policy instrument in the form of funding tied to meeting expectations. These three documents were focused on for the document analysis in this study because they were introduced between 2004 and 2011 (the years when the strategic priorities survey was used) and are currently used at the time of writing. Hospital Service Accountability Agreements were introduced in 2005, followed by Ministry-LHIN Performance Agreements in 2007. In 2010, Quality Improvement Plans were mandated for all acute care hospitals. Each document contained required or recommended criteria that LHINs or acute care hospitals must meet, emphasizing performance expectations for financial indicators, service volumes, patient safety, wait times, and patient experience. This section outlines each of these documents including a timeline of the measures of performance (i.e., performance indicators) used in each, focusing on performance indicators with targets used for accountability.

All documents were obtained from Ontario's MOHLTC, LHIN, and/or acute care hospital websites. Required or recommended performance indicator criteria used in each document over

time was collected up to the most recent version at the time of writing. Indicator criteria were collected from the H-SAA for the fiscal years 2005-07, 2007-08, 2008-10, 2010-11, 2011-12, 2012-13, and 2013-14; from the MLPA for the fiscal years 2007-08, 2008-09, 2009-10, 2010-11, 2011-12, and 2012-13; and from the QIP for the fiscal years 2011-12, 2012-13, and 2013-14. Table 4.1 provides a brief summary of the three documents.

Table 4.1 Accountability documents analyzed for this study

Accountability document	Accountability document between	Year introduced	Indicators
Ministry-LHIN Performance Agreement	MOHLTC and each LHIN	2007	Required
Hospital Service Accountability Agreement	Each LHIN and each of its respective acute care hospitals	2005	Required
Quality Improvement Plan	Health Quality Ontario and each acute care hospital	2010	Recommended

These documents were used to determine trends over time for each type of document, between each type of document, and over all three documents. Themes were identified based on the trends revealed by the documents and their performance indicators. These findings are discussed below.

4.3.1. Ministry-LHIN Performance Agreement (MLPA)

Beginning in 2007, accountability agreements between each LHIN and the MOHLTC were drafted and signed by the Minister of Health and Long-Term Care and the respective Chair of each LHIN board. These agreements had to be made available publicly on LHIN websites as legislated by the LHSIA and the CFMA. Each agreement is used for a specified period and is revised each fiscal year. From 2007 to 2009, these agreements were referred to as Ministry-LHIN Accountability Agreements (MLAA). They outlined process and operational details; stipulated funding amounts for the LHIN; services, standards and targets that must be achieved; a plan for spending of allocated funds; and expected health and health care system outcomes (Bhasin & Williams, 2007). Through these agreements, LHINs were responsible for allocating funding to designated health service providers within their geographical area, including acute care hospitals.

The MLAA outlined LHIN performance obligations such as financial management; activities and deliverables that LHINs must carry out including reporting requirements; ensuring public

accountability; facilitating integration within the LHIN; and meeting specific targets for performance indicators for financial, service level, and other aspects of health care delivery. LHINs were held to account for all *obligations*, but only performance indicators and the balanced budget requirement (a performance indicator that was part of the financial obligations in the MLAA) had LHIN-specific targets. LHINs that cannot meet performance indicator targets can face consequences ranging from increased reporting requirements to a forced change to LHIN governance (Government of Ontario, 2007).

The main categories of performance indicators are Financial Performance (maintaining an annual balanced budget) and Local Health System Performance. The annual balanced budget requirement held all LHINs to the same target regardless of their location, size, or services offered by their health service providers: total revenue must be greater than or equal to total expenses (Government of Ontario, 2007). Performance indicators used in the MLAA, under the category of Local Health System Performance, held LHINs to LHIN-specific targets and grouped into three sub-categories with corresponding indicators: Access, Quality, and Integration. A fourth sub-category of Sustainability was also included, but no indicators were developed for it.

In 2010, the name of the agreement changed to Ministry-LHIN Performance Agreement (MLPA) to reflect the “evolution of LHINs” and removed process and operational details found in the MLAA (Government of Ontario, 2010a). The MLPA continues to establish “obligations for MOHLTC and LHINs related to ensuring financial accountability, sustainability and performance of the healthcare system,” and remains an accountability agreement as required by the LHSIA (Government of Ontario, 2010a). The introduction to the MLPA emphasizes the financial obligations each LHIN is held to, specifically the balanced budget requirement. Each LHIN “must comply with and manage within these financial rules when planning for and allocating resources as it will help ensure strong financial oversight and effective and efficient management of resources across the local health system” (Government of Ontario, 2010a).

Table 4.2 lists each performance indicator used in the MLAA for all LHINs from 2007 until 2009 and in the MLPA from 2010 to the present. Note that some indicators have been used each year: annual balanced budget; percentage of alternate level of care (ALC) days; 90th percentile

wait times⁸ for cancer surgery, cardiac-bypass procedures, cataract surgery, hip and knee replacement, and diagnostic scans (MRI and CT). The consistent use of these indicators emphasizes the importance of financial accountability, integration issues (as indicated by ALC patients), and wait times for certain services in Ontario's health care system. The wait times focused on are for "priority" services designated in the First Ministers' Meeting between the Federal government and Provincial Premiers in 2003. These priority areas are those for which provinces receive federal wait times reduction funding (Health Canada, 2003). Over time, other indicators used in the MLAA and MLPA have been introduced and/or removed. In 2009, three indicators were removed: readmission rates for acute myocardial infarction (AMI) (the only indicator under the sub-category of Quality); rates of emergency department (ED) visits that could be managed elsewhere; and hospitalization rate for ambulatory care sensitive conditions (ACSC) (both from the sub-category of Integration). Discontinuing these indicators moved the focus away from services that could also be provided by primary care providers, towards a stronger focus on integration issues related to moving patients out of acute care (e.g., percentage of ALC days) and into Long-Term Care (LTC) placement (e.g., median wait time to LTC home placement).

Three indicators were added to the sub-category of Access in the 2009 MLAA: proportion of patients admitted within a length of stay (LOS) target of ≤ 8 hours (among ED patients admitted to acute care); proportion of non-admitted high acuity patients treated within respective LOS targets of ≤ 8 hours for CTAS I-II and ≤ 6 hours for CTAS III; and proportion of non-admitted low acuity patients (CTAS IV-V) treated within LOS target of ≤ 4 hours. They were removed the following year and replaced by three new emergency room (ER) indicators: 90th percentile ER LOS for admitted patients; 90th percentile ER LOS for non-admitted complex (CTAS I-III) patients; and 90th percentile ER LOS for non-admitted minor uncomplicated (CTAS IV-V) patients. These indicators show an increased focus on ED wait time issues in the health system, with the new indicators allowing for LHIN-specific targets instead of system-wide ED LOS times. The use of LHIN-specific targets suggests a recognition that some LHINs perform better on these required measures, but the goal is for all to improve, not just the poor performers.

⁸ Wait time (WT) is the time from the "decision to treat, to time treatment received". The formula is $WT = (\text{Procedure Date}) - (\text{Decision To Treat Date}) - (\text{Patient Unavailable Days})$.

Table 4.2 Ministry-LHIN (Accountability) Performance Agreement Indicators, 2007–2013

Performance Indicators	2007-08 (MLAA)	2008-09 (MLAA)	2009-10 (MLAA)	2010-11 (MLPA)	2011-12 (MLPA)	2012-13 (MLPA)
Financial Requirement						
Annual balanced budget	●●	●●	●●	●●	●●	●●
Local Health System Performance						
Access						
90 th percentile wait times for cancer surgery	●	●	●	●	●●	●●
90 th percentile wait times for cardiac-bypass procedures	●	●	●	●	●●	●●
90 th percentile wait times for cataract surgery	●	●	●	●	●●	●●
90 th percentile wait times for hip replacement	●	●	●	●	●●	●●
90 th percentile wait times for knee replacement	●	●	●	●	●●	●●
90 th percentile wait times for diagnostic MRI scan	●	●	●	●	●●	●●
90 th percentile wait times for diagnostic CT scan	●	●	●	●	●●	●●
Proportion of admitted patients admitted within length of stay (LOS) target of ≤ 8 hours			●			
Proportion of non-admitted high acuity patients treated within respective LOS targets of ≤ 8 hours for CTAS I-II and ≤ 6 hours for CTAS III			●			
Proportion of non-admitted low acuity patients (CTAS IV-V) treated within LOS target of ≤ 4 hours			●			
90 th percentile ER LOS for admitted patients				●	●●	●●
90 th percentile ER LOS for non-admitted complex (CTAS I-III) patients				●	●●	●●
90 th percentile ER LOS for non-admitted minor uncomplicated (CTAS IV-V) patients				●	●●	●●
Quality						
Readmission rates for Acute Myocardial Infarction (AMI)	●	●				
Readmission within 30 days for selected CMGs				●	●	●
Repeat unplanned emergency visits within 30 days for mental health conditions				●	●	●
Repeat unplanned emergency visits within 30 days for substance abuse conditions				●	●	●
Integration						
Percentage of Alternate Level of Care (ALC) days	●	●	●	●	●	●●
Median wait time to long-term care home placement	●	●	●			
Rates of emergency department visits that could be managed elsewhere.	●	●				
Hospitalization rate for ambulatory care sensitive conditions (ACSC)	●	●				
90 th percentile wait time for CCAC in-home services				●	●	●

● = an indicator categorized as a performance indicator in the Ministry-LHIN (Accountability) Performance Agreement (MLAA/MLPA)

●● = an indicator used in both MLAA/MLPA and Hospital Service Accountability Agreement (H-SAA or HAA)

The 2010 MLPA also removed the sub-category labels of Access, Quality, Integration, and Sustainability, leaving the focus on the broader categorization of Local Health System Performance. Another four indicators were added in 2010. The addition of all-cause readmission within 30 days for selected case-mix groups (CMGs) filled the gap left by the removal of

‘readmission rates for AMI’ in 2009. Examples of CMGs included are congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), diabetes, pneumonia, stroke, cardiac CMGs, and gastrointestinal CMGs (MOHLTC, 2011c). Two of the newly added indicators in 2010 were for the ER (repeat unplanned emergency visits within 30 days for mental health conditions; and repeat unplanned emergency visits within 30 days for substance abuse conditions). These new ER indicators measure performance for conditions that could be managed outside an acute care setting in the community, thus emphasizing the issue of integration and a system of health care within the LHIN. The new indicators also show an increased health system emphasis on mental health and substance abuse.

The fourth indicator added to the 2010 MLPA was ‘90th percentile wait time for Community Care Access Centre (CCAC) in-home services’, where 90th percentile means the point at which nine out of ten patients received their treatment. In 2010, ‘median wait time to long-term care home placement’ was removed as an indicator in the MLPA. Removing this indicator meant that ‘percentage of ALC days’ remained the only indicator still being used from the original group of Integration indicators in 2007, the year MLAA were introduced. The newly added CCAC wait time indicator may be a replacement for the three previously discontinued Integration indicators. As such, it emphasized the increased focus on integration of hospital performance with community-based providers. It also aligns with the health system trend towards moving health care from acute care into the community (Deber & Allin, in press), and the aging at home strategy of the MOHLTC that is being led by each LHIN (LHIN, 2008).

The trends revealed by the indicators used in the MLPA over time indicated three main shifts that happened together (beginning in 2010-11). The first one was towards a greater emphasis on access. The second shift emphasizes quality of care. Finally, a shift towards a focus on access to care provided in the community is apparent.

4.3.2. Hospital Service Accountability Agreement (H-SAA)

Hospital accountability agreements are mandated by the *Commitment to the Future of Medicare Act*, 2004 (CFMA) prior to the creation of LHINs in 2006. These agreements had to be publicly available on hospital websites as legislated by the CFMA and the LHSIA. They were originally established between the government (the MOHLTC) and each acute care hospital beginning in 2005-06 fiscal year. Starting in 2007, after the creation of LHINs, each Hospital Accountability

Agreement (HAA) was transferred from the MOHLTC to each hospital's respective LHIN. This transfer gave LHINs the authority to allocate funding to acute care hospitals under the condition that hospitals meet the obligations in the HAA (Government of Ontario, 2006). In 2008 HAA were renamed Hospital Service Accountability Agreements (H-SAA).

The accountability agreements for acute care hospitals were intended to involve "joint planning and negotiation, collaborative problem-solving, and continuous improvement" (MOHLTC, 2005). They set out obligations for financial performance, reporting, service volumes and other measures of hospital performance, and use of funding by acute care hospitals all while achieving balanced budgets (Reeleder et al., 2006). The obligations for service volumes and performance indicators (clinical and financial) have specified targets each hospital is held accountable for (OHQC & JPPC, 2008). Some of these targets are the same for all acute care hospitals, regardless of their size or location. Other targets are hospital-specific and decided upon during negotiations between the hospital and its LHIN.

In the 2011-12 H-SAA, the set of performance indicators was renamed accountability indicators; this latter term will be used throughout this thesis to refer to these indicators. Performance indicator will be used more broadly to refer to all measures of hospital (and LHIN) performance and global volumes provided in the Indicator Technical Specifications documents (LHIN Collaborative, 2012; LHIN, 2013). Table 4.3 lists the performance indicators included in the hospital accountability agreements from 2005-06 to the present time. The two main categories of performance indicators are Service Volumes (including global volumes) and Accountability Indicators. The latter are grouped by the H-SAA into two categories: organizational health and person experience. Within organizational health are financial indicators and within person experience are sub-categories of 90th percentile ER LOS; 90th percentile wait times (the wait time nine out of ten patients experience from the point of decision-to-treat to time treatment received), and hospital acquired infections.

Table 4.3 shows the length of time each H-SAA or amending agreement is in effect and the indicators used in each. The first accountability agreements between the MOHLTC and acute care hospitals, from 2005-06 to 2006-07, contained thirteen accountability indicators, nine of which related to global volumes. Each global volume indicator had a performance target that was negotiated on an individual basis between each acute care hospital and its LHIN (based on the

hospital's historical activity). Two indicators used in the original HAA dealt with organizational health, specifically total margin and current ratio. Total margin measures the percent by which a hospital's total revenues differs from its total expenses, excluding the impact of facility amortization (land, building and building service equipment) in a given year. It is calculated as total revenue subtracted by total expenses, all divided by total revenue (LHIN, 2013). Current ratio measures the number of times a hospital's short-term obligations can be paid using the hospital's short-term assets. It is calculated as current assets divided by current liabilities (LHIN, 2013). If the current assets of a hospital are more than twice the current liabilities the hospital is generally considered to have good short-term financial strength.

Unlike the hospital specific targets used for global volume indicators, both financial indicators held all hospitals to a standard performance target set by the province, regardless of the hospital's size, location, or services provided. The provincial-wide target for total margin is zero percent. This target means that by signing the accountability agreement each acute care hospital agreed to provide the service levels negotiated with the LHIN while maintaining an annual balanced budget (total revenues must be equal to total expenses). The provincial-wide target for current ratio is 0.8 to 2.0 for all acute care hospitals.

The indicators used in H-SAA were often changed; however, nine of the thirteen indicators used in the original HAA were retained in each agreement (see Table 4.3). The nine indicators fell into two categories: service volumes and organizational health. Seven indicators dealt with global volumes (ambulatory care visits, total acute activity, complex continuing care patient days, inpatient mental health patient days, inpatient rehabilitation patient days, elderly capital assistance program inpatient days, and emergency department visits) and two indicators dealt with organizational financial indicators (total margin and current ratio).

In 2007-08, the two length of stay (LOS) indicators were removed (see Table 4.3). Percentage of chronic patients with new stage two or greater skin ulcers was introduced as an indicator for hospitals with complex continuing care patients (some acute care hospitals have chronic care beds for these patients). The 2008-10 H-SAA retained all indicators and expanded the list of CMGs used for readmissions to the same hospital, indicating a broader focus on quality of care.

Table 4.3 Indicators used in Hospital (Service) Accountability Agreements, 2005 – 2014

PERFORMANCE INDICATORS (See Appendix J for definitions)	2005-07 (HAA)	2007-08 (HAA)	2008-10 (H-SAA)	2010-11 (H-SAA)	2011-12 (H-SAA)	2012-13 (H-SAA)	2013-14 (H-SAA)
SERVICE VOLUMES							
<i>Global Volumes</i>							
Relative acute length of stay for select CMG	●						
Relative total acute length of stay	●						
Ambulatory care visits	●	●	●	●	●	●	●
Total acute activity	●	●	●	●	●	●	●
Complex continuing care RUG weighted patient days	●	●	●	●	●	●	●
Inpatient mental health* weighted patient days	●	●	●	●	●	●	●
ELDCAP inpatient days	●	●	●	●	●	●	●
Rehabilitation* inpatient days (weighted cases)	●	●	●	●	●	●	●
Emergency department visits (weighted cases)	●	●	●	●	●	●	●
ACCOUNTABILITY INDICATORS							
ORGANIZATIONAL HEALTH (efficient, appropriately resourced, employee experience, governance)							
Percentage of full-time nurses	●	●	●				
<i>Financial indicators</i>							
Current ratio	●	●	●	●	●	●	●
Total margin	●	●●	●●	●●	●●	●●	●●
PERSON EXPERIENCE (access, safe, effective, person-centred)							
Percentage of chronic patients with new ≥ stage 2 skin ulcers		●	●				
Rate of readmission to own facility for select CMGs	●	●	●	X	X	X	X
<i>90th percentile ER LOS for patients who are</i>							
Admitted				X	●●	●●	●●
Non-admitted complex (CTAS I-III)				X	●●	●●	●●
Non-admitted minor uncomplicated (CTAS IV-V)				X	●●	●●	●●
<i>90th Percentile Wait Times for*</i>							
Cancer surgery		X	X	X	●●	●●	●●
Cardiac bypass surgery		X	X	X	●●	●●	●●
Cataract surgery		X	X	X	●●	●●	●●
Hip joint replacement surgery		X	X	X	●●	●●	●●
Knee joint replacement surgery		X	X	X	●●	●●	●●
Diagnostic MRI scan		X	X	X	●●	●●	●●
Diagnostic CT scan		X	X	X	●●	●●	●●
<i>Hospital Acquired Infections*</i>							
Cases of VAP						●	●
Central-line infection rate						●	●
Rates of Clostridium difficile						●	●
Rates of VRE						●	●
Rates of MRSA						●	●
SYSTEM INTEGRATION/SYSTEM PERSPECTIVE (integration, community engagement, e-health)							
% of alternative level of care (ALC) days		X	X	X	X	●●	●●

* = Not all hospitals provide these services, their targets = 0

● = an indicator categorized as a performance indicator in the HAA/H-SAA

●● = an indicator used in both the HAA/H-SAA and MLAA/MLPA

X = an indicator in MLAA/MLPA but not the HAA/H-SAA

Rate of readmission is defined as the number of patients admitted to the same hospital for an unplanned inpatient readmission, within 30 days from the first admission, relative to the total number of readmissions expected within 30 days (MOHLTC, 2007). The expanded list of CMGs for the readmissions indicator covers a variety of health conditions: specific cerebrovascular disorders except transient ischemic attacks, chronic obstructive pulmonary disease (COPD), chronic bronchitis, simple pneumonia and pleurisy, AMI without cardiac catheter with congestive heart failure, AMI without cardiac catheter with ventricular tachycardia, AMI without cardiac catheter with angina, AMI without cardiac catheter without specified cardiac conditions, heart failure, diabetes; gastrointestinal (GI) conditions such as hemorrhage, complicated ulcer, uncomplicated ulcer, inflammatory bowel disease, GI obstruction, esophagitis, gastroenteritis, miscellaneous digestive disease, other GI diagnoses, cirrhosis and alcoholic hepatitis, pancreas disease (except malignancy), liver diseases (except cirrhosis or cancer), and biliary tract diseases; cardiac CMGs such as unstable angina without cardiac catheter with specific cardiac conditions, unstable angina without cardiac catheter without specific cardiac conditions, chest pain, angina pectoris, and arrhythmia (Government of Ontario, 2008).

The next four fiscal years (2010-11 to 2013-14) introduced annual amendments to the 2008-10 H-SAA rather than a new multi-year document (see Table 4.3). Percentage of chronic patients with new stage two or greater skin ulcers was removed in 2010-11, but was subsequently included in the Quality Improvement Plan (QIP) in 2011-12 (see Table 4.4 in section 4.3.3). Percentage of full-time nurses was also removed as a measure of hospital performance in 2010-11. Finally, rate of readmission to the same hospital for list of CMGs was removed from the H-SAA as measure of hospital performance in 2010-11.⁹ In that same year, the CMGs used for the MLPA readmission indicator were expanded beyond AMI (see Table 4.2). Based on the indicators removed and retained in the H-SAA, there was a move towards a more direct focus on global volumes and financial performance in the 2010-11 H-SAA.

The 2011-12 and 2012-13 H-SAAs introduced more changes. Global volumes began to be listed under the category of Service Volume in 2011-12 but remained indicators of hospital

⁹ The readmissions indicator was introduced as an explanatory indicator in the H-SAA in 2011-12. Explanatory indicators are not listed in Table 4.3, nor are they discussed in this thesis, because they do not hold acute care hospitals accountable for a target. Hospitals collect data on explanatory indicators in order to provide LHINs with the necessary data for their own reporting requirements (LHIN Collaborative, 2012; LHIN, 2013).

performance in that they are included in documents describing and defining H-SAA indicator technical specifications (LHIN Collaborative, 2012; LHIN, 2013). The 2011-12 H-SAA amending agreement retained all previous indicators and moved towards focusing on indicators related to the health system issue of access, with a new emphasis on wait times. The ten new accountability indicators introduced were for wait times. Three indicators were for 90th percentile ER LOS: 1) admitted patients; 2) non-admitted complex (CTAS I-III) patients; and 3) non-admitted minor uncomplicated (CTAS IV-V) patients. The 90th percentile ER LOS is “the point at which nine out of ten admitted patients completed their visit. ER LOS is defined as the time from triage or registration, whichever comes first, to the time the patient leaves the ER” (Government of Ontario, 2011). Note that these indicators had been introduced one year earlier in 2010-11 in the MLPA (Table 4.2). The other seven new indicators were for 90th percentile wait times for provincial priority areas as reflected in the federal wait times initiative (specifically cancer surgery, cataract surgery, hip and knee joint replacement surgeries, and diagnostic MRI and CT scans). It is also important to note that these wait time indicators had been included in the MLAA/MLPA since 2007 (Table 4.2), but were not included in the H-SAA until the 2011-12 amending agreement.

The 2012-13 amending agreement renamed the category of System Integration to System Perspective to clarify its focus, going beyond integration to include community engagement and e-health. This amending agreement also added six more accountability indicators. Percentage of alternate level of care (ALC) days, another broader health system indicator, was added under the System Perspective category. This indicator had been in the MLAA/MLPA since 2007 (Table 4.2). The other five additional indicators were for hospital acquired infections and were categorized under Person Experience. These five indicators show another shift in the health system’s focus, more towards quality and patient safety, in addition to the focus on access (volumes of services provided) and financial health.

The changes to the indicators used in H-SAA from 2005 until 2013-14 revealed three distinct shifts. The first one was from multi-year agreements (2005-07 and 2008-10) to annual amendments since the 2010-11 fiscal year. The second shift was from a focus on global volumes and financial indicators towards a greater focus on health system issues such as access as revealed by the introduction of ten indicators for wait times in 2011-12 and the indicator for

percentage ALC days in 2012-13. The third shift was towards a greater focus on quality of patient care based on the introduction of five performance indicators measuring hospital acquired infections.

Hospitals are also held accountable for indicators and performance targets in their Quality Improvement Plans (QIPs), another example of the health system's increased focus on patient safety and quality. The next section will examine QIPs, used by Health Quality Ontario to hold acute care hospitals accountable.

4.3.3. Quality Improvement Plan (QIP)

The issue of quality and safety of hospital care in Canada became more visible with the release of findings from the Canadian Adverse Events study (Baker et al., 2004). The *Excellent Care for All Act*, 2010 (ECFAA) further strengthened the focus on quality and safety in Ontario's health care system. ECFAA is "intended to make health care providers and executives accountable for improving patient care" (Government of Ontario, 2010b). It aims to put "Ontario patients first by strengthening the health care sector's organizational focus and accountability to deliver high quality patient care" (MOHLTC, 2012). ECFAA seeks accountability for quality through the following requirements for all acute care hospitals. Each hospital must have a quality committee that reports to the hospital board on quality-related issues and an annual Quality Improvement Plan (QIP) made publicly available. Hospitals must have a clear patient relations process for patients, clients, and caregivers; use patient/client/caregiver surveys to assess satisfaction with services and staff surveys to assess satisfaction with employment experience and staff views about the quality of care provided by the hospital. As well, all hospitals must develop a declaration of values with public consultation. Finally, all hospitals must have a critical incident reporting process that includes reporting to the medical advisory committee (MAC) and hospital administrator, in addition to the affected patient (ECFAA, 2010).

Along with increasing the focus on quality and the patient experience, ECFAA strove to make executives more accountable by including a pay-for-performance (P4P) provision (also referred to as pay-at-risk). The amount of executive compensation linked to performance, the indicators, and the targets to be used are not specified by ECFAA. It is only suggested that the P4P rate be "meaningful" (MOHLTC, 2011a) or "reasonably sufficient to provide an incentive for executives to achieve their performance targets" (OHA, 2011). It is left up to each hospital's board to decide

the appropriate amount of compensation that will be at-risk and the performance targets to which it is linked. Five percent is suggested as a starting point for the performance-based compensation, to be increased in subsequent years (OHA, 2011). In practice, the compensation amount varies between two and five percent of the executive's salary (hospital executives' compensation is publicly available), with the average being four percent (MOHLTC, 2011a). The impact of the P4P requirements of ECFAA on Ontario's acute care hospitals will be addressed in chapter six, which presents the interview findings.

QIPs are developed by each acute care hospital every fiscal year and made publicly available on hospital websites as well as being reported to Health Quality Ontario (HQO). ECFAA requires that each QIP contain the results of patient and staff satisfaction surveys; critical incident data; annual quality improvement targets; and information about how executive compensation is linked to the achievement of quality improvement targets. Unlike the H-SAA, hospitals are not mandated to report on specific indicators in their QIPs. Instead, there is greater flexibility; the government *recommends* hospitals include a set of core quality indicators in their QIPs (at least one from each of the five quality dimensions listed in Table 4.4), as well as allowing them to add other quality indicators as desired. The recommended core indicators are considered high priority areas and those that will have a "significant impact on improving care for patients across the care continuum" and align with the province's quality framework (MOHLTC, 2012a). Use of these recommended indicators allows HQO to carry out its mandate to "conduct regular province-wide comparisons and reporting on a minimum set of quality indicators" (OHA, 2012). This section will only examine the recommended core quality indicators found in part B of the QIP because they are the ones focused on by the health system.

In 2008, the MOHLTC had mandated hospitals to report information publicly on some quality indicators (e.g., hospital acquired infections) (MOHLTC, 2008), but the Auditor General of Ontario (2008b) found that hospitals were not all initially using the same indicator definitions. ECFAA and the requirement for all hospitals to produce a QIP rectified this because standard definitions were provided for each of the recommended core quality indicators (see Table 4.4 and Appendix J), making it possible for HQO and individual hospitals to make comparisons. The indicators in Table 4.4 are listed in the order they appear in the QIP short form and grouped

according to five quality dimensions identified by HQO: Safety, Effectiveness, Access, Patient-centred, and Integrated (Government of Ontario, 2012a).

Table 4.4 Quality dimensions, objectives, and recommended indicators in QIP Part B

Quality Dimension	Objective	Measure/Indicator (see Appendix J for definitions)	2011-12	2012-13	2013-14
Safety	Reduce C. difficile infections (CDI) and associated diseases	CDI rate per 1,000 patient days	●	▲▲	▲▲
	Reduce incidence of ventilator-associated pneumonia (VAP)	VAP rate per 1,000 ventilator days	●	▲▲	▲▲
	Improve provider hand hygiene compliance	Hand hygiene compliance before patient contact	●	●	●
	Reduce rate of central line blood stream infections	Rate of central line blood stream infections per 1,000 central line days	●	▲▲	▲▲
	Reduce incidence of new pressure ulcers	Pressure ulcers (≥ stage 2)	●	●	●
	Avoid patient falls	% of complex continuing care residents who fell in last 30 days	●	●	●
	Reduce rates of deaths and complications associated with surgical care	Surgical Safety Checklist	●	●	●
		Rate of in-hospital mortality following major surgery			●
	Reduce use of physical restraints	Physical restraint use	●	●	●
	Medication reconciliation at admission	Medication reconciliation at admission			●
Effectiveness	Reduce unnecessary deaths in hospitals	Hospital Standardized Mortality Ratio	●	●	●
	Improve organizational financial health	Total Margin (consolidated)	●	▲▲	▲▲
Access	Reduce wait times in the ED	ER Wait times for admitted patients.	▲▲	▲▲	▲▲
Patient-centred	Improve patient satisfaction	Would you recommend this hospital to your friends and family?	●	●	●
		Overall, how would you rate the care and services you received at the hospital?		●	●
		Willingness of patients to recommend the hospital to friends or family		●	●
Integrated	Reduce unnecessary time spent in acute care	Percentage ALC days	●	▲▲	▲▲
	Reduce unnecessary hospital readmission	Readmission within 30 days for selected CMGs to ANY facility	●*	□□	□□

* Only readmissions to own institution

● = indicator only in QIP

▲▲ = indicator in both the QIP and H-SAA

□□ = indicator in both the QIP and MLPA

The QIP has been used for three fiscal years: 2011-12, 2012-13, and 2013-14. The indicators used in the first year of the QIP have carried over to the present time. Two new Patient-centred indicators were added in the 2012-13 QIP: “Overall, how would you rate the care and services you received at the hospital?” and results from a summary question such as the “Willingness of patients to recommend the hospital to friends or family.” The 2013-14 version of the QIP added two new Safety indicators: rate of in-hospital mortality following major surgery, and medication reconciliation at admission. The latter indicator is important because previously no performance indicators related to medication-related adverse events were being reported on other than for accreditation purposes (OHQC & JPPC, 2008).

The QIP indicator ‘percentage of complex continuing care residents with new pressure ulcers in the last three months (greater than or equal to stage two)’ is similar to the one previously used in the 2007-08 HAA and 2008-10 H-SAA (see Table 4.3). Thus, while this indicator remains important it is deemed better suited for quality improvement purposes instead of accountability tied to organizational funding. Six indicators currently used in the H-SAA align with indicators used in the QIP: rate of Clostridium difficile infections (CDI); rate of ventilator-associated pneumonia (VAP); rate of central line blood stream infections; ER wait times; percentage of ALC days; and total margin (Table 4.4).

4.4. Discussion

Examining accountability documents and performance indicators contained within reveals four main themes: 1) increased number and areas for performance indicators; 2) the change in focus of performance indicators; 3) alignment of indicators used in different documents; and 4) the challenges associated with accountability. Each of these themes will be discussed below.

4.4.1. Increased number of indicators

As shown in Table 4.2, MLPAs contained thirteen performance indicators when they were introduced in 2007-08. Over time, the number of indicators has increased to sixteen, nine of which have been used in every agreement, indicating the continued importance and even challenge of those areas of the health system (necessitating their continued measurement). The nine indicators are financial performance (balanced budget); 90th percentile wait times for cancer surgery, cardiac-bypass procedures, cataract surgery, hip replacement, knee replacement, and diagnostic scans (MRI and CT); and percentage of ALC days. The most recently added

indicators are for emergency department length of stay, repeat unplanned emergency visits for mental health and substance abuse, and readmissions for select CMGs. These additional indicators highlight the expanding focus of LHIN performance from financial and wait times, to access to care in acute care hospitals, areas that can be impacted by community based providers.

The number of indicators used in hospital accountability agreements (H-SAA) has also increased significantly over time, from thirteen in 2005-06 to twenty-five in the current H-SAA (see Table 4.3). In the past three years, sixteen performance indicators have been added to the H-SAA, while no indicators have been removed. As well, the number of recommended indicators in the QIP (see Table 4.4) has increased from fourteen in its first year to eighteen in the current year (six of which overlap with the H-SAA for a total incremental increase of twelve recommended indicators). These added indicators combined with the additional sixteen indicators in the H-SAA introduced over the same period amounts to twenty-eight new indicators introduced for hospitals. Some hospitals are now reporting up to thirty-seven indicators for accountability purposes, if they report on all recommended QIP indicators. If hospitals choose to report on only one indicator in each of the five QIP categories they will still report on up to twenty-one new indicators (can be fewer if the chosen indicators for the QIP overlap with H-SAA indicators). See chapter six of this thesis for more findings on the burden of reporting.

Table 4.5 at the end of this chapter provides a summary of the current performance indicators used in the MLPA, H-SAA, and QIP, and any overlap between these documents. The increase in the number of indicators used for accountability in the acute care sector is manageable, especially when compared to other jurisdictions such as the UK and the US. The number of indicators used for UK hospitals has increased significantly from 425 indicators in 1985 to approximately 2000 indicators by 1989 (Pollitt, 2005). The Health & Social Care Information Centre is a current website that can be accessed by the public. It contains all indicators used to monitor the NHS, including hospital performance indicators (HSCIC, 2013). A total count of all indicators used for hospitals in the US was not found, but the Agency for Healthcare Research and Quality (AHRQ), The Commonwealth Fund, Institute for Healthcare Improvement, and the Joint Commission all use many indicators to monitor hospital performance in the US.

4.4.2. Expanding focus of accountability

The 2010-12 MLPA states the purpose for creating LHINs and the devolution of responsibilities for \$21 billion in annual health expenditures to the LHINs is “underpinned by government’s ultimate accountability for expenditure of taxpayers’ money on health services.” As noted in section 4.3.2, the H-SAA set out obligations for financial performance, reporting, service volumes and other measures of hospital performance, and use of funding by acute care hospitals all while achieving balanced budgets (Reeleder et al., 2006). The government (MOHLTC) uses the MLPA and H-SAA to monitor fiscal management and health services delivery through the LHINs. The MLPA proceeds to set out “obligations for MOHLTC and LHINs related to ensuring financial accountability, sustainability and performance of the health care system.” This emphasizes the focus on financial accountability at the level of the LHIN, a focus echoed in the H-SAA by the consistent use of indicators for financial performance. Indicators for financial performance hold hospitals to standard, provincial-wide targets, emphasizing the importance of strong financial performance for acute care hospitals while ensuring they provide adequate volumes and quality of services.

Beyond these consistencies, it is evident that the health system’s focus has expanded over time as the number of indicators has expanded and the number of accountability documents has increased from one in 2005 to three at the time of writing. The expansion has retained the initial focus on acute care hospitals (when hospital accountability agreements were introduced in 2005), but also includes services beyond acute care (the MLPA introduced in 2007), and then towards a greater emphasis on quality in acute care and the patient experience (mandated by ECFAA and included in the QIP in 2011). Within the individual documents many indicators have changed or been added, expanding the focus from financial performance and global volumes (JPPC, 1999; OHQC & JPPC, 2008) to include access (e.g., ER length of stay and wait times), quality (e.g., patient safety and hospital acquired infections), and a broader system perspective (e.g., percentage ALC days). The overlap between the three accountability documents (Tables 4.3 and 4.4) indicates an increased focus on quality made more explicit by the introduction of the QIP in 2011.

An expansion towards integration of hospital performance with community-based providers also occurred. This movement towards integration is shown by the MLPA indicators 90th percentile wait time for Community Care Access Centre (CCAC) in-home services; repeat unscheduled ED

visits within 30 days for mental health conditions; and repeat unscheduled ED visits within 30 days for substance abuse conditions. The latter two indicators provide a measure of community integration of care (LHIN Collaborative, 2012; LHIN, 2013). The H-SAA indicator for percentage of ALC days added in 2012-13 also aligns with this expansion as it provides another measure of integration of hospital performance with community care providers, and emphasizes the role and incentive for acute care hospitals to increase integration with community providers and access.

These examples of the expansion of accountability in Ontario's acute care hospital sector also showed that the types of accountability being sought have expanded over time. Financial accountability was the first type of accountability to be addressed, and continues to be emphasized as financial indicators are retained from year to year. Performance accountability was also focused on early, as indicators for volumes of services provided have been included since the first accountability agreement was used in 2005. The areas of performance accountability being sought have expanded to include performance in terms of quality, safety, and patient satisfaction. The increased focus on patient satisfaction and the patient experience is an improvement, but the measures being used in the QIP continue to focus on general patient satisfaction, instead of assessing specific aspects of care (Blais, 1990). Political or democratic accountability has also been actively sought, as accountability information is required to be publicly available, and there is increased emphasis on the patient experience and their satisfaction. The increased focus on the interests of patients, their needs, and concerns (including satisfaction) takes political or democratic accountability beyond governmental oversight of the health care system and emphasizes the importance of being accountable to the users of acute care services, and the general tax-paying public.

4.4.3. Alignment between accountability instruments

“The H-SAA reflects that to the extent one party succeeds, the other party will also succeed as the parties [the LHIN and the acute care hospital] share a common interest in supporting ‘... a health care system that keeps people healthy, gets them good care when they are sick and is [sustainable]’” (Government of Ontario, 2008). This quote highlights that the goal behind the creation of LHINs and the use of accountability agreements is to increase alignment, and unify health service providers by using performance obligations and targets in both the MLPA and H-

SAA. Given this goal, it is important to note when indicators used in the MLPA and H-SAA and/or QIP align, but also when they do not align.

A. MLPA and H-SAA alignment

As shown in Table 4.2, most indicators used for the Local Health System performance category in the MLPA continue to relate to acute care services (readmissions, ED or ER length of stay, ALC days, wait times and volumes of diagnostic scans provided in hospitals, and wait times for surgeries). Alignment of H-SAA indicators with those in MLPA is referred to as an “indicator cascade” (OHQC & JPPC, 2008), but is it occurring? The answer is that the alignment between indicators used in the MLPA and H-SAA is often absent or delayed (see Tables 4.1 and 4.2). Many of the indicators recently added to the H-SAA (Table 4.3) align with those that have been used for four or five years in the MLPA, such as percentage of ALC days, ER LOS, and 90th percentile wait times for provincial priority areas (see Table 4.2). Comparing other indicators used in the H-SAA and the MLPA, and noting when they were introduced, reveals misalignment in timing of indicator usage at the LHIN and acute care hospital levels. For example, the readmissions for select CMGs was introduced in the 2008-10 H-SAA, whereas the readmissions indicator used in the MLAA at that time only reported on readmissions for AMI (see Table 4.2). In 2010-11, the MLPA indicator expanded to include more CMGs than AMI; however, it was removed from the H-SAA that same year (see Table 4.3).

Other cases of misalignment between the MLPA and the H-SAA occur due to indicators not being included in the H-SAA, or being added years later. One example is the indicators for ER length of stay added to the 2011-12 H-SAA (refer to Table 4.3). These indicators had been introduced one year earlier in the MLPA (see Table 4.2), meaning that LHINs were being held accountable for an indicator related to the activities of acute care hospitals, but acute care hospitals were not. Another misalignment is in the delay of using indicators for 90th percentile wait times for priority areas in the H-SAA. These indicators were used in the MLPA since 2007-08 but were not included in the H-SAA until 2011-12. This disconnect between the use of indicators in the MLPA and the H-SAA means that for four years, LHINs were being held accountable for wait time targets for services provided in acute care hospitals but hospitals were not. Even though this followed suggested policy (Priest et al., 2007), it created a challenge

because the success of one level (the LHIN) is dependent on the performance of the other (acute care hospitals).

Another example of misalignment is the lag between the use of the indicator for percentage of ALC days in the MLPA and the H-SAA. This ALC indicator has been included in the MLPA since 2007-08 but was not included in the H-SAA until 2012-13. In this case, the disconnect between the MLPA and the H-SAA was purposeful. Prior to 2008, percentage of ALC days was proposed as an indicator for the H-SAA. It was not used at that time because decision makers agreed that acute care hospitals would not be held accountable for system issues beyond their control (e.g. lack of suitable discharge locations such as long term care beds), and because the inconsistent definitions of ALC being used led to poor data quality (OHQC & JPPC, 2008). Since then the definition of ALC has been standardized and its calculation provided to acute care hospitals in the Indicator Technical Specifications documents (LHIN Collaborative, 2012; LHIN, 2013).

B. QIP, MLPA, and H-SAA alignment

Table 4.4 identifies which indicators used in the QIP are also used in the MLPA and H-SAA over time. Two years after the introduction of QIPs and their quality indicators, three of the same indicators for hospital acquired *Clostridium difficile* infections (CDI), central line blood stream infections (CLI), and ventilator-associated pneumonia (VAP) were added to the H-SAA. Even though the same indicators are used, the two documents can have different performance targets (the H-SAA target should be ten percent greater than the hospital's current performance or equal to the hospital's QIP target, whichever is greater). The H-SAA is between the acute care hospital and its LHIN, whereas the QIP is reported to HQO. Hospitals may report the same indicator to two different agencies but be held accountable for two different performance targets.

As noted above, three of the five recently added hospital acquired infection indicators in the H-SAA were first used in the QIP (e.g., VAP, CDI, and CLI). Other indicators used in the H-SAA that align with indicators used in the QIP are rate of CDI; rate of VAP; rate of CLI; ER wait times; percentage of ALC days; and total margin. According to the QIP Guidance document hospitals are supposed to explain how the QIP aligns with other planning processes in the hospital, such as those for the H-SAA and other provincial priorities (Government of Ontario, 2012a). Because the QIP includes measures that align with indicators used in or based on data

collected for the H-SAA, alignment with other planning processes (especially for the H-SAA) is facilitated. Alignment between the H-SAA and the QIP may seem helpful, but upon further consideration may require acute care hospitals to collect data and report on different targets to their LHIN and HQO, potentially increasing the burden associated with reporting requirements.

The first QIP (2011-12) included an indicator for readmission within 30 days for selected CMGs to ‘own facility’. That same year this indicator was removed from the H-SAA (later becoming an explanatory indicator in 2012-13). In 2012-13, the QIP broadened this indicator to readmission within 30 days for selected CMGs to ‘any facility’. The indicator now provides a more integrated system perspective and aligns with the MLPA indicator used since 2010-11. The expanded scope of the QIP indicator and alignment with the MLPA indicator recognizes that patients do not always go back to the hospital where treatment was originally provided. They may be treated at one hospital and then readmitted to a different hospital within 30 days after discharge. By collecting information on and publicly reporting readmissions to any facility, the QIP and MLPA provide a more thorough picture of LHINs in terms of the quality of health care provided, whether care is integrated, and the patient experience within the acute care sector.

4.4.4. Challenges

The original HAA were intended to involve “joint planning and negotiation, collaborative problem-solving, and continuous improvement” (MOHLTC, 2005). Alignment of H-SAA indicators with those in MLPA has increased, but generally occurs after a significant delay (up to five years). This disconnect between the indicators used at different levels of the health care system may make accountability more difficult to achieve. Some indicators being used require LHINs and/or hospitals being held accountable for measures they do not have control over. For example, hospitals are held accountable for percentage of ALC days; however, the number depends on community supports and availability of beds outside of acute care. The inclusion of percentage of ALC days as an indicator even with its challenges emphasizes the importance of reducing ALC days to the MOHLTC and the possibility that it also contributes to ED wait times. Another example of the issue of controllability is LHINs being held accountable for wait times for services provided in acute care hospitals, but hospitals not being held to targets until four years later. Lack of controllability makes accountability challenging to achieve because organizations do not have the necessary levers to affect the indicator being used.

The increasing number of indicators being used, the expanding focus of the health system, and lag time in alignment between MLPA, H-SAA, and QIPs may reduce the clarity of system goals and the effectiveness of the instruments of accountability. The expansion and refinement of measures is an evolving process as new measures are introduced for a time, but then discontinued in favour of more commonly used measures such as those for financial performance, access, hospital acquired infections and readmissions (Snowdon et al., 2012). Other measures changed over time as their definitions were refined. Changes to the measures used, or their definitions, make inter- and intra-hospital comparisons over time more challenging (one of HQO's mandates).

The growing number of indicators may also make it more challenging for LHINs and acute care hospitals to identify and focus on health system goals as the areas of focus change and become more diffuse and multi-dimensional. The addition of HQO as an agent of accountability and the recommended QIP performance indicators can create a challenge for data quality and reporting. Even though some indicators reported to different agencies are similar, confusion may occur when hospitals have to accommodate differing data needs, changing reporting requirements, and multiple targets for the same indicator. An example of this challenge is the readmissions indicators used in the MLPA, H-SAA, and QIP. The current MLPA and QIP indicators relate to readmissions to any facility, whereas the H-SAA also requires hospitals to collect information on readmissions to their own facility. Hospitals must now collect and analyze data on two indicators that are slightly different, and then report this information to two different agencies (their LHIN and HQO); this may be challenging or burdensome to organizations and lead to reporting errors.

The current emphasis is on measures that are quantifiable (or measurable) and utilize readily available data. Focusing on measurability when choosing indicators means that other areas of importance may be missed because they are not easy to define or measure. Even though a number of accountability measures are focused on areas of care that require coordination, they still fall short of capturing health system coordination and integration in other areas of health care provision (such as pharmacy services tied to medication reconciliation and primary care). Continued efforts to increase coordination of care between acute care and community providers means that controllability is likely to remain an issue, particularly when hospitals are held accountable for performance measures that require collaboration with community-based

providers (e.g., readmission rates). Measurability will also remain an issue because many areas requiring integration and/or coordinated care are not easily measured (e.g., measures of system integration for acute care hospitals are challenging to implement).

Performance measurement is critical for performance improvement (Mainz, 2004), but problems arise when hospitals are forced to trade-off between measurement activities and attention to innovations that lead to improvement. As new measures are developed and added to reporting requirements, hospitals must devote more time and effort to performance measurement and reporting. This is time and effort that some organizations considered better spent on providing more patient care or engaging in improvement activities (not just measurement of activities). Even so, performance measurement needs to occur in order to determine whether additional care or improvement initiatives follow best practice guidelines, and/or lead to actual improvements.

4.5. Document analysis summary

This chapter has outlined Ministry-LHIN Performance Agreements, Hospital Service Accountability Agreements, and Quality Improvement Plans in order to explain who is held accountable to whom and for what they are held accountable. LHINs and acute care hospitals are held to account by the use of contracts (performance or accountability agreements) stipulating financial allotments and expected deliverables. Public reporting is also used to hold LHINs and acute care hospitals accountable because they are mandated to make MLPA, H-SAA, and QIPs publicly available on their respective websites. These documents provide information on the increasing use of accountability/performance indicators over time, the changes in focus and expanding scope of accountability, the delay in alignment between indicators used at the LHIN and acute care hospital levels, and challenges associated with accountability requirements. While the scope of accountability has increased, the goal of ensuring the government is accountable for the use of public funds on health services may not be as clearly achieved (Government of Ontario, 2010a). Measuring and reporting does require the use of indicators and targets, but whether acute care hospitals have changed their strategic priorities to align with accountability requirements and goals is not known. This leads to the question of whether organizational strategic priorities are affected by the increased focus on and changes to the requirements of accountability. The next chapter will address this question by presenting and discussing the findings from a survey of Ontario's acute care hospitals about their strategic priorities.

Table 4.5 Performance indicators used in the current MLPA, H-SAA, and QIP

PERFORMANCE INDICATORS	MLPA	H-SAA	QIP
Ambulatory care visits (total outpatient minus ED visits)		●	
Total acute activity (including inpatient and day surgery* weighted cases)		●	
Complex continuing care RUG weighted patient days		●	
Inpatient mental health* weighted patient days		●	
Elderly capital assistance program (ELDCAP) inpatient days		●	
Rehabilitation* inpatient days (weighted cases)		●	
Emergency department visits (weighted cases)		●	
Hospital Standardized Mortality Ratio			●
Percentage of ALC days	●	●	●
Rate of readmission within 30 day to ANY facility for select CMGs	●		●
Rate of readmission within 30 days to OWN facility for select CMGs			
Repeat unplanned emergency visits within 30 days for mental health conditions	●		
Repeat unplanned emergency visits within 30 days for substance abuse conditions	●		
Financial			
Current ratio		●	
Total margin or balanced budget	●	●	●
Safety			
Percentage of Chronic Patients with New Stage 2 or Greater Skin Ulcers			●
Percentage of complex continuing care patients who fell in last 30 days			●
Surgical safety checklist performance (all three phases)			●
In-hospital mortality following major surgery			●
Use of physical restraints			●
Medication reconciliation at admission			●
Patient Satisfaction			
Would you recommend this hospital to your family and friends?			●
Overall, how would you rate the care and services you received at the hospital?			●
Willingness to recommend hospital to friends or family			●
90th percentile ER length of stay for			
Admitted patients	●	●	●
Non-admitted complex (CTAS I-III) patients	●	●	
Non-admitted minor uncomplicated (CTAS IV-V) patients	●	●	
90th percentile wait times for			
Cancer surgery	●	●	
Cardiac bypass surgery	●	●	
Cataract surgery	●	●	
Hip joint replacement surgery	●	●	
Knee joint replacement surgery	●	●	
Diagnostic MRI scan	●	●	
Diagnostic CT scan	●	●	
CCAC in-home services	●		
Hospital Acquired Infections			
Cases of ventilator-associated pneumonia (VAP)		●	●
Central-line infection (CLI) rate		●	●
Rates of Clostridium difficile		●	●
Rates of Vancomycin Resistant Enterococcus (VRE)		●	
Rates of Methicillin-resistant Staphylococcus aureus (MRSA)		●	
Hand hygiene compliance before patient contact			●

Chapter 5: Survey Findings

5.1. Introduction

This chapter presents the findings from the analysis of data collected from the Strategic Priorities Survey. The survey was used to collect data in 2011; it was a follow up to the survey developed and used by Brown et al. (2005a) in 2004. The 2004 data were kindly made available for comparison, allowing both years of data to be analyzed for the purposes of this study. The 2011 survey queried hospitals about thirty-seven strategic issues common to both years of the survey and grouped into seven domains:

1. Consumer engagement
2. Corporate governance and management
3. Financial efficiency
4. Human resources cultivation
5. Improved information use for decision making
6. Patient care management
7. Service integration and partnerships

Respondents were asked to indicate whether or not each strategic issue was *articulated* in their corporate documents (yes/no scale); the perceived level of *importance* of the issue to the hospital's strategic direction over the next five years (a four level scale from "not important" to "very important"); and how *challenging* the issue was to the hospital's long-term sustainability (a five level scale from "not important" to "a major challenge, not within the organization's control"). Table 5.1 lists all seven domains alphabetically and their associated strategic issues.

Survey data were analyzed according to the methodology presented in section 3.5 to answer the second research question: *How has the increased focus on accountability and changes in the areas of focus over time been translated into changes in perceptions of strategic priorities by acute care hospitals in the province of Ontario?* The analysis focused on data from hospitals that responded in both survey years. Use of this data mitigated bias that may result from volunteer or self-selection bias (Hernan et al., 2004). Survey data were also analyzed to answer two sub-questions of research question two: (a) *What are the consistencies and variations in acute care hospitals' strategic priorities and do they vary depending on the type (size) of acute care hospital?* (b) *To what extent do shifts in priorities align with areas of formal accountability and how can these shifts (or absence) be explained?* The findings comparing the two survey years are

presented in aggregate, by hospital type (small community, large community, and teaching), and differences between hospital types by survey year.

Table 5.1 Domains and strategic issues for analysis

Strategic Domains (shaded) and Their Strategic Issues
Consumer Engagement
Involving community advisory groups in corporate decision-making
Planning based on changing demographics of your catchment population
Increasing engagement of consumers in health and healthcare issues
Increasing engagement of consumers in program planning and evaluation and/or corporate governance issues
Increasing focus on population health
Increasing focus on public relations/marketing
Increasing focus on patient satisfaction
Increasing engagement of consumers in rights and responsibilities
Corporate Governance and Management
Educational opportunities and resources for board members
Routine board member performance appraisals using established criteria
Board member succession planning
Educational opportunities and resources for senior management
Routine senior management performance appraisals using established criteria
Senior management succession planning
Financial Efficiency
Increasing focus on facility planning
Increasing focus on donations and fundraising efforts
Innovations to enhance our financial operating position
Human Resources Cultivation
Clinical leadership and succession planning
Reduction in injury and/or absenteeism
Labour relations
Physician and staff recruitment
Improved Information Use for Decision Making
Implementing clinical decision-support system
Implementing corporate decision-support system
Implementing electronic patient health record
Increasing focus on performance measurement for accountability
Increasing focus on performance measurement for improved quality
Patient Care Management
Increasing focus on identification and management of adverse events
Increasing focus on infection control strategies
Innovations in high-quality patient care delivery
Cultivating innovations in new technology for diagnosis and/or treatment (including pharmaceuticals)
Service Integration and Partnerships
Relations with academic institutions affiliated with recognized programs in health related fields
Collaboration with academic and training facilities for human resource planning
Increasing focus on government relations
Horizontal Integration
Increasing focus on regionalization
Vertical integration
Increasing focus on volunteer relations

The following five sections provide the findings from the analysis of survey data. Section 5.2 presents the survey's response rate. Sections 5.3 and 5.4 present the analysis of the aggregate and

sub-group data (by hospital type) in both survey years at the level of the issue and domain, respectively. Finally, section 5.5 provides a discussion of the findings.

5.2. Response rate

The total population of acute care hospital CEOs in Ontario, Canada was sent the Acute Care Hospital Strategic Priority Survey in 2011, as was done previously in 2004 by Brown et al. (2005a). Table 5.2 shows the total population ($n_{2011}=116$) and response rates in 2011. The total population of Ontario hospital CEOs was lower in 2011 than in 2004 ($n_{2004}=124$) because of hospital mergers, partnerships, and alliances occurring between the two survey years as outlined in section 3.4.7 and in Appendix E. The 45.7 percent response rate (fifty-three hospitals) in 2011 meets the criteria for acceptable response rates (34 to 40 percent) for organizational survey questionnaires (Baruch & Holton, 2008). As shown in Table 5.2, the response rates in 2011 were 71.4 percent for teaching hospitals, 54.4 percent for large community hospitals, and 26.7 percent for small community hospitals in 2011. The aggregate response rate in 2004 was 82.3 percent; 92 percent of teaching hospitals, 93 percent of large community hospitals, and 68 percent of small community hospitals responded in 2004 (Brown et al., 2005a). The response rates in 2011 are lower than the 2004 response rates because the 2004 survey was carried out under the auspices of Hospital Report (sponsored by the Ontario Hospital Association and the Ontario Ministry of Health and Long-Term Care).

Table 5.2 Response rate to the Strategic Priorities Survey in 2011

	Contacted in 2011	Responded (%) in 2011	Responded in both survey years	Same CEO in 2004 and 2011
Hospitals asked to respond	116	53 (45.7)	44	6
Types of hospitals:				
Teaching	14	10 (71.4)	9	1
Large community	57	31 (54.4)	29	1
Small community	45	12 (26.7)	6	4

Non-responding hospitals were contacted (see section 3.4.5) in order to increase the response rate. Many small community hospitals contacted by telephone indicated that they recognized the importance of the study topic, but they did not have the time to fill out the survey because they were too busy running a hospital and/or received many surveys from other organizations (e.g., Ontario Hospital Association).

Of the fifty-three hospitals that responded in 2011, forty-four also responded previously to the 2004 survey. These forty-four hospitals provided the subset of data that was analyzed to make comparisons between survey data from 2011 and 2004. Only six of the hospitals responding in 2011 had the same CEO in both 2004 and 2011. The strategic issue/domain data was analyzed using ANOVA to compare responses from individuals responding in both survey years to those responding in only 2004 and only 2011. These comparisons were done in aggregate and by type of hospital; few significant differences were found using a five percent level of significance with a Bonferroni correction (see Appendix F for numerical results). This indicates that non-respondents were likely similar to respondents. Those that responded in 2004 (2011) only are the non-respondents in 2011 (2004). Similarities to data from hospitals that responded in both survey years indicate respondents were not significantly different from non-respondents. This analysis also indicates that response shift bias from self-report data is not likely given the consistencies between respondents and non-respondents.

Hospitals that returned an incomplete survey in 2011 were contacted in order to obtain the missing information; however, missing responses were not always successfully obtained. Missing data meant that some strategic issues had fewer data points (see Appendix K for complete information). In aggregate, the maximum number of responses for a strategic issue was fifty-three in 2011. The maximum number of possible responses by hospitals responding in both survey years is forty-four; the minimum obtained for some issues is forty. Whenever the number of respondents for a strategic issue is less than the maximum, the number of responses is provided in brackets after the issue being discussed in the text of this chapter.

The next section presents the findings from analysis of strategic issues comparing survey data from 2011 and 2004. The data is also analyzed by type of acute care hospital in order to make comparisons between hospital types and between survey years.

5.3. Survey results by strategic issue

The aggregate data for hospitals responding in both 2004 and 2011 (n=44) provides overall results for *articulation* (yes or no) and ratings of *importance* (Likert scale from 0 to 3) and *challenge* (Likert scale from 0 to 4) associated with the issues in the strategic priorities survey. Results from the analysis of the strategic issue data are presented graphically. Detailed numerical

data is provided in the tables in Appendix K. All ANOVA analyses use a five percent level of significance with a Bonferroni correction (see section 3.5.1).

5.3.1. Aggregate results from survey of strategic issues

The 2011 and 2004 data for articulation is provided in Figure 5.1. The mean articulation values represent the percentage of hospitals that articulated each issue: a value of zero indicated that no hospitals articulated the issue and a value of one indicated that all hospitals articulated the issue. Figure 5.1 shows that all issues were articulated by at least one hospital in both survey years (no issues had an articulation value of zero in 2011 or 2004). The 2011 data points have lower articulation scores than the 2004 data points with few exceptions. Some of these differences are statistically significant at a five percent level of significance with a Bonferroni correction (see section 3.5.1) as indicated by the asterisk beside the 2011 data point (see Table K.1 in Appendix K for numerical details). The trend in Figure 5.1 is towards lower mean articulation, indicating that fewer hospitals articulated many of the individual strategic issues in their corporate documents in 2011 compared to 2004.

Examining specific issues we find that the largest decrease in mean articulation in 2011 compared to 2004 was a reduction of 0.45 for articulation of *increasing focus on government relations*. This large reduction is not surprising because in 2004 acute care hospitals reported directly to the government of Ontario (specifically, the MOHLTC). With the formation of LHINs in 2006, hospitals no longer reported directly to the provincial government, but instead to their respective LHIN, reducing direct contact with the government. The only issue with a mean articulation score of 1.0 in 2011 was *increasing focus on patient satisfaction*, meaning it is articulated by all hospitals providing a response. Even though the increase is only 0.1 (from a mean of 0.9 to a mean of 1.0), it is the largest increase in mean articulation from 2004 to 2011 and is statistically significant.

It is not surprising that all hospitals indicate that they articulate patient satisfaction given the provisions in the *Excellent Care for All Act, 2010* (ECFAA), requiring hospitals to implement a patient relations process and collect information on patient satisfaction (the latter is also suggested as a quality item to be reported in Quality Improvement Plans (QIPs)). This finding shows increased alignment with formal areas of accountability and that that hospitals are moving towards greater focus in their corporate documents towards issues mandated or recommended by

agencies external to the organization (i.e., the provincial government, LHINs, HQO). The strategic issue of *increasing engagement of consumers in rights and responsibilities* also increased. This strategic issue is related to the ECFAA requirement for all hospitals to develop a patient declaration of values with public consultation. The patient declaration of values includes patients' rights and responsibilities.

Figure 5.1 Aggregate results for the mean articulation of strategic issues in hospital corporate documents in 2011 and 2004 by hospitals responding in both years (n_{max}=44)

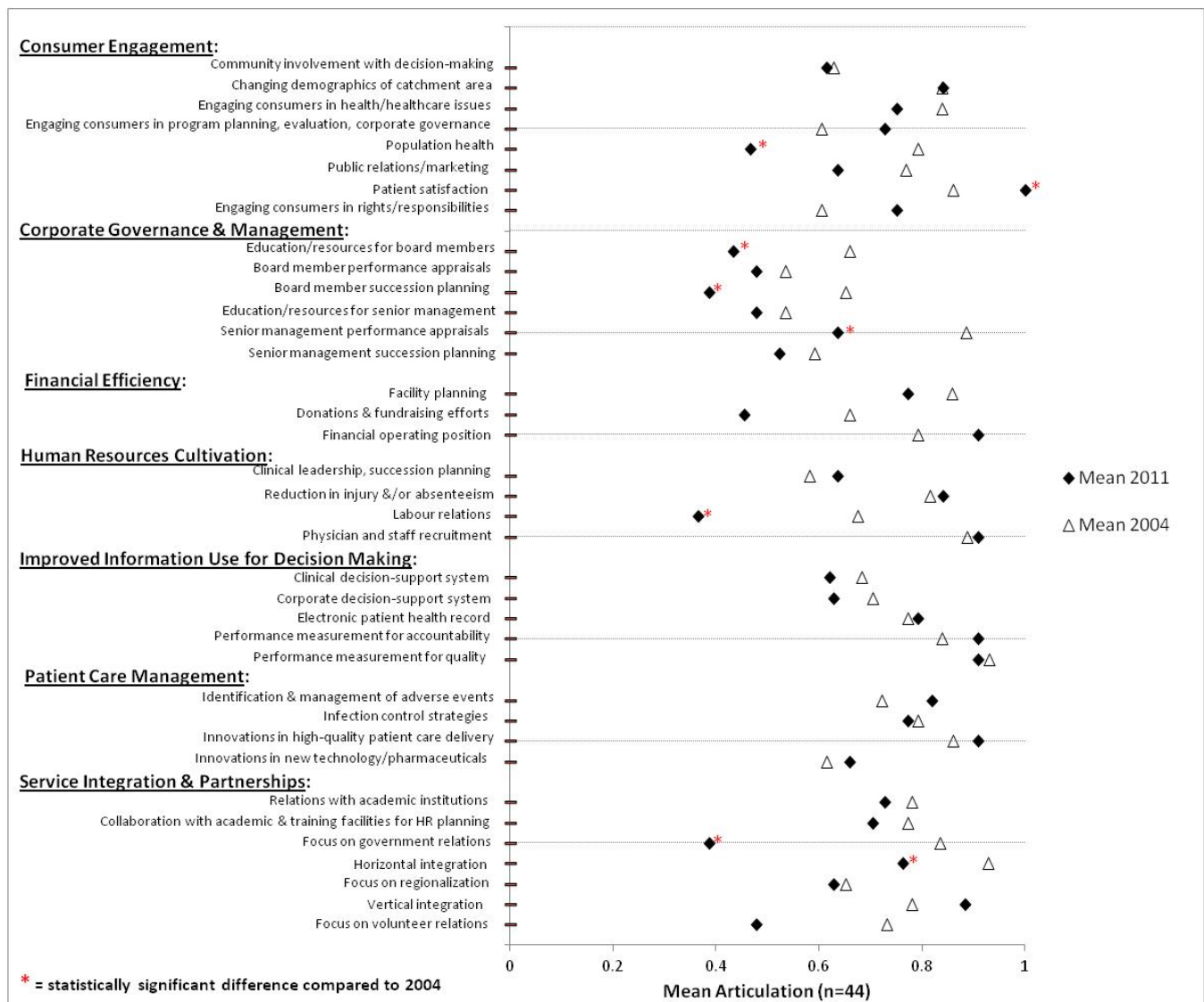


Figure 5.2 shows the aggregate mean hospital ratings of *importance* (on a scale of 0 = not important, 1 = somewhat important, 2 = important, and 3 = very important) of the strategic issues in the Strategic Priorities Survey. The 2011 data points show that all issues are rated at least “somewhat important” by at least one hospital (no mean ratings of importance are zero, all issues have a mean rating greater than one). All values are close to or higher than a mean rating of 2 (“important”). Some of these differences are statistically significant as indicated by the asterisk beside the 2011 data point (see Table K.2 in Appendix K for numerical details). The two highest mean ratings of importance in 2011 are 2.80 (n=44) for *increasing focus on patient satisfaction* and 2.71 (n=44) for *implementing electronic patient health record*. These results are not unexpected given the increased focus on patient satisfaction since ECFAA was legislated in 2010, and the increasing emphasis of electronic patient health records by the health system (even though it is not directly related to accountability requirements). The lowest mean rating of importance in 2011 is 1.77 (n=44) for *increasing focus on population health*. The low rating of importance indicates that while population health is still an important issue to acute care hospitals, it is not as important as other issues.

Comparing 2011 data to 2004 data in Figure 5.2 shows that while the 2004 data points (with few exceptions) are higher, the difference between corresponding data points was not very large. The data points demonstrate a trend towards reduced ratings of importance in 2011, although issues remained important (mean ratings are all greater than zero). The largest reduction in rating of importance was for *government relations* (decreased by 0.8, n=41), a statistically significant difference. This reduction could be a result of the formation of LHINs in 2006 and the change in the relationship between acute care hospitals and the provincial government to one that is indirect. The largest increase in rating of importance was for the issue of *senior management performance appraisals* (increased by 0.19, n=42). This increase is small, but of interest because most other issues had lower ratings of importance in 2011 when compared to 2004.

Figure 5.2 Aggregate results for the mean *importance* of strategic issues to organization's strategic direction over the next five years in 2011 and 2004 for hospitals responding in both survey years (n_{max}=44)

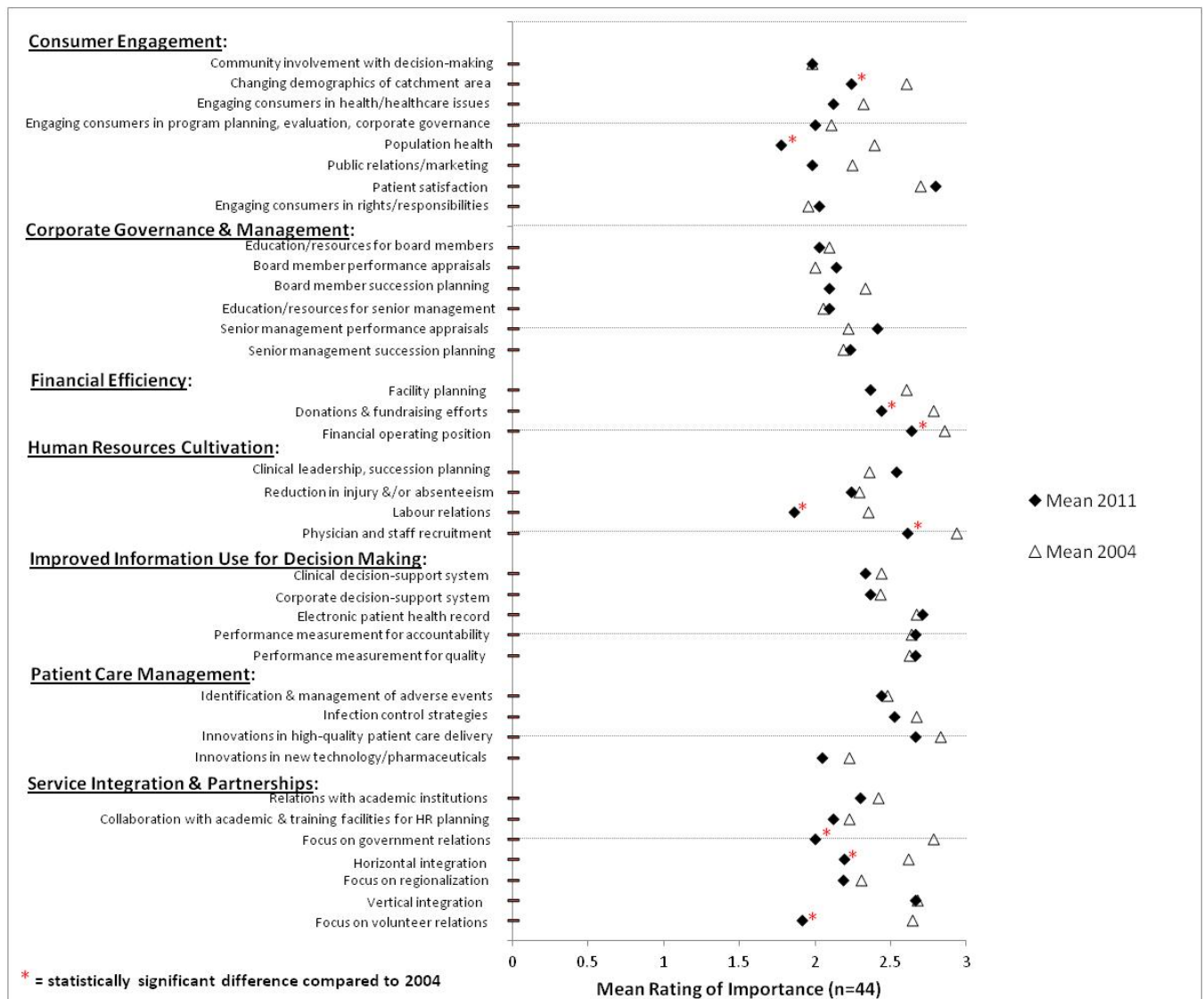


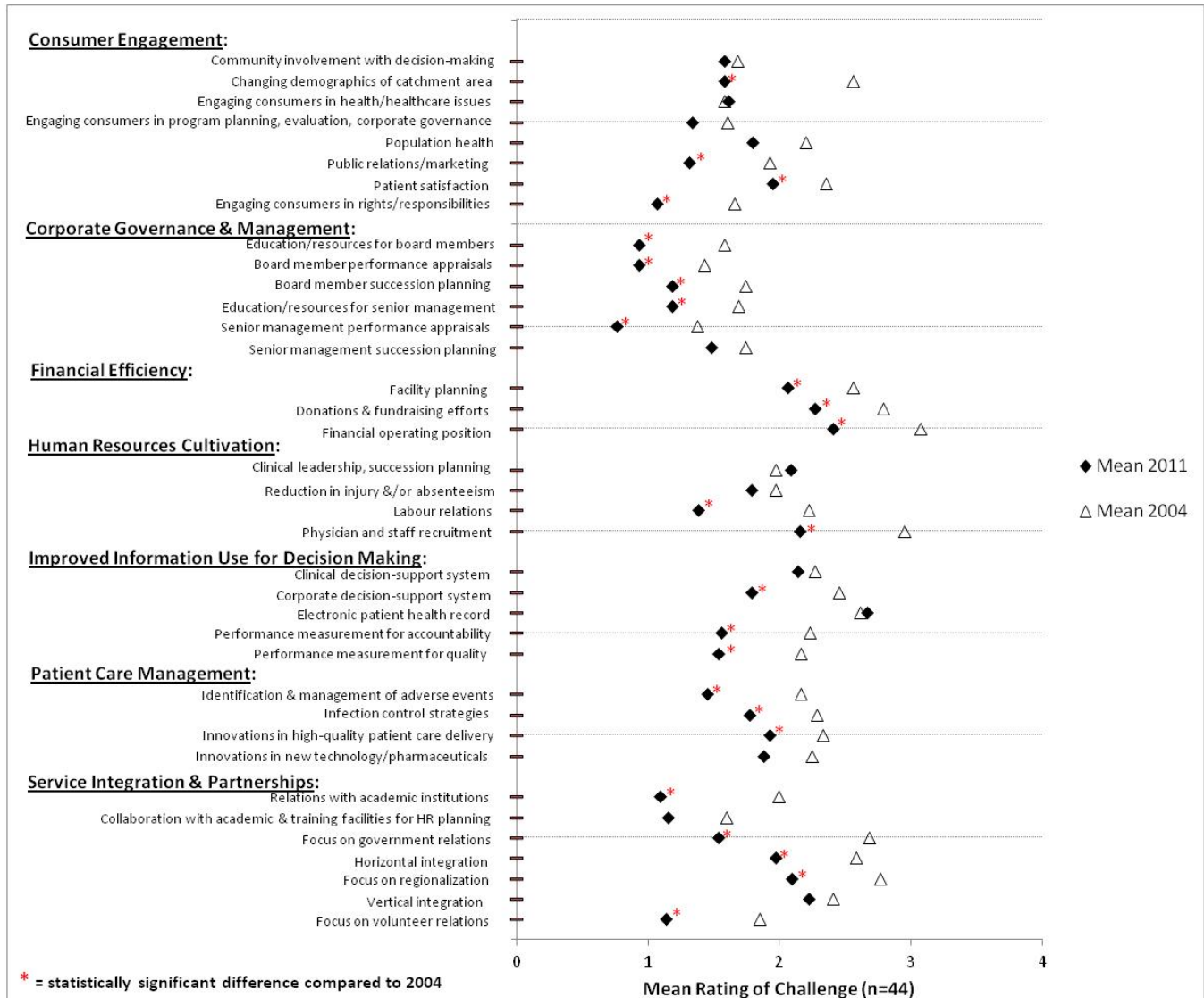
Figure 5.3 displays aggregate mean ratings of *challenge* associated with strategic issues in the Strategic Priorities Survey for 2011 and 2004 (scale of 0 = not a challenge, 1 = somewhat of a challenge, 2 = a challenge, 3 = a major challenge, and 4 = a major challenge not within the organization's control). The data shows that all issues are rated as at least "somewhat of a challenge" by at least one hospital (all mean ratings are greater than zero). Some of these differences are statistically significant as indicated by the asterisk beside the 2011 data point (see Table K.3 in Appendix K for numerical details). The highest mean rating of challenge in 2011 is

2.67 for *electronic patient health records* (n=43), likely due to the increased emphasis on electronic patient health records (or electronic medical records) by the government of Ontario. There are also many challenges associated with hospitals implementing electronic patient health records (Government of Ontario, 2012b), such as linking different systems and privacy concerns (MOHLTC, 2011b). The three lowest mean ratings of challenge are 0.76 for *senior management performance appraisals* (n=43), and 0.93 for both *board member performance appraisals* (n=43) and *educational opportunities for board members* (n=43). Low ratings that are still above zero show that even the issues with the lowest rating of challenge are at least “somewhat of a challenge,” on average.

The rating of challenge was lower for thirty-four of the thirty-seven strategic issues in 2011 compared to 2004; thus, while all issues continue to be rated as challenging, they are perceived as less challenging in 2011. The issues rated as more challenging were *clinical leadership succession planning* (increased by 0.12, n=41); *engaging consumer in health or healthcare issues* (increased by 0.03, n=41); and *electronic health records* (increased by 0.06, n=41). The issue with the greatest reduction in mean rating of challenge was *government relations* (reduced by 1.15, n=41). The reduced rating of challenge of *government relations* aligns with its results for articulation and rating of importance: it is articulated less, it is less important, and less challenging. It is interesting to note that both *performance measurement for improved quality* (reduced by 0.63, n=42) and *performance measurement for improved accountability* (reduced by 0.68, n=42) are rated as less challenging in the current environment of increased emphasis on performance measurement and reporting for accountability, as well as the multiple accountabilities faced by acute care hospitals.

Given these aggregate results, the next question of interest is how acute care hospitals of different types (as indicated by their size) articulate and rate the importance and challenge of strategic issues. The next section provides findings of analysis by acute care hospital type, including comparisons between types of acute care hospitals and comparisons of the magnitude of change between the two survey periods by type of acute care hospital.

Figure 5.3 Aggregate mean ratings of how *challenging* strategic issues are to the organization's long-term sustainability in 2011 and 2004 for hospitals that responded in both survey years (n_{max}=44)



5.3.2. Survey results of strategic issues by hospital type

The data for hospitals responding in both 2004 and 2011 (n=44) was analyzed by hospital type (small community, large community, and teaching) to determine if types of hospitals differed in their articulation of strategic issues, ratings of importance, and/or ratings of challenge of strategic issues. ANOVA was used to compare 2011 and 2004 data. The changes in articulation, ratings of

importance, and ratings of challenge between the two survey years, by hospital type are displayed in Figures 5.4 to 5.6. Some of these differences are statistically significant at a five percent level of significance with a Bonferroni correction (see section 3.5.1), indicated by the asterisk beside the data point. More numerical details are presented in Appendix K, Tables K.4 to K.12.

Figure 5.4 shows that more strategic issues were articulated by more small community hospitals in 2011 compared to 2004 (all issues had a higher mean articulation in 2011). Only four strategic issues were articulated less often and/or by fewer small community hospitals: *board member succession planning*, *educational opportunities for senior management*, *senior management performance appraisals*, and *relations with academic institutions affiliated with recognized programs in health related fields*. The majority of issues had higher articulation values, indicating that on average, small community hospitals showed a trend towards increased articulation of issues in 2011 compared to 2004. Conversely, the findings in Figure 5.4 show that large community and teaching hospitals show the opposite trend, towards decreased articulation of strategic issues in 2011 compared to 2004.

Figure 5.4 shows that two issues have statistically significant higher articulation by small community hospitals in 2011: *planning based on changing demographics* and *innovations in new technology for diagnosis and/or treatment*. Large community hospitals showed statistically significant differences in articulation for eight strategic issues, seven of which were reductions in articulation (meaning fewer large community hospitals are articulating the issue). Even though all hospitals now indicate that they articulate *patient satisfaction*, only large community hospitals had a statistically significant difference in mean articulation between 2011 and 2004. The four issues with statistically significant differences in articulation for teaching hospitals were all reductions in articulation. The reductions in articulation echoed the overall trend towards decreased articulation of issues, possibly indicating larger hospitals are increasing their focus on particular issues (they have reduced the breadth of issues articulated in order to focus more intently on the ones that are articulated).

Figure 5.4 Mean difference (2011-2004) in *articulation* of strategic issues by acute care hospitals responding both years of the survey, grouped by hospital type (n_{SC}=6, n_{LC}=29, n_T=9)

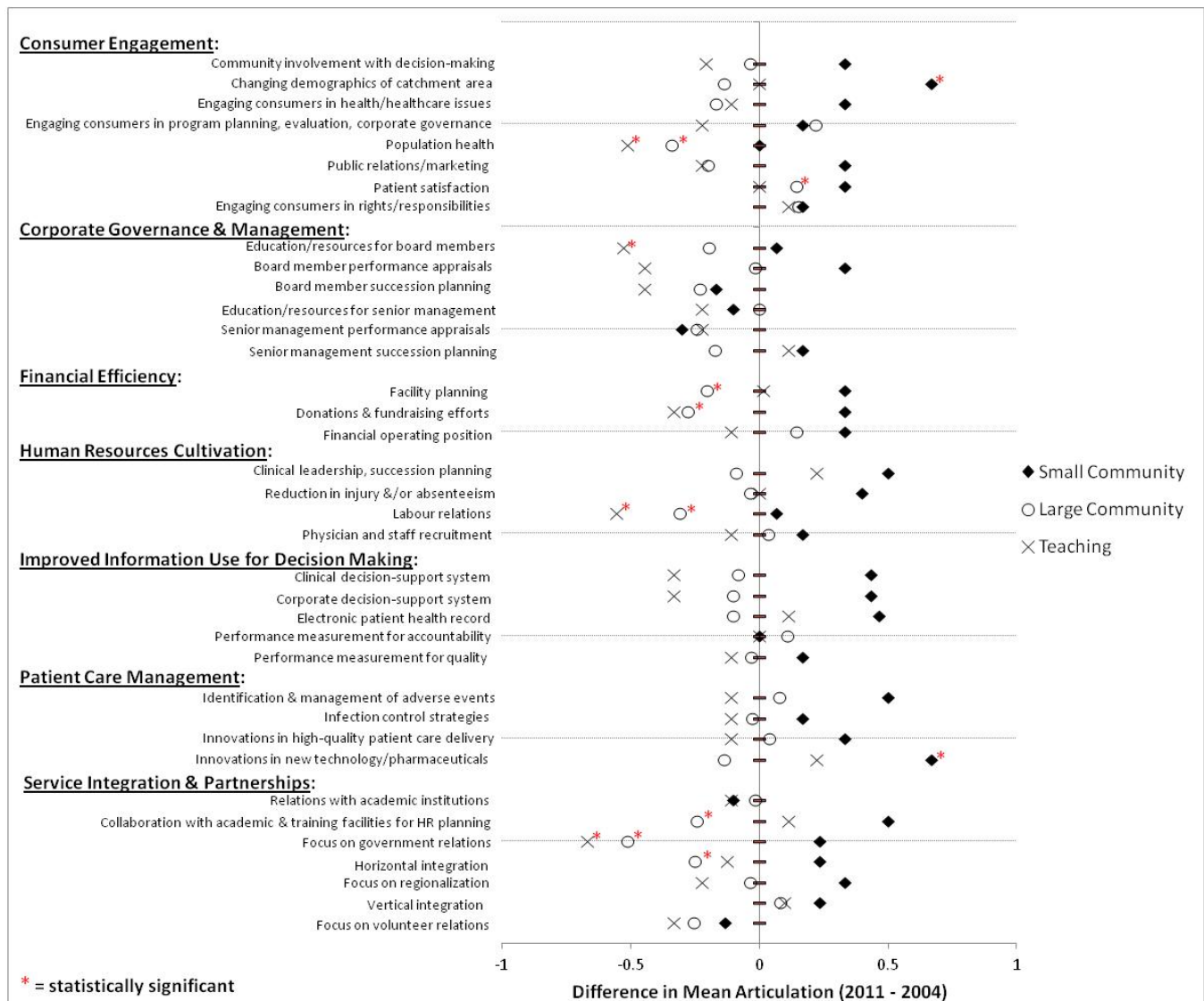
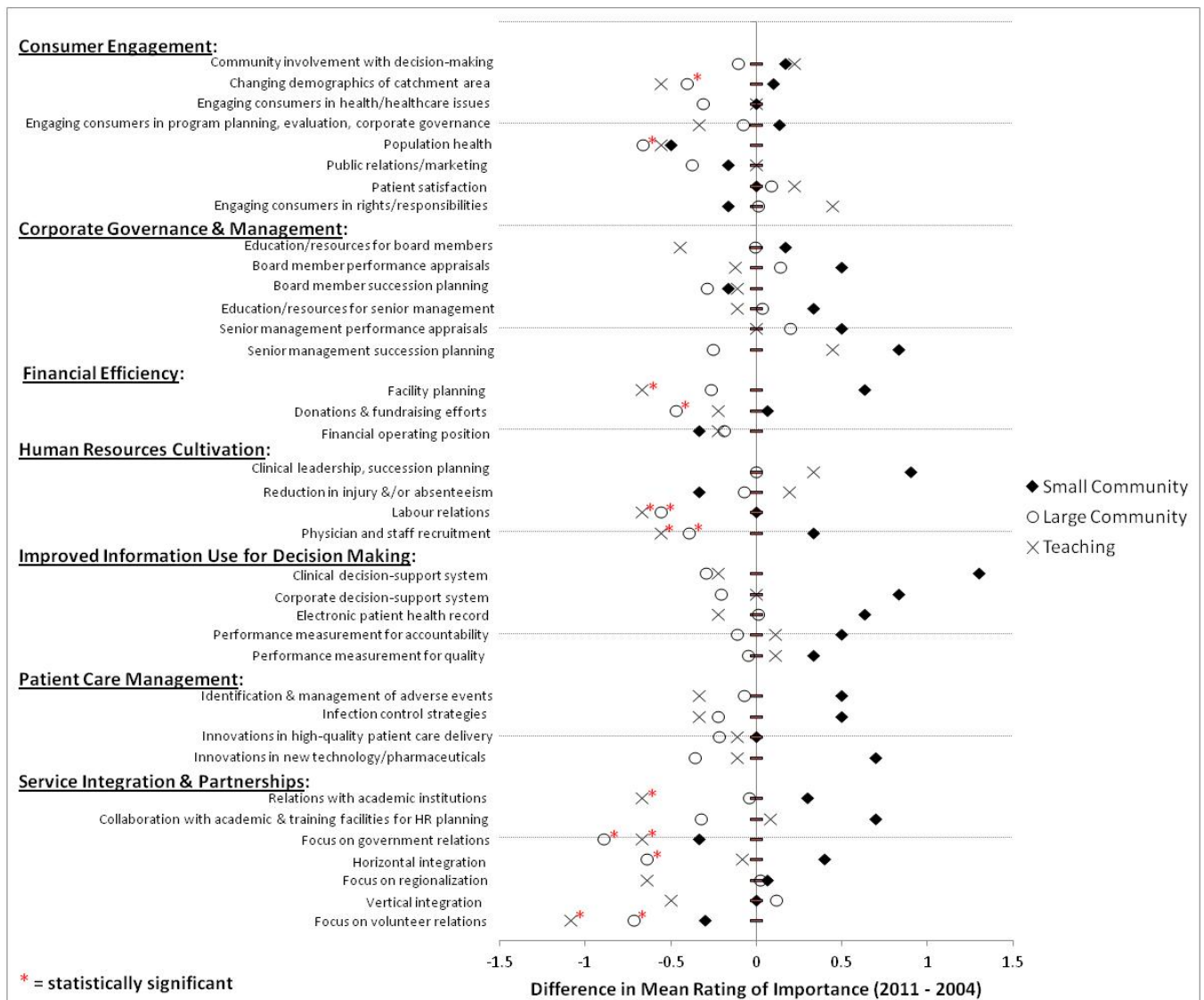


Figure 5.5 shows that most differences in ratings of importance by small community hospitals arose due to increased ratings in 2011, although no differences were statistically significant. With few exceptions, large community and teaching hospitals' mean ratings of importance of strategic issues are lower in 2011 than in 2004, indicating a trend of decreased importance to these larger hospitals (see Figure 5.5). Statistically significant differences in ratings of importance were found for eight of the thirty-seven issues in the large community group and six of the thirty-seven issues in the teaching hospitals group.

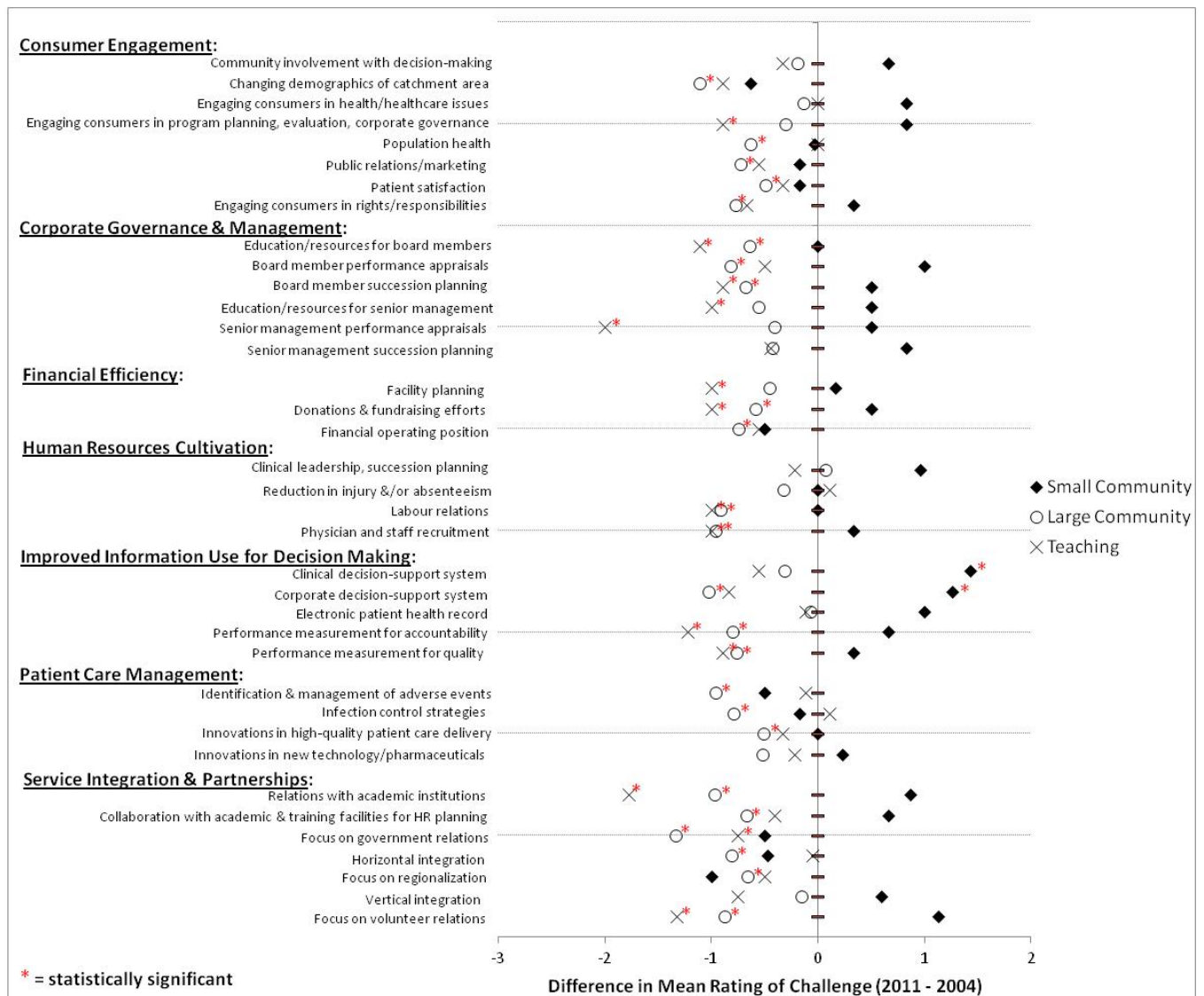
Figure 5.5 Mean difference (2011-2004) in importance of strategic issues to the organization's strategic direction by acute care hospitals responding in both survey years, grouped by hospital type (n_{SC}=6, n_{LC}=29, n_T=9)



Compared to 2004, most issues were rated as more challenging by small community hospitals in 2011 (see Figure 5.6). The mean difference in ratings of challenge of strategic issues by small community hospitals was 0.33 higher in 2011 compared to 2004. Two issues were rated as significantly more challenging: *implementing corporate decision support system* (increased by 0.43, n=6) and *implementing clinical decision support* (0.43, n=6). These two issues align with reporting and data collection, highlighting the challenge associated with data collection and reporting for small community hospitals (see chapter six for related findings). Large community and teaching hospitals rated the majority of issues as less challenging in 2011 (mean reduction in

ratings of issues were 0.62 and 0.65). Large community hospitals rated the most issues significantly different (twenty-four), followed by teaching hospitals (fourteen).

Figure 5.6 Mean difference (2011-2004) in *challenge* of strategic issues to the organization's long term sustainability by acute care hospitals responding in both survey years, grouped by hospital type (n_{SC}=6, n_{LC}=29, n_T=9)



In summary, small community hospitals generally showed a trend towards more articulation (average increase of 0.24), higher ratings of importance (average increase of 0.25), and higher ratings of challenge (average increase of 0.33). This is in contrast to large community and teaching hospitals whose trends were towards reduced articulation (average decrease of 0.09 and 0.16), lower ratings of importance (average decrease of 0.22 and 0.20), and lower ratings of

challenge (average decrease of 0.62 and 0.65). In order to determine whether these trends indicate a movement towards standardization or consensus in articulation, importance, and challenge, the shifts in hospital responses by type were compared to identify differences between the response shifts in 2011 compared to 2004.

Large community hospitals had the highest number of significant differences in articulation, ratings of importance, and ratings of challenge between the two survey years (see Figures 5.4 to 5.6). The fewer significant differences for small community and teaching hospitals is likely a consequence of the small number of hospitals in these two groups that responded in both survey years (n=6 and n=9, respectively). Small sample sizes reduce the power of statistical tests, resulting in fewer significant differences (null hypothesis is less likely to be rejected) between 2011 and 2004. Non-significant results can still be used when interpreting the findings because they still reveal an overall trend. As well, because significant differences are more difficult to obtain with small sample sizes, they can potentially show the strength of findings.

5.3.3. Comparison of strategic issues results by hospital type

ANOVA analyses were used to compare results by hospital type for hospitals that responded in both 2004 and 2011. The findings are shown in Figures 5.7 to 5.12. Statistically significant differences at a five percent level of significance with a Bonferroni correction (see section 3.5.1) are indicated by an asterisk (see Tables K.13 to K.18 in Appendix K for numerical results).

It is notable that only one strategic issue had a significant difference in articulation when hospital types are compared in 2011 (see Figure 5.7) compared to the 2004 findings (Figure 5.8). Differences between hospital types appeared more centred around zero in 2011 (Figure 5.7) when compared to the 2004 findings (Figure 5.8). Differences closer to zero suggest a move towards standardization in articulation in 2011 because many of the differences between hospitals (regardless of type) have become smaller compared to 2004. Differences in 2004 indicate that small community (SC) hospitals articulated issues less frequently than teaching (T) and large community (LC) hospitals (Figure 5.8).

Figure 5.7 Mean difference in *articulation* of strategic issues between hospital types in 2011 for hospitals responding in both survey years, (n_{SC}=6, n_{LC}=29, n_T=9)

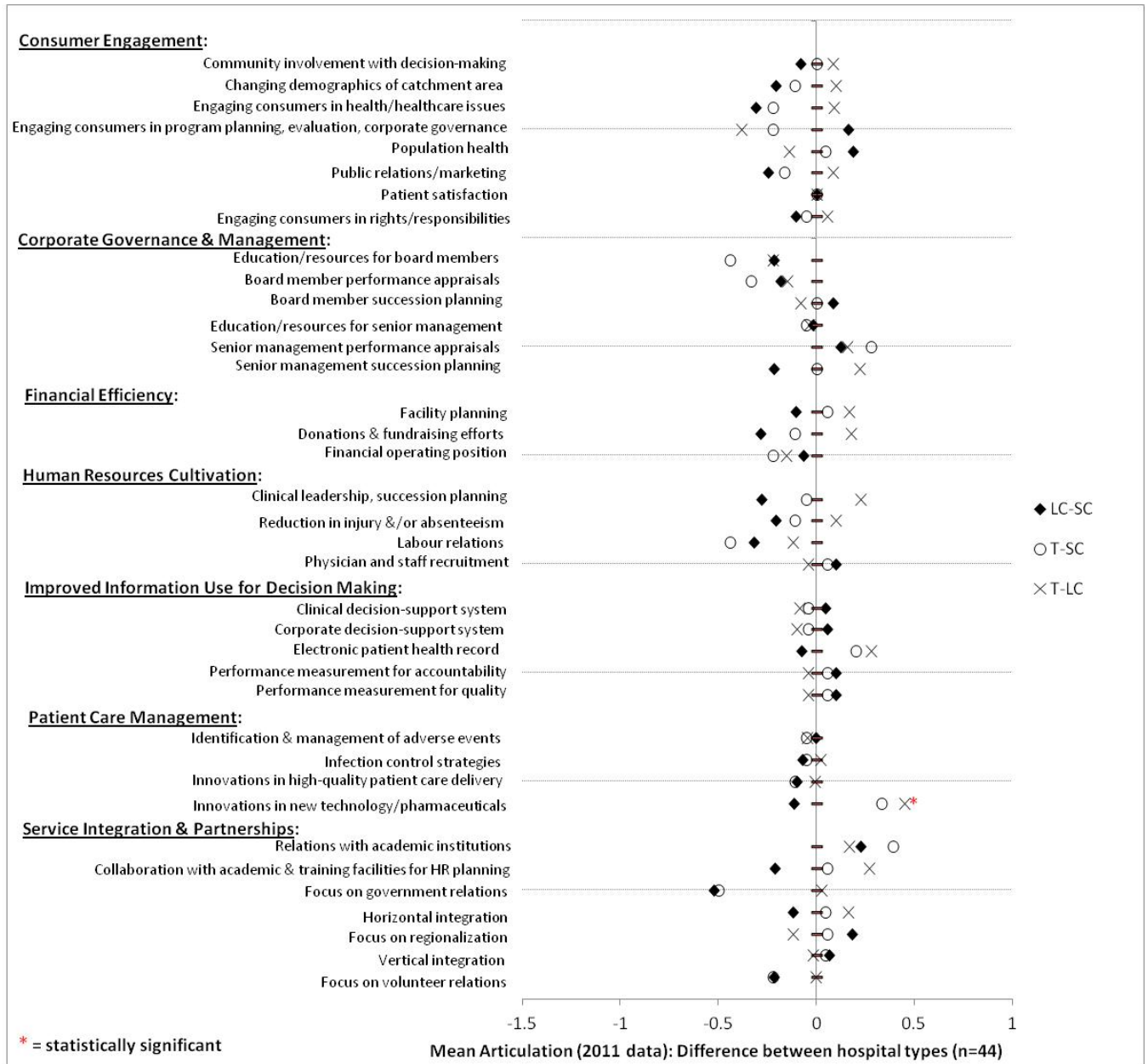
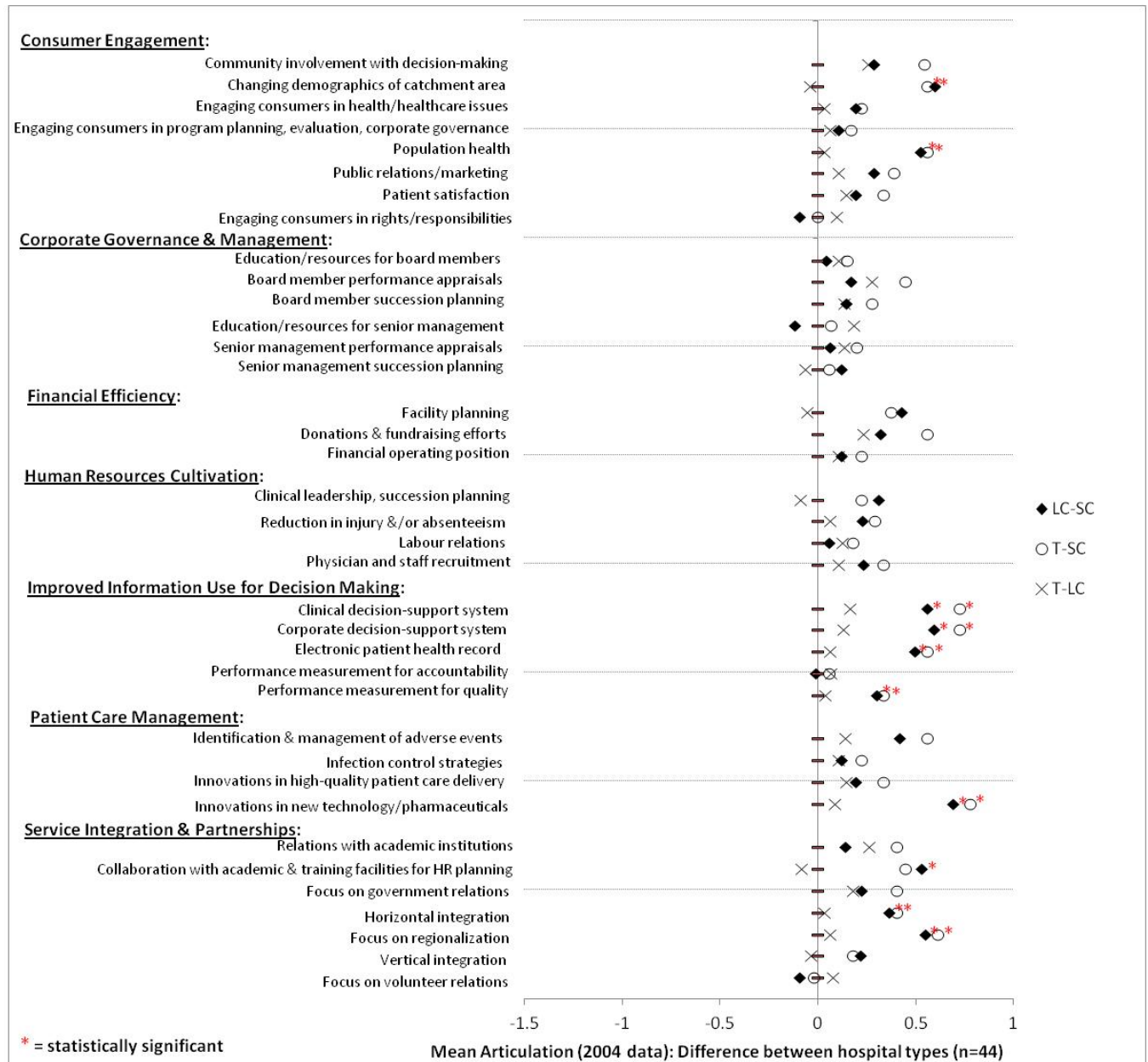


Figure 5.8 Mean difference in *articulation* of strategic issues between hospital types in 2004 for hospitals responding in both survey years, ($n_{SC}=6$, $n_{LC}=29$, $n_T=9$)



Comparison of the findings for ratings of importance in 2011 (Figure 5.9) and 2004 (Figure 5.10) also suggest greater consistency between hospital types in 2011. Fewer differences between hospital types are significant (one difference in 2011 and three differences in 2004); small community hospitals have increased their ratings of importance compared to larger hospitals, and vice versa. These shifts led to smaller differences in ratings of importance between hospital types in 2011 compared to 2004.

Figure 5.9 Mean difference between ratings of *importance* of strategic issues between hospital types in 2011 for hospitals responding in both survey years, (n_{SC}=6, n_{LC}=29, n_T=9)

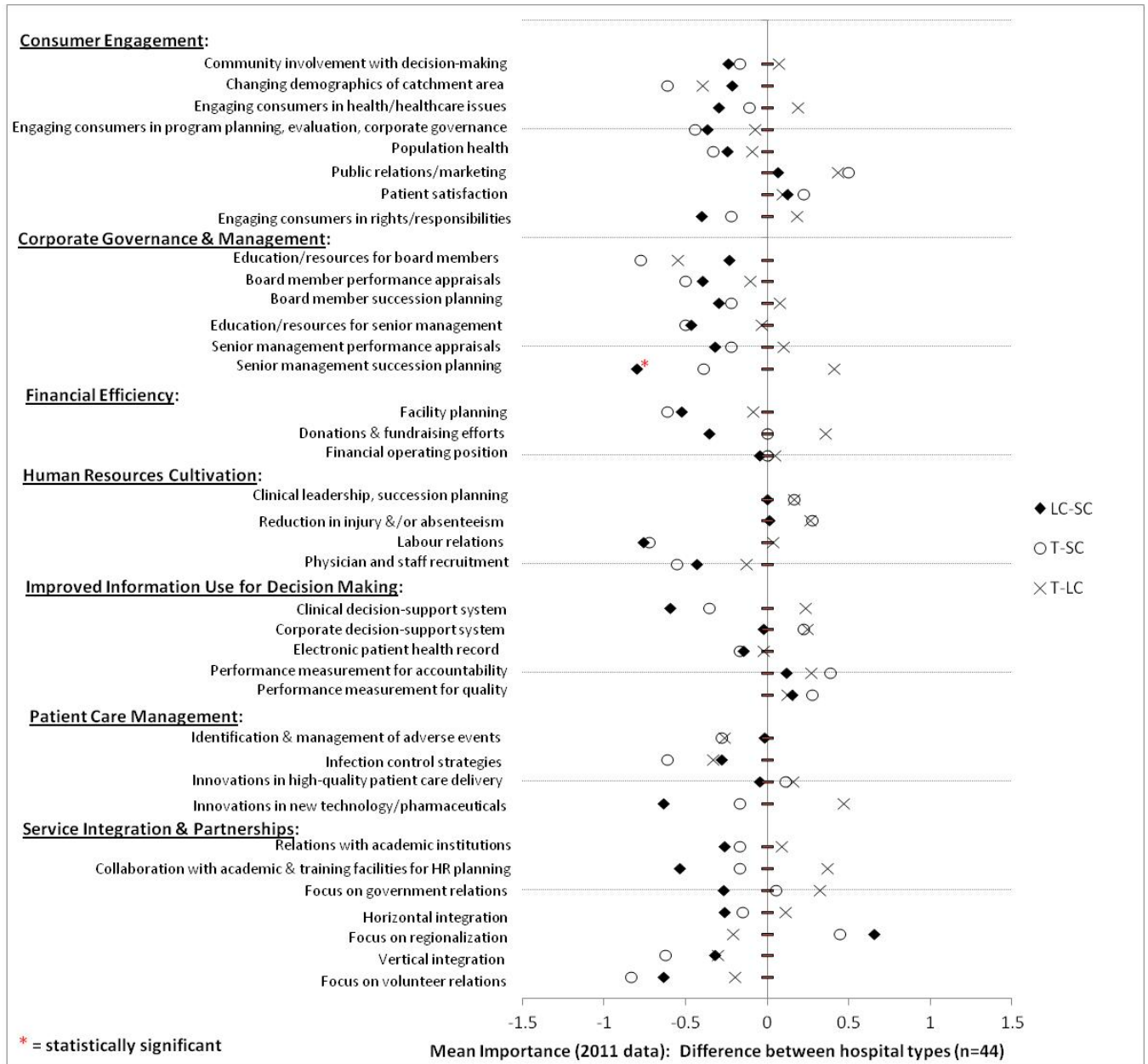
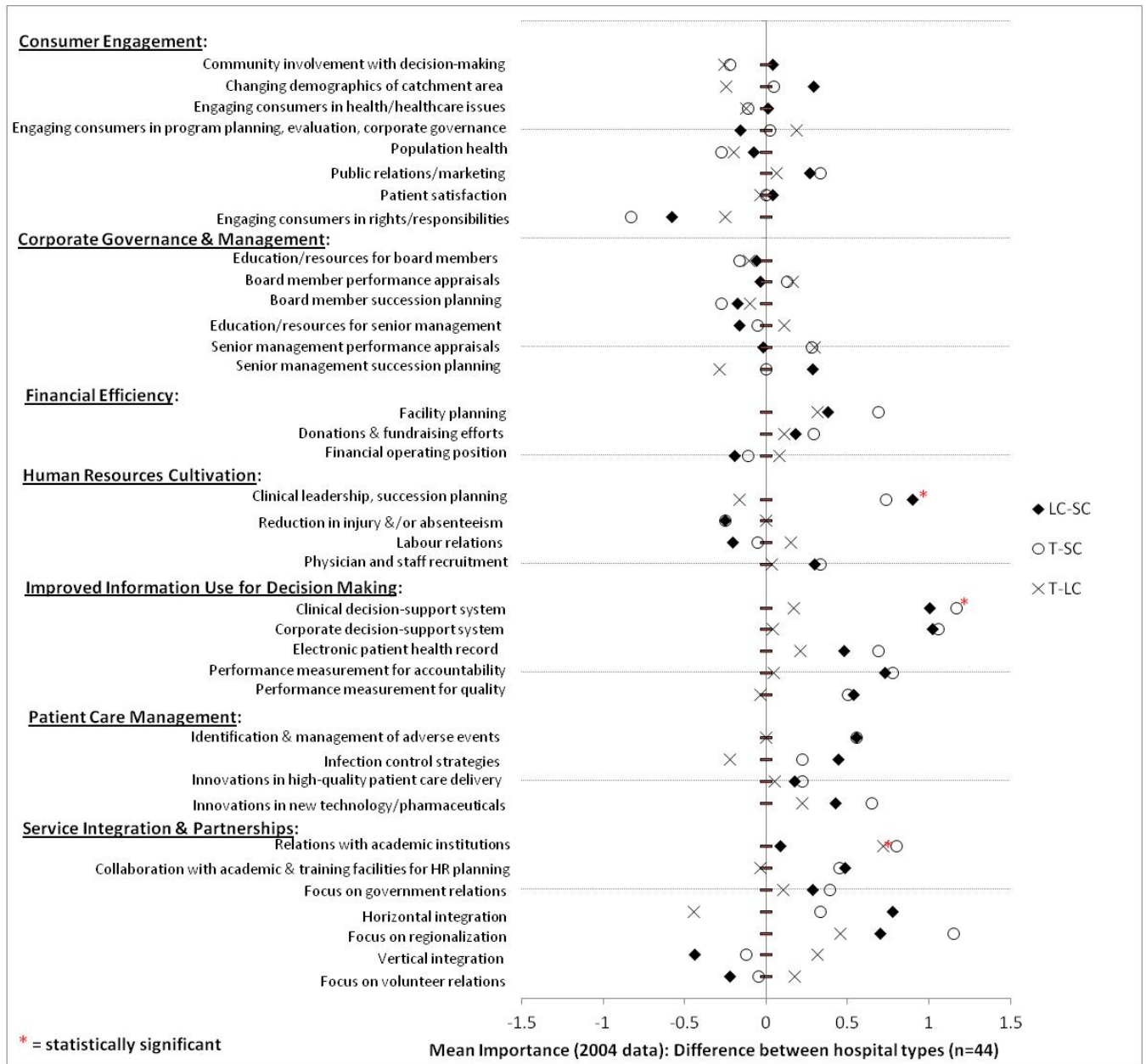


Figure 5.10 Mean difference between ratings of importance of strategic issues between hospital types in 2004 for hospitals responding in both survey years, (n_{SC}=6, n_{LC}=29, n_T=9)



The findings for ratings of challenge of strategic issues in 2011 (Figure 5.11) and 2004 (Figure 5.12) also suggest a shift in ratings by small community hospitals. Data points indicate that larger hospitals rate the challenge of issues differently than small community hospitals in both 2011 and 2004. In 2011 small community hospitals rated issues as more challenging than larger hospitals, the opposite to what was found in 2004.

Figure 5.11 Mean difference between ratings of *challenge* of strategic issues between hospital types in 2011 for hospitals responding in both survey years, (n_{SC}=6, n_{LC}=29, n_T=9)

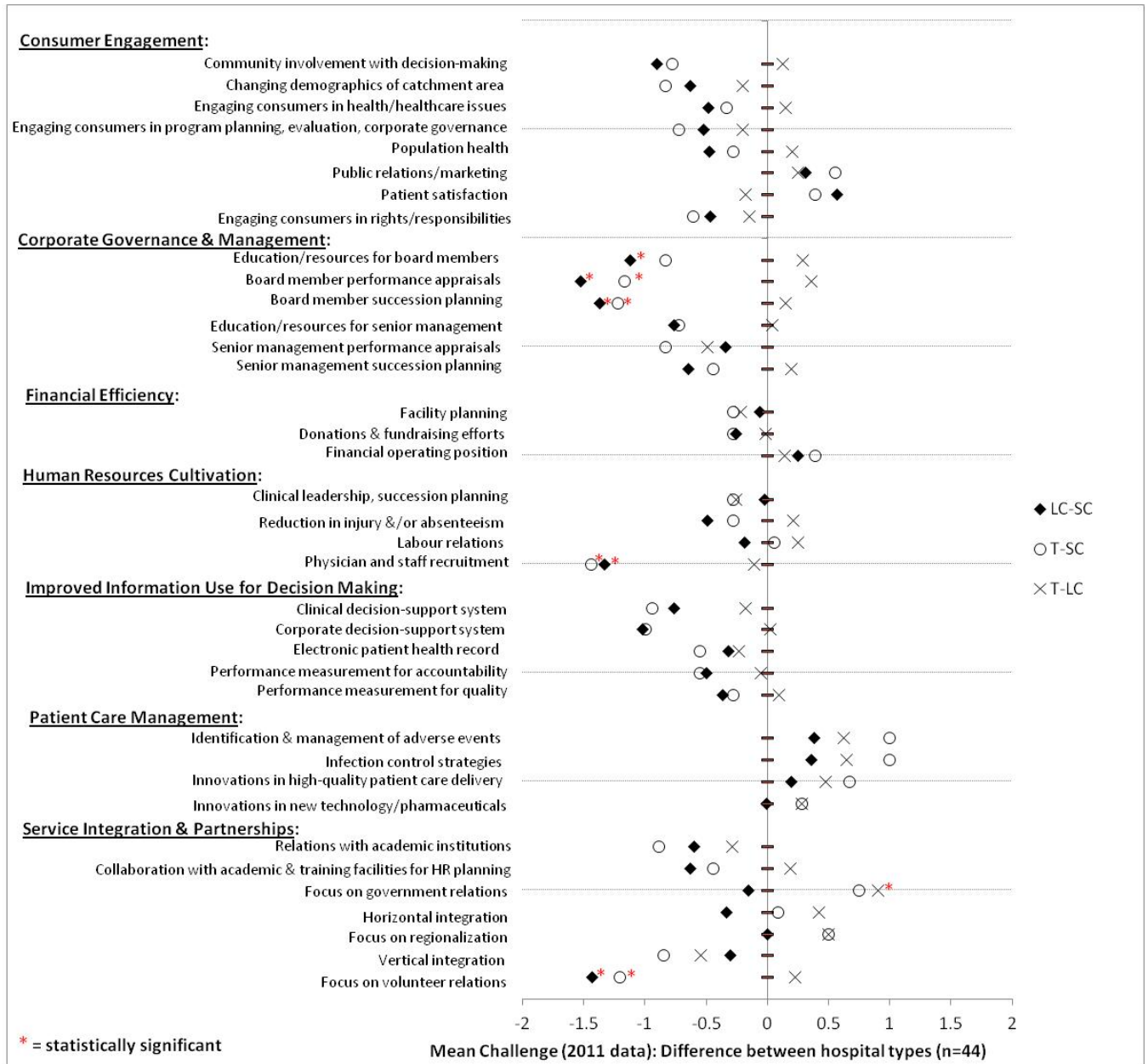
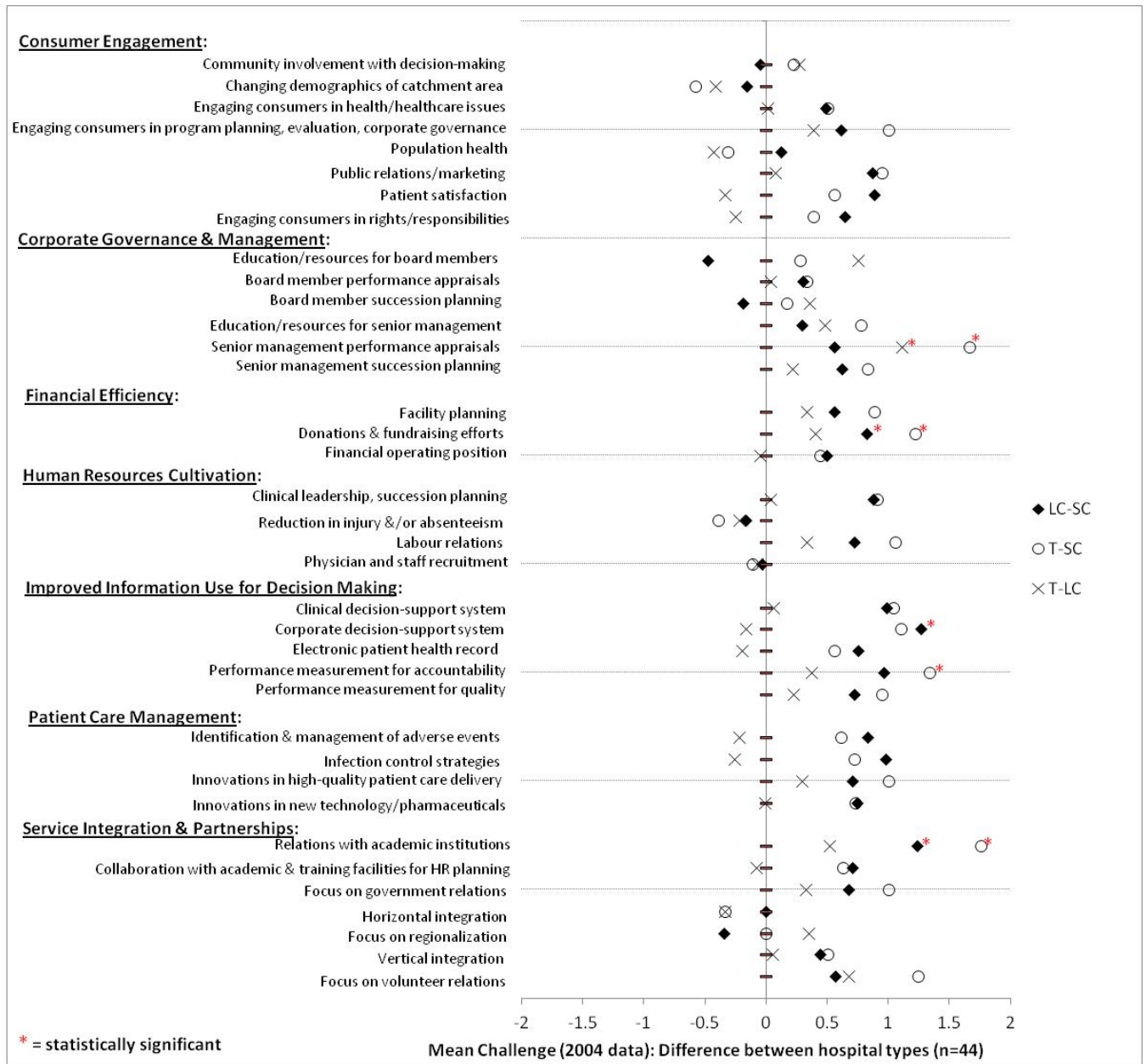


Figure 5.12 Mean difference between ratings of challenge of strategic issues between hospital types in 2004 for hospitals responding in both survey years, (n_{SC}=6, n_{LC}=29, n_T=9)



Fewer differences between hospital types in 2011 compared to 2004 were statistically significant (see Figures 5.7 to 5.12). This suggests a trend towards increased similarity or standardization in responses (articulation and ratings) between hospital types. The findings also demonstrate that significant differences between hospital types occur most often when small community hospitals are compared to larger hospitals. These findings suggest a shift in the responses of small community hospitals in 2011 compared to 2004; they rated issues as less important and less

challenging than both large community and teaching hospitals in 2004, then rated issues as more important and more challenging in 2011 when compared to larger hospitals. These findings echo those shown in Figures 5.4 to 5.6 (refer to Tables K.4 to K.18 in Appendix K).

In order to reveal trends not apparent at the level of the strategic issue, the strategic issues were grouped into domains and analyzed. The next section provides the findings from of this analysis.

5.4. Aggregate survey results of strategic domains

Each strategic issue was categorized within one domain following Brown et al. (2005a) as listed in Appendix B. Throughout the remainder of this thesis, domain names are italicized and the first letter of each word is capitalized. The seven domains are:

1. Consumer Engagement
2. Corporate Governance and Management
3. Financial Efficiency
4. Human Resources Cultivation
5. Improved Information Use for Decision Making
6. Patient Care Management
7. Service Integration and Partnerships

All domain scores were converted to a scale of 0 to 100 using the formula found in section 3.4.8. The domains were analyzed using the same ANOVA techniques as the strategic issue data (see sections 3.5 and 5.3) to reveal domain level trends that may not be apparent from analysis of data at the level of the strategic issue (section 5.3).

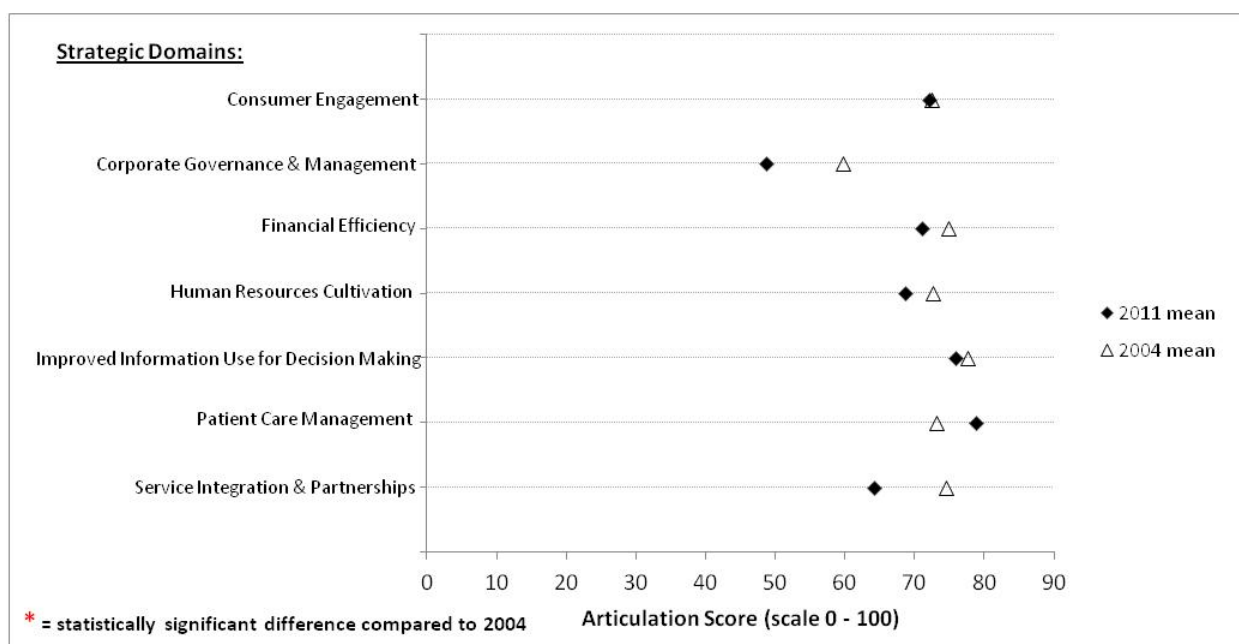
5.4.1. Aggregate survey results for strategic domains

The following three graphs present findings from ANOVA analysis of the aggregate domain data from the 2011 and 2004 surveys for hospitals that responded in both years. Statistically significant differences at a five percent level of significance with a Bonferroni correction (see section 3.5.1) are indicated by an asterisk (Tables K.1 to K.3 in Appendix K present numerical data). Figure 5.13 indicates that fewer hospitals articulated five of the seven domains in 2011 compared to 2004 (Table K.1 in Appendix K provides numerical results). In 2011, hospitals focused on articulating issues in the domain of *Patient Care Management* (its domain score was higher than in 2004), and did not change their articulation score for the domain of *Consumer Engagement* compared to 2004. These findings for the domains of *Patient Care Management* and *Consumer Engagement* highlight a patient-centred focus in the issues articulated by

hospitals. Hospitals continue to recognize the need for consumer engagement and participation in health care issues.

The largest decrease in articulation scores were for the domains *Corporate Governance and Management* (reduced by 11.0) and *Service Integration and Partnerships* (reduced by 10.4). These two reductions in articulation indicate a shift away from focusing on issues of organizational governance and organizational partnerships. This latter finding could be a result of the LHIN's responsibility for identifying and encouraging integration opportunities, which meant that hospitals could leave integration efforts to their LHIN.

Figure 5.13 Aggregate results for the mean domain score of articulation score in 2011 and 2004 for hospitals responding in both years (n=44)



The graph in Figure 5.14 shows the aggregate mean hospital ratings of importance for the strategic domains in 2011 and 2004 (Table K.2 in Appendix K provides numerical results, 2011 and 2004 scores are not significantly different). The scores for *Consumer Engagement* and *Patient Care Management* did not change in 2011 compared to 2004, indicating that these domains (or areas) have maintained their importance, even as the importance of their respective strategic issues changes. The largest difference was the score for *Improved Information Use for Decision Making*; an increase of 5.3 units to make it the highest scored domain in 2011. This increase suggests an increased importance of using information (even increasing data quality) for

decision making in hospitals. Not surprisingly, this domain contains the strategic issues related to performance measurement for quality and accountability, two issues tied to the current environment of accountability.

In 2004, *Financial Efficiency* was the highest scored domain (84.6), it dropped slightly to the second highest scored domain in 2011 (score of 82.6), indicating its continued importance. *Corporate Governance and Management* had a slightly higher importance score in 2011, even though its articulation score decreased. Thus, even though its issues are not articulated as often by hospitals, the domain's importance score reveals the domain remained important to hospitals. The final two domains had slightly lower importance scores in 2011 compared to 2004: *Human Resources Cultivation* (76.6 and 78.6), and *Service Integration and Partnerships* (71.5 and 75.6). Their scores continued to indicate that these areas are important to Ontario's acute care hospitals.

Figure 5.14 Aggregate survey results for the mean domain score of importance in 2011 and 2004 for hospitals responding in both years (n=44)

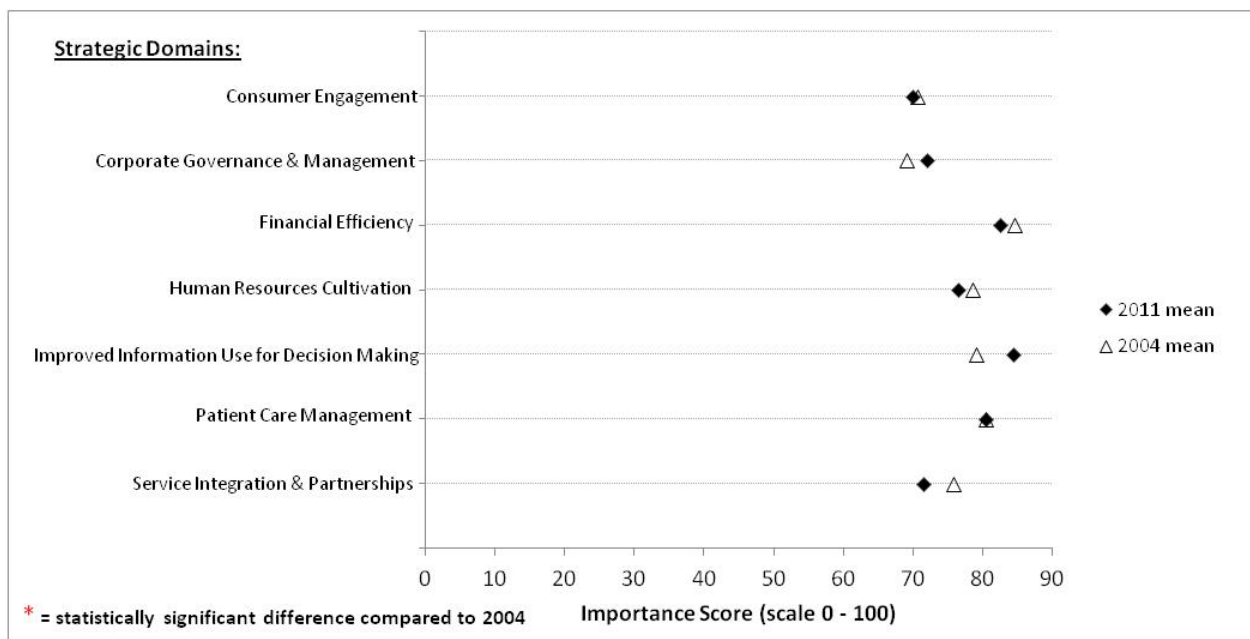
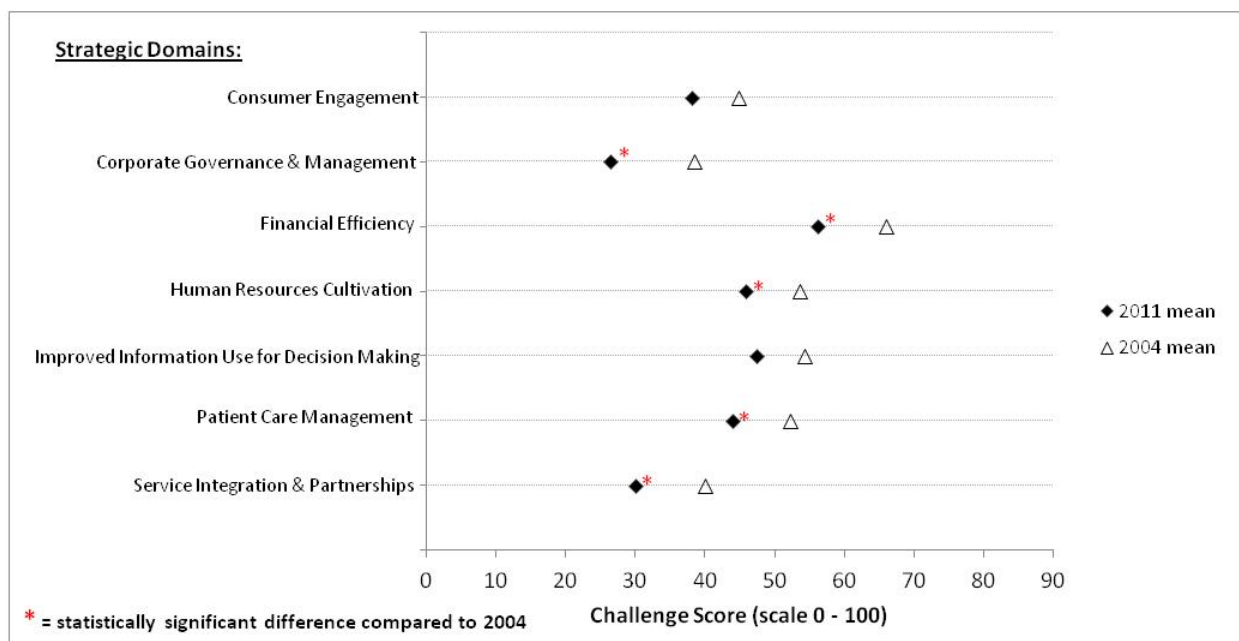


Figure 5.15 shows the aggregate mean challenge associated with the strategic domains (for detailed data, see Table K.3 in Appendix K). All domains were rated as less challenging in 2011 than in 2004. All reductions in challenge score were statistically significant at a level of five percent except for *Consumer Engagement* and *Improved Information Use for Decision Making*. The domain with the highest mean challenge score in 2011 and 2004 was *Financial Efficiency*

(56.3 and 65.9). Therefore, the *Financial Efficiency* domain remained the most challenging of the strategic domains, as well as being rated as highly important in both survey years. *Corporate Governance and Management* also showed stability in its ranking between the two survey years; it maintained the lowest rating of challenge in 2011 (26.4), and had the largest decrease in challenge score from 2004 (reduction of 12.1).

Figure 5.15 Aggregate results for the mean domain score of challenge in 2011 and 2004 for hospitals responding in both years (n=44)



Differences in domain scores were also compared by survey year, grouped by hospital type to determine whether scores were significantly different between survey years (2004 and 2011) at a five percent level of significance. These findings are presented in the next section.

5.4.2. Survey results of strategic domains by hospital type

ANOVA was used to compare responses between 2004 and 2011 by type of hospital for hospitals that responded in both survey years (n=44). These findings showed whether the trends observed in aggregate held for each type of hospital separately, or whether there were differences between the types of hospitals. Figures 5.16 to 5.18 show the differences in domain scores between 2011 and 2004 for articulation, importance, and challenge by hospital type. Statistically significant differences at a five percent level of significance with a Bonferroni correction (see

section 3.5.1) are indicated by an asterisk. Numerical results are provided in Tables K.4 to K.12 in Appendix K.

Small community hospitals responding in both survey years increased their articulation of issues between 2011 and 2004 (see Figure 5.4 above). Increased articulation is also shown in Figure 5.16 in that all domains had higher articulation scores in 2011. The largest increase in domain score for articulation by small community hospitals was for *Patient Care Management* (increased by 41.7). This finding aligns with aggregate data findings and suggests that small community hospitals are more focused on issues related to patient care. Increases in domain scores of articulation for small community hospitals are contrasted with the findings from large community and teaching hospitals, whose scores decreased for all domains (teaching) or six of the seven domains (large community) in 2011 compared to 2004. Only the domain score for articulation of *Patient Care Management* for large community hospitals increased slightly in 2011 (increased by 0.9).

Figure 5.16 Aggregate mean difference (2011-2004) in domain *articulation* scores by acute care hospitals responding both years of the survey (n=44), grouped by hospital type

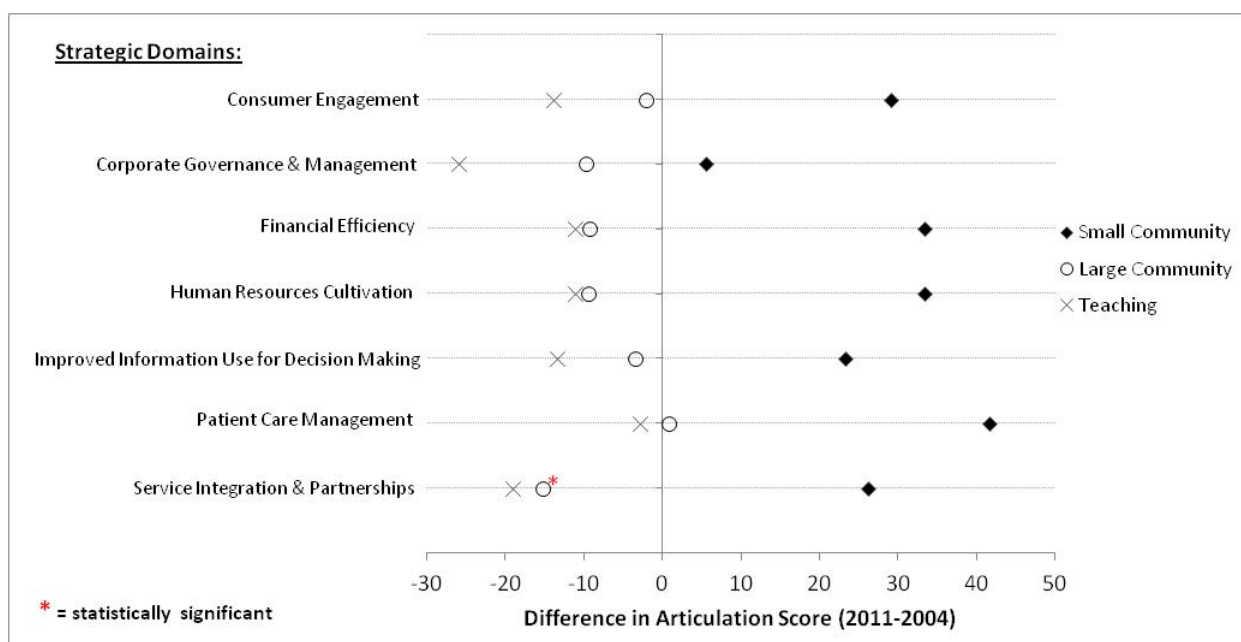


Figure 5.16 shows that the only significant difference in articulation score found for large community hospitals was for the domain *Service Integration and Partnerships*. No differences in domain scores of articulation were statistically significant for teaching hospitals. The dearth of statistically significant differences indicates stability in the articulation scores of domains. The effect of small sample sizes is also apparent in that the only significant difference in articulation score was found for large community hospitals (n=29). This significant difference was smaller in magnitude than many of the other differences for small community (n=6) and teaching (n=9) hospitals, indicating that small sample sizes had an effect on statistical significance.

The differences in domain scores of importance shown in Figure 5.17 indicate that small community hospitals increased their ratings of importance in 2011. *Improved Information Use for Decision Making* was the only domain rated as significantly more important (increased by 30.0). It is notable that the domain score of importance for *Financial Efficiency* provided by small community hospitals is higher in 2011 than in 2004. A higher domain score in 2011 indicates that *Financial Efficiency* is more important, whereas the issues grouped in this domain were not all rated as more important in 2011 compared to 2004 (see Figure 5.5 above). Ratings for strategic issues do not always reveal overall trends; hence, the usefulness of analyzing domain scores that may reveal trends not apparent at the level of the issue. The domain of *Consumer Engagement* had the smallest reduction in importance score for both small and large community hospitals, indicating stability in its importance between 2004 and 2011.

Five of the seven domains were given lower importance scores by large community hospitals and all domains were given lower importance scores by teaching hospitals (Figure 5.17), suggesting a trend towards reduced importance of strategic issues and their domains in 2011. Both types of larger hospitals reduced their scores of importance in 2011 for the domains of *Financial Efficiency*, *Human Resources Cultivation*, *Patient Care Management*, and *Service Integration and Partnerships*. Large community hospitals increased their domain scores in 2011 for two domains: *Corporate Governance and Management*, and *Improved Information Use for Decision Making*. Compared to small community hospitals, large community hospitals appear to have stable domain scores between 2011 and 2004.

Financial Efficiency had the largest reduction in domain score by teaching hospitals and was the only domain scored significantly different in 2011 compared to 2004. Statistical significance is

of particular note given the small sample size for teaching hospitals, reducing the power of statistical tests. The second largest reduction in domain score of importance was for *Service Integration and Partnerships*, suggesting teaching hospitals do not score issues of integration as important in 2011 compared to 2004. This reduction could be a result of the creation of LHINs, which have a mandated role in integration efforts. *Corporate Governance and Management* had the smallest change in domain score of importance for teaching hospitals, highlighting the stability of its importance over time for teaching hospitals.

Figure 5.17 Aggregate mean difference (2011-2004) in domain importance scores by type of acute care hospital, responding both years of the survey (n=44)

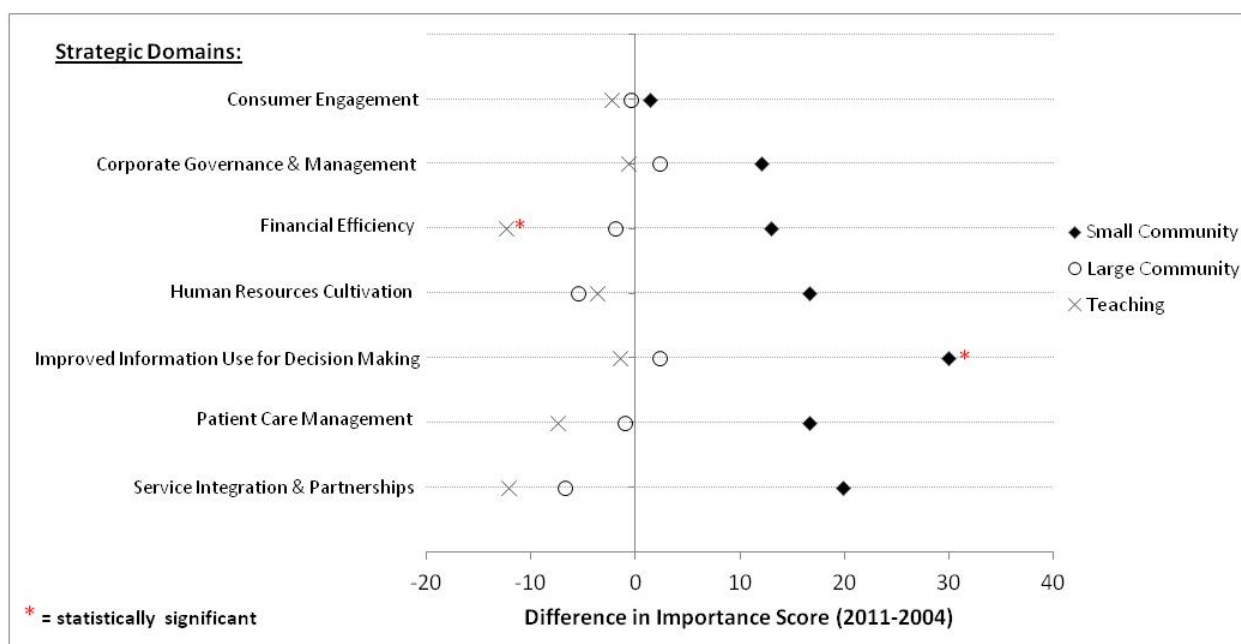


Figure 5.18 shows the findings for differences in domain scores between 2011 and 2004 for hospitals grouped by type. Refer to Tables K.10 to K.12 in Appendix K for numerical findings. Note that domain scores of challenge for small community hospitals increased in 2011 compared to 2004 for all domains except *Patient Care Management*; its domain score was lower. Figures 5.16 and 5.17 showed that small community hospitals gave *Patient Care Management* a higher score of articulation and importance in 2011, suggesting an increased focus on issues in this domain. This increased focus on appeared to have led to the decreased challenge score for small

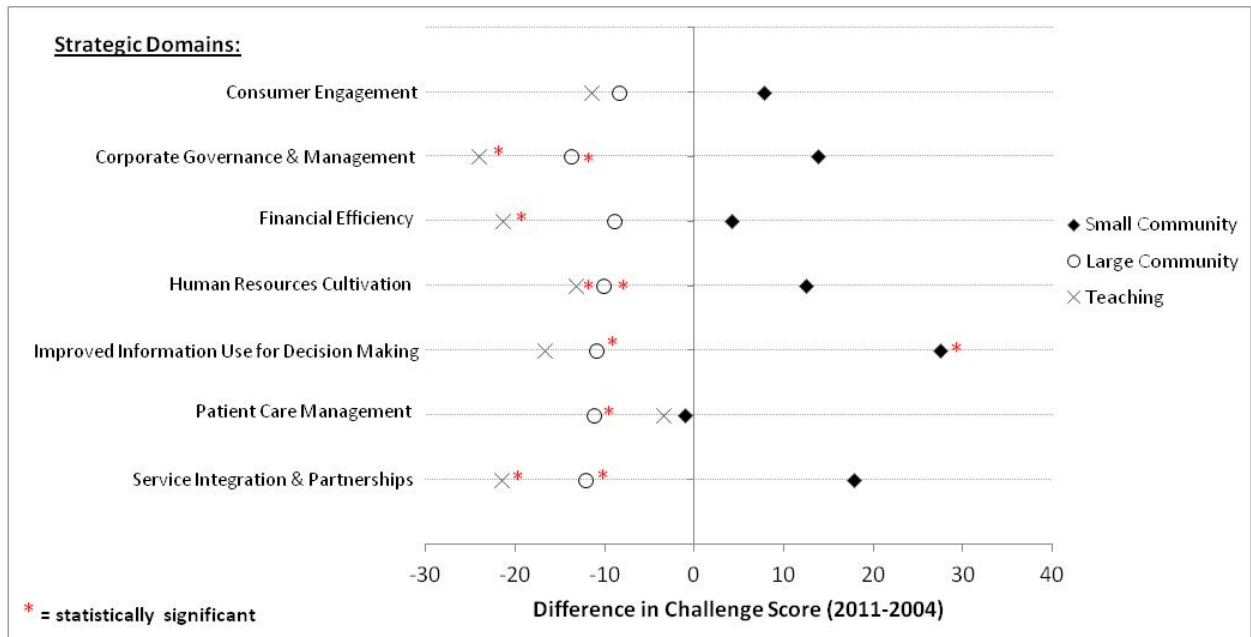
community hospitals. The apparent correlation between an increased focus and a reduced challenge is especially interesting in that the challenge score of all other domains increased for small community hospitals (see Figure 5.18).

Small community hospitals scored the domain of *Improved Information Use for Decision Making* as significantly more challenging (Figure 5.18), as well as significantly more important (Figure 5.17). The higher scores in 2011 were expected because all issues in this domain were rated as more important and more challenging by small community hospitals in 2011 (see Figures 5.5 and 5.6 above, and Tables K.5 and K.6 in Appendix K). *Financial Efficiency* is also scored as more challenging by small community hospitals as shown in Figure 5.18. The strategic issues grouped in the domain of *Financial Efficiency* were not all rated as more challenging by small community hospitals in 2011 (see Figure 5.6). Thus, the domain score revealed an overall trend towards increased challenge that is not as apparent when the issues are examined individually.

Large community and teaching hospitals had lower challenge scores for all domains in 2011. Teaching hospitals made larger reductions compared to large community hospitals, except for the domain of *Patient Care Management*. Large community hospitals responded with the largest reduction in this domain score. The largest decreases in domain score for challenge were reported by teaching hospitals for *Corporate Governance and Management* (decrease of 24.1), followed by *Service Integration and Partnerships* (decrease of 21.4). These two results are of interest because while both these domains remain a challenge to teaching hospitals in 2011, their scores decreased, even in an environment of health system restructuring and greater external requirements for accountability, including aspects of governance and integration.

These findings for changes in domain scores of challenge echo those for changes in articulation and importance scores: the domain scores of small community hospitals increased while the scores for large community and teaching hospitals decreased.

Figure 5.18 Aggregate mean difference (2011-2004) in domain scores of *challenge* grouped by acute care hospitals responding both years of the survey (n=44)



In summary, the findings from Figures 5.16 to 5.18 indicate that between 2004 and 2011 small community hospitals increased their domain scores of articulation, importance, and challenge. Contrasted to this were the reduced domain scores of articulation, importance, and challenge reported by large community and teaching hospitals. The results for the two types of larger hospitals align with the general trend towards decreased articulation, and lower ratings of importance and challenge shown by the aggregate data in Figures 5.1 to 5.3. The contrasting findings for small community hospitals indicate that hospital types are affected differently, especially small community hospitals. Interview data in chapter six will provide more information to explain these findings.

5.4.3. Comparison of strategic domains scores by hospital type

Domain scores from hospitals responding in both years were compared by hospital type to determine if small community, large community, and teaching hospitals differed significantly from each other in 2011 and/or 2004. Findings are presented in Figures 5.19 to 5.24. Statistically significant differences are indicated by an asterisk (numerical results can be found in Tables K.13 to K.18 in Appendix K).

Figure 5.19 reveals the differences between 2011 the domain scores of small community (SC), large community (LC), and teaching (T) hospitals have shifted compared to 2004 (Figure 5.20). Many differences between hospital types in 2011 for articulation scores were smaller than in 2004 and not statistically significant. Smaller differences indicated that small community hospitals responded more similarly to larger hospitals in 2011. The differences between teaching and large community hospitals do not change much between 2011 and 2004, indicating stability in scores. Figure 5.16 showed that in 2011 teaching hospitals reduced their domain scores for articulation more than large community hospitals. Figure 5.19 suggests that the reductions in Figure 5.16 moved teaching and large community hospitals towards the same mean articulation score because differences between the two hospital types are smaller in 2011 compared to 2004. These findings indicate a movement by all hospital types towards standardized domain scores for articulation: hospitals are increasingly choosing the same issues to articulate and focus on.

Figure 5.19 Mean difference in domain score of *articulation* between hospital types in 2011 for hospitals responding in both survey years, ($n_{SC}=6$, $n_{LC}=29$, $n_T=9$)

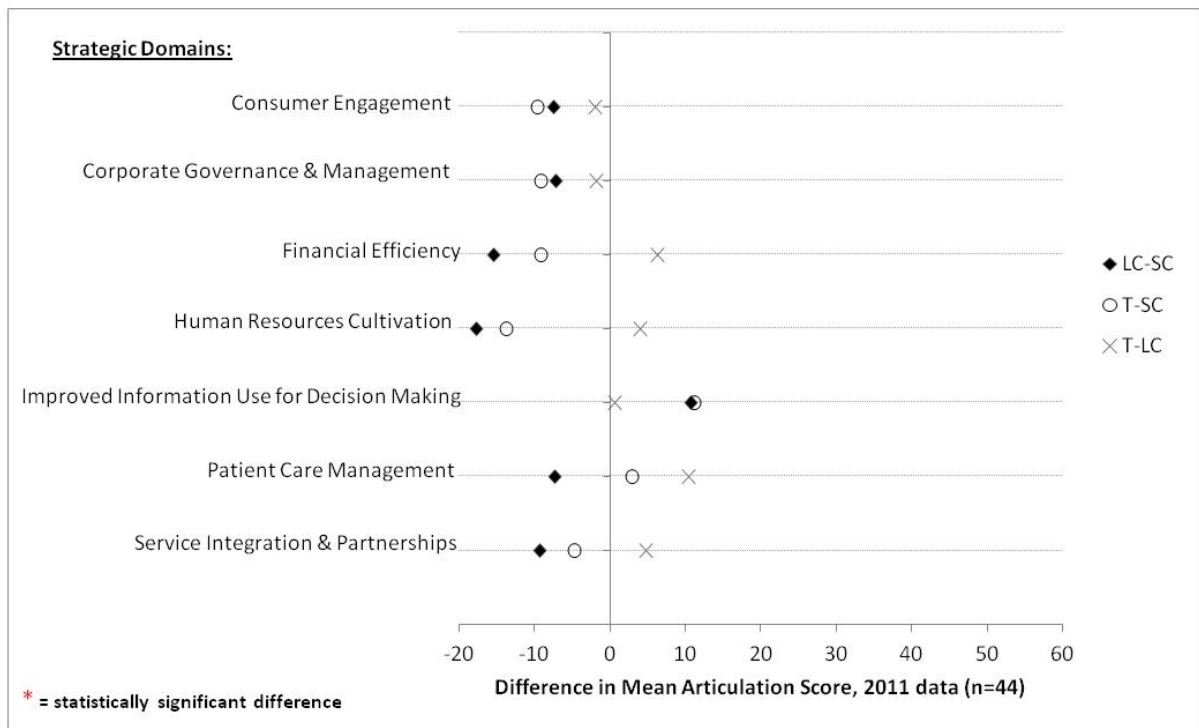
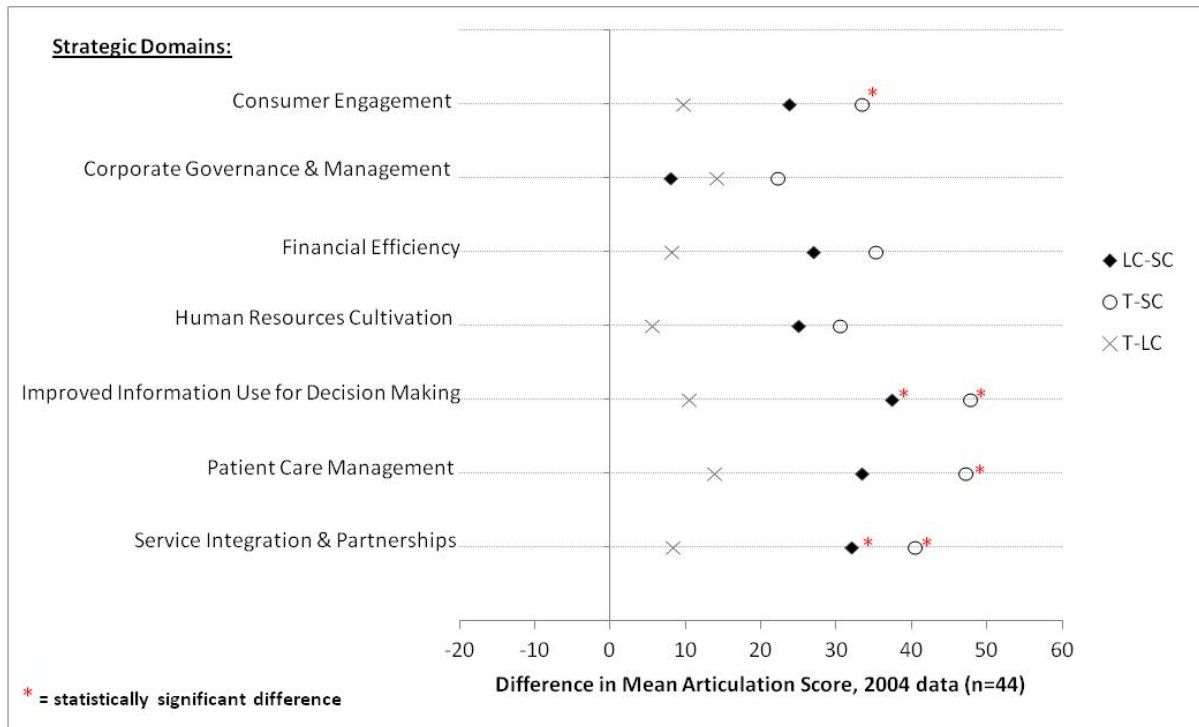


Figure 5.20 Mean difference in domain score of *articulation* between hospital types in 2004 for hospitals responding in both survey years, (n_{SC}=6, n_{LC}=29, n_T=9)



Differences between small community hospitals and larger hospitals presented in Figures 5.21 and 5.22 echo the findings presented in Figure 5.17: small community hospitals increased their domain scores of importance, whereas larger hospitals were more likely to decrease their domain scores. These changes resulted in a trend towards small community hospitals having higher domain scores of importance. Compared to 2004 findings, the 2011 differences between domain scores of importance for large community and teaching hospitals became smaller, indicating increased similarity in domain scores between these two types of hospitals.

Figure 5.21 also shows that there is less dispersion in differences between hospital types in 2011 (data points are more centred on zero, which indicates no difference between hospital types) compared to 2004. Figure 5.22 shows the predominance of positive differences in 2004, larger hospitals had higher domain scores of importance. These two figures suggest hospitals are moving towards standardized domain scores of importance; they are becoming more similar in their ratings of importance of strategic issues and thus the domain scores. Domain scores are more similar, suggesting that the current environment of regionalization, accountability, and

performance measurement has encouraged hospitals to focus on the same strategic issues and domains.

Figure 5.21 Mean difference in domain score of importance between hospital types in 2011 for hospitals responding in both survey years, (n_{SC}=6, n_{LC}=29, n_T=9)

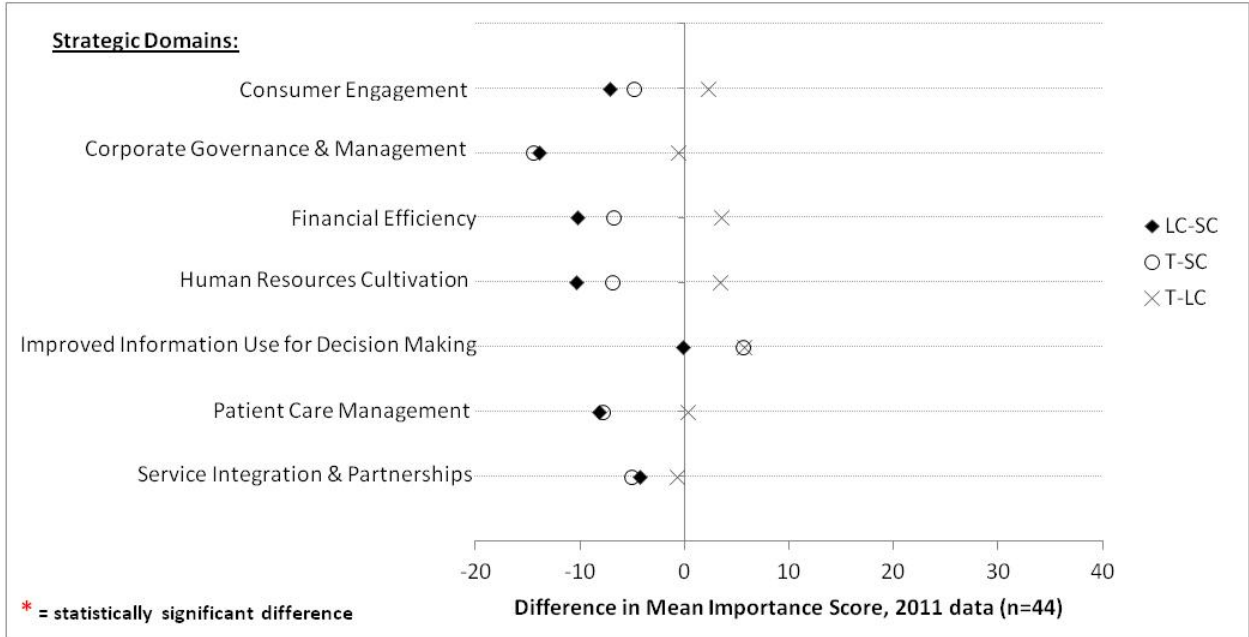
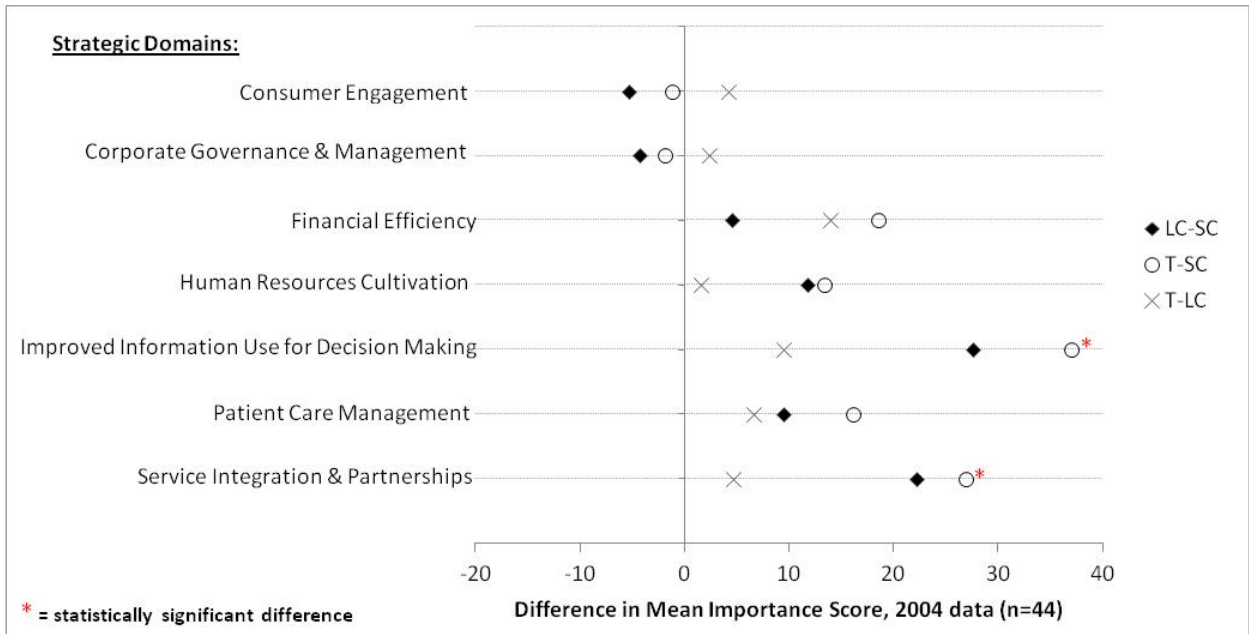


Figure 5.22 Mean difference in domain score of importance between hospital types in 2004 for hospitals responding in both survey years, (n_{SC}=6, n_{LC}=29, n_T=9)



Figures 5.23 and 5.24 present findings comparing domain scores of challenge between hospital types in 2011 and 2004. Most differences between large community and teaching hospitals are smaller in 2011 than in 2004 (only *Patient Care Management* had a larger difference in 2011), suggesting a move towards standardized challenge scores for domains by larger hospitals. Small community hospitals increased their scores of challenge for domains in 2011. Their scores were higher than the scores of large community and teaching hospitals for all domains except *Patient Care Management*. This echoes the findings in Figure 5.18; in 2011, small community hospitals increased their scores of challenge compared to 2004, whereas large community and teaching hospitals reduced their scores of challenge. These differences in the direction of change are reflected in the comparisons of hospitals shown in Figures 5.23 and 5.24.

Figure 5.23 Mean difference in domain score of *challenge* between hospital types in 2011 for hospitals responding in both survey years, (n_{SC}=6, n_{LC}=29, n_T=9)

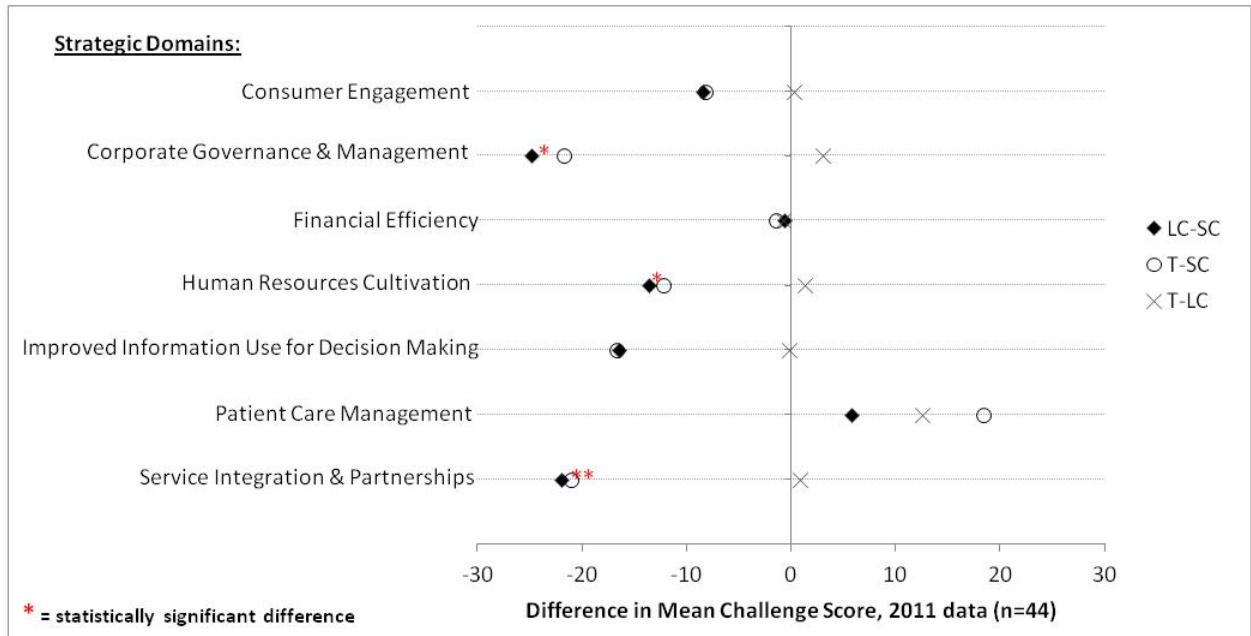
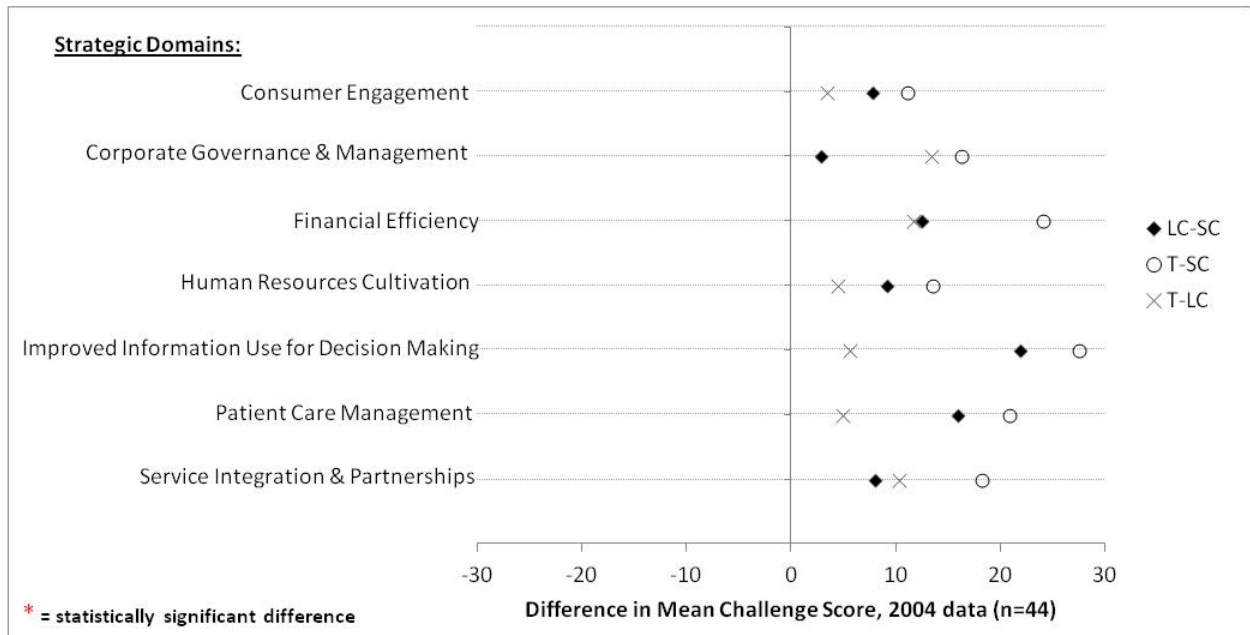


Figure 5.24 Mean difference in domain score of *challenge* between hospital types in 2004 for hospitals responding in both survey years, ($n_{SC}=6$, $n_{LC}=29$, $n_T=9$)



Overall, the findings from ANOVA analyses comparing domain scores by hospital type in 2011 showed differences hospital types are more centred on zero for scores of articulation and importance between hospital types. This may indicate that hospitals respond more similarly to each other in 2011. For each ANOVA analysis more differences may have been statistically significant if the sample sizes for teaching ($n=9$) and small community ($n=6$) hospitals were larger (small sample sizes reduce the power of statistical testing). This is highlighted by the fact that large community hospital differences were more likely to be statistically significant.

These findings show that hospitals have shifted their scoring of domains to become more similar when compared to each other in 2011 versus comparisons using data from 2004. Small community hospitals have increased their scores, and large community and teaching hospitals have decreased their scores. The findings suggest that hospitals have moved towards more standardized scores of articulation and importance; but small community hospitals score domains as more challenging compared to larger hospitals in 2011 (opposite to the findings from 2004).

5.5. Summary

In aggregate, hospitals reduced their articulation of strategic issues and ratings of importance and challenge of strategic issues and domains in 2011 compared to 2004 (for hospitals responding in both years). When responses were analyzed based on hospital type it was found that small community hospitals increased their articulation of strategic issues and domains, and increased their ratings of importance and challenge associated with strategic issues and domains. This finding indicates that more small community hospitals are articulating each issue/domain, or issues/domains not previously articulated in 2004 are being articulated in 2011. The findings from large community and teaching hospitals echoed the aggregate data, indicating they changed their responses in 2011 compared to 2004 opposite to small community hospitals. These findings suggest that small community hospitals have become more conscious of issues and now explicitly focus on issues that were not focused on prior to the creation of LHINs and increased accountability requirements.

The lower ratings of importance and challenge of issues by larger hospitals in 2011 suggest that these institutions are less concerned about strategic issues compared to 2004, are better able to adapt to changes introduced in the health system, and/or are better equipped to deal with the increased focus on accountability and its requirements. Larger hospitals have more existing resources to utilize and are better able to acquire new resources to meet accountability requirements. Their existing capacity means that changes introduced to accountability requirements since 2004 did not affect them as much as they may have feared (higher ratings of challenge and importance in 2004, prior to the use of legislated accountability requirements). These findings are addressed further in chapter six using the interview data.

The patterns of responses noted above are important. As well, the increase in the articulation of *patient satisfaction* in aggregate, and by large and small community hospitals is notable because all hospitals indicated that they articulated the issue in 2011. In 2004, teaching hospitals were the only group of hospitals in which all articulated *patient satisfaction*. The increase in articulation of *patient satisfaction* to 100 percent of hospitals responding to the survey in 2011 aligns with the requirements of the *Excellent Care for All Act*, 2010.

The findings in this chapter suggest that hospitals are moving towards standardization in the articulation of issues, and in ratings of importance, possibly guided by the focus of the health

care system. In the face of increased legislation related to accountability and reporting requirements hospitals are moving towards a similar focus, standardization in priorities, and increased alignment with each other. The following chapter presents the interview findings, including explanations by hospital executives and health system leaders for the survey findings presented in this chapter.

Chapter 6: Interview Findings

6.1. Introduction

This chapter presents findings from interview data collected from thirteen key informants in the acute care hospital sector of Ontario's health care system. The informants provided their views on the environment of accountability in this sector and its impact on hospitals, answering the third research question: *What are hospital executive perceptions of the current environment of accountability, including the policy instruments used, and how have hospitals responded to this environment?* Interview findings also further address the second sub-question of research question two: 2b) *How are the shifts (or absence of shifts) in strategic priorities explained?* The third sub-question of research question two is also answered in this chapter: 2c) *How has the process of strategic priority setting and activities carried out by acute care hospitals been affected?* Analyses of interview data for the above research questions revealed six main themes:

1. Hospitals are accountable to multiple agents including its community, the public, its board, its Local Health Integration Network (LHIN), and the provincial government.
2. Potential tensions exist between external accountability requirements and organizational priorities.
3. Issues in performance measurement for accountability include differences in measures used by multiple agents; differences in definitions of measures; the challenges in meeting requirements and issues of data quality; and perceptions of the appropriateness of measures being used for accountability.
4. The scope of accountability has expanded from focusing on financial performance and volumes of services to include quality and safety, and the patient experience.
5. Unintended consequences of the policy instruments being used for accountability exist.
6. The perceived strengths and weaknesses of policy instruments used for accountability.

This chapter also presents interview findings to explain why hospitals rate strategic issues in the Strategic Priorities Survey as important but less challenging in 2011 even though accountabilities have multiplied (see chapter five). Strategic issues were defined in chapter two as "fundamental policy questions or critical challenges affecting the organization's mandates, mission, and values, product or service level and mix, clients, users or payers, costs, financing, organization, or management" (Bryson 2011, p.55).

The following section of this chapter describes the interview participants (or “interviewees”). Section 6.3 provides a brief summary of the methodology used for analyzing the interview data. Sections 6.4 to 6.9 present the findings related to each of the six main themes, and section 6.10 presents interview findings expanding on the survey results from chapter five: specifically why strategic issues are rated as less important and less challenging in 2011 compared to 2004. A summary of all interview findings is provided in section 6.11.

6.2. Interview participants

As noted above, key informant interviews were carried out in-person or over the telephone between September and December 2012 with eleven executives from six acute care hospitals, from six different geographical areas (LHINs) in the province of Ontario. The six acute care hospitals were purposively selected to include two teaching, two large community, and two small community hospitals. Hospitals where interviews were conducted were selected from the hospitals that responded to the survey (see chapter five) and had initially indicated they were willing to be interviewed (fifty-three hospitals responded to the survey, forty-two of these hospitals indicated they were willing to be interviewed). As discussed in chapter three, a purposive, non-probability sample of participants was chosen because they had expertise in acute care hospital activities, and accountability requirements (Creswell, 2003; Miles & Huberman, 1994).

The hospital’s CEO was the first contact for interviews and was interviewed at each of the six hospitals. The remaining five hospital interviews were carried out with executives referred by the CEO from one teaching, one large community, and one small community hospital. Two of the referred executives were from one of the teaching hospitals, a third one was from one of the large community hospitals, and the fourth and fifth were from one of the small community hospitals. These individuals were senior executives or managers involved with accountability, quality, data collection, and and/or reporting for accountability and had job titles such as Director, Vice President (or Chief Executive), or Manager (actual job titles are not used to ensure confidentiality of participants). Using a stratified sample ensured a more complete picture of organizational burden and response, and minimized bias (Miles & Huberman, 1994). At the time of the interviews, the CEOs and executives had been in their current roles for one year to over ten years. In order to collect data from a broader area of Ontario, five of the hospital interviews

were carried out by telephone. Interviews were approximately one hour and were carried out between September and December of 2012.

Two supplementary key informant interviews were conducted in May 2013 with senior health system leaders familiar with the full health care system in Ontario. Each of these senior health system leaders had held executive management positions at acute care hospitals in Ontario (e.g., Chief Executive Officer (CEO), health systems consultant in regionalization, positions at Ontario's Ministry of Health and Long-Term Care (MOHLTC) and/or other government agencies, and/or worked with other non-governmental health care agencies/associations within the province of Ontario). These interviews were about thirty minutes in length and focused on expanding on the survey findings. Table 6.1 provides descriptive information for all interviews.

Table 6.1 Descriptive information for interview participants and interviews

Hospital Type or Health System	Number of Hospitals or Organizations	Number of Interviews Conducted	Number of LHINs
Teaching Acute Care	2	4 (2 CEO)	2
Large Community Acute Care	2	3 (2 CEO)	2
Small Community Acute Care	2	4 (2 CEO)	2
Health System	2	2	N/A
Total	8	13	6

6.3. Interview schedule and data analysis

The full description of the development of the interview schedule and analysis methodology is found in chapter three; this section provides a brief overview. The interview schedule asked interviewees how the increased focus on accountability and reporting requirements affected their organization, whether these requirements were useful for their hospital, how the process of priority setting was affected, how the hospital's board was involved, and about the change in executive compensation introduced by the *Excellent Care for All Act*, 2010. The schedule was modified after the first four interviews with hospital executives were carried out to include a question asking interviewees to provide an explanation for the seemingly paradoxical finding presented in chapter five, specifically why strategic issues were rated as less challenging in 2011 even with the increase in accountability requirements. Six hospital executives (one from a teaching hospital, two from two different large community hospitals, and three from two different small community hospitals) interviewed were asked this question along with the

questions in the original interview schedule. The two health system leaders were only asked to provide an explanation for the survey findings, specifically why hospitals would rate strategic issues as important but less challenging in 2011 compared to 2004. All interviews were recorded and the audio files were transcribed and reviewed by the interviewer.

As discussed in chapter three, interview data were analyzed using a coding scheme developed from the framework outlined in chapter two. A sub-sample of three interviews was double coded by both the researcher and a colleague using the same coding scheme. The two sets of findings were compared; the majority of codes were the same, when differences occurred, the code definition was modified or a code was added to increase clarity. This comparison followed by modifications was done until consensus in code definitions was achieved. Once the final coding scheme was created, the double coded transcripts were re-coded and all other transcripts were coded according to this final thematic coding scheme (see Appendix I).

The analysis of the coded interview data collected from hospital executives and health system leaders revealed six themes as outlined in section 6.1 above. Each theme is presented below in sections 6.4 to 6.9. Section 6.10 discusses the interview findings that explain the survey findings of chapter five and section 6.11 provides a summary of interview findings.

6.4. Multiple accountability relationships

The strongest theme to emerge from the interview data was the multiple accountability relationships in Ontario's acute care hospital sector. In this environment of accountability, hospitals see themselves as accountable to multiple actors including the public, the hospital's corporate board, their LHIN, and the provincial government through the MOHLTC and other arms-length government agencies (e.g., Health Quality Ontario). Note that some of these relationships are formal and others are informal; as well, multiple policy instruments may be used in each relationship. Prior to the advent of LHINs, acute care hospitals, particularly small community hospitals, focused on accountability to their community. Hospitals now recognize the expansion of accountability to include LHINs and other arms-length government agencies. Hospital executives also report being held accountable by their corporate board, with the board being accountable to the LHIN, which is accountable to the MOHLTC. Accountability in the acute care hospital sector is multi-layered and can be cascading (performance indicators can be used at both the LHIN and hospital level). As noted in chapter four, cascading accountability

applies to indicators that both the LHIN and hospital report on, the LHIN's success being dependent upon each hospital meeting its target.

6.4.1. The public

The introduction of LHINs changed the hierarchy of hospital accountability. Hospitals were now accountable to their LHIN, instead of being directly accountable to the provincial government (MOHLTC); the LHIN was now accountable to the MOHLTC. Hospitals also faced increased mandated measurement and reporting requirements. Even so, hospitals continued to emphasize being accountable to the public or their community. Accountability to their community is an informal accountability relationship in that there is no mechanism for hospitals to follow to be accountable to their community other than the public reporting mandated for other accountability requirements. Hospital types differed in their accountability to the public. All hospitals recognized the importance of transparency and accountability, with larger hospitals focusing on making publicly available information understandable to the public. One large community hospital noted that because their main source of funding is tax dollars they felt accountable to the public for the use of those funds.

“This is taxpayer’s dollars. We have to be accountable to the public.” (CEO, Large Community 1)

Small community hospitals prioritized accountability to their community for the level of care provided to them, in terms of both quality of care and volume of services.

“In a way I do [feel accountable to the LHIN and the MOHLTC] but our first priority and our board’s first priority has always been what’s in the best interest of the people of this community.... It’s always been their [the board’s] priority and our priority. We feel we are accountable to the people of this community. Yes the Ministry and the LHINs could force us to do things, but if it’s not in the best interest of the people they [the community] will rebel and will give us the message to give to them [the LHIN and MOHLTC]. We do what we have to do in their [the community’s] best interest.” (CEO, Small Community 2)

Each hospital will approach accountability to the public or their community in a different way depending on the perceived strength of this relationship. Teaching hospitals did not refer to the public as their community, whereas interviewees from small and large community hospitals did. This difference in terminology may indicate a different relationship between the community and teaching hospitals compared to the relationship between the community and large and small

community hospitals. The difference in a teaching hospital's relationship with its community is not surprising given the breadth of services provided by teaching hospitals. Teaching hospitals are more likely to provide services to patients from outside their community or catchment area, especially compared to small community hospitals. Teaching hospitals may focus on disease groups, rather than their immediate community.

Interviewees from small community hospitals indicated that their communities might not be interested in all aspects of mandated accountability requirements. For example, the communities surrounding small community hospitals are more interested in being able to access services (compared to other communities) as opposed to their hospital's performance on other mandated accountability indicators.

“The community is not interested necessarily in seeing whether or not you balanced your budget. The community couldn't care less about your alternate levels of care [ALC]. What they want to see is you've got an emergency department and that blue 'H' sign in the small hospital. They are interested in making sure [there is] equal access to services.... It's all about equality and access.” (CEO, Small Community 1)

Members of Ontario's hospital boards are generally from the community served by the hospital, making board membership one of the ways accountability to the community is operationalized. Board members are also responsible for governing the hospital corporation and ensuring it meets accountability requirements. The hospital corporation is the topic of the next section.

6.4.2. The hospital corporation

Regulation 965, under the *Public Hospitals Act*, 1990, states that every hospital (including acute care) in Ontario must be governed and managed by a board. Ontario's hospitals retained their independent hospital boards after the introduction of LHINs. This structure differs from the regionalization approach taken by some other Canadian provinces where independent hospital boards were disbanded. Regulation 965 specifies the composition of hospital boards in Ontario. They are required to have as non-voting members the Chief of Staff or Chair of the Medical Advisory Committee (MAC), President of the Medical Staff, and the Chief Nursing Executive of the hospital. The usual practice for most hospitals has been to include the CEO as a voting or non-voting Board member. No other employees or staff members are required to be on the Board; in fact, any member of the medical, dental, extended class nursing or midwifery staff, or any employee of the hospital is prohibited from being a voting member of the Board. Other

members of the hospital board are individuals with the necessary skills, competencies, experience, and independence needed to perform the Board's role and responsibilities in a collective manner (Office of the Auditor General of Ontario, 2008a).

Members of hospital boards can be appointed or elected (OHA, 2010a), and can include community "shareholder" members (referred to as corporate members) who are from the general public (Office of the Auditor General of Ontario, 2008a; Quigley & Scott, 2004). All board members are responsible for ensuring the hospital complies with the *Public Hospitals Act*, 1990 and any by-laws of the hospital. The board appoints members of advisory committees as needed. It is also responsible for establishing a fiscal advisory committee responsible for the operation, use, and staffing of the hospital; a MAC; and a quality committee. Finally, the board is responsible for strategic decision making and risk management, and other responsibilities as outlined in Regulation 965.

Prior to the creation of LHINs, hospital boards were accountable to the MOHLTC, which funded them. Now, hospital boards must report to their respective LHIN, which is then accountable to the provincial government (more about this accountability is in section 6.4.3). Hospital executive interviewees acknowledged their accountability to their hospital's board and that the board is accountable to the LHIN. Accountability to the board has always been the case and the creation of board quality committees (a requirement of the *Excellent Care for All Act*, 2010) has increased this accountability beyond the business aspects of the hospital to include quality and patient care.

"I would say all boards on the business side have tracked the finances. I think the business services aspect of board governance has always been pretty good and grounded in measurement. But all other aspects on the patient care side, which is now morphed into quality of patient care, metrics are new." (CEO, Teaching 1)

"...forty percent of our board's attention is on quality initiatives and quality oversight." (CEO, Large Community 1)

Interviewees noted that many board members are from the community and are more likely to have a background in business; they are well versed in financial aspects of accountability but have to work to understand the clinical aspects. Because of the increased awareness of board accountability to the LHIN, hospital executives (often with clinical backgrounds) reported that they put more effort into ensuring the board understood the information it received. Interviewees

also indicated that their boards ask more questions and want more details as they become more focused on the board's accountability to the LHIN and other arms-length agencies.

“The quality committee [of the board]... [has] ownership for reviewing the QIP and approving it. ...they are very interested, ask lots of good questions and make suggestions.... they work very hard, they are not clinicians but they work very hard to understand our clinical world and we work very hard to bring them presentations and the information that supports this so that they become more knowledgeable, to help them make more informed decisions.” (QI, Teaching 1)

Executives consider this an improvement because accountability was less structured before the introduction of H-SAA and QIPs. The CEO (or other executives) now has to provide more information to the board, not just the numerical result for an indicator. Interviewees indicated that in the current environment of accountability the board needs to understand what numerical results mean and that the health care processes tied to the indicator are being monitored by the hospital. For example, they want to know what an indicator's target is, what that target means, what is being done to achieve the target, and any potential barriers to achieving the target. Hospitals provided more resources to their board members to educate them on board members' responsibilities. Provision of additional information increased the board's understanding of the “*bigger picture*” of their role as a board, and that what the hospital and its executives achieve is a reflection of the board. Interviewees also indicated that boards have also expanded their focus from mainly operational details of the hospital corporation to more clinical aspects in order to increase their understanding of what the information presented to them means.

“I think now the board is much more educated, is asking the right questions around what the process, systems and structures are... there's the actual level of oversight at the management level on that number [for an indicator].” (CEO, Large Community 1)

Because board members come from the hospital's community, they may be focused on what is best for the community, not always taking the broader environment of accountability into consideration. This focus has necessitated the clarification of to whom and for what the board is accountable, an issue addressed in the next section.

6.4.3. Local Health Integration Networks and the government

The government of Ontario, via the MOHLTC, is responsible for establishing overall health system strategies and priorities, and drafting legislation for acute care hospitals and LHINs. Each

LHIN is a not-for-profit organization governed by a board of directors, composed of up to nine individuals appointed by the province of Ontario based on skills and experience (Ontario's LHINs 2006; 2013). In contrast to accountability to the public (see section 6.4.1), accountability to the LHIN is mandated, utilizing a contract (H-SAA) between each acute care hospital and its LHIN.

Interviewees tied the LHIN and the MOHLTC together when indicating to whom and for what they felt accountable. This grouping indicates that hospital executives understood the LHIN's position between the acute care hospital and the government.

“By and large they [externally imposed priorities] don't come from the LHIN. They come from the Ministry of Health through the LHIN. There is very little imposed just by the LHIN itself.” (CEO, Teaching 2)

Interviewees reported that they sometimes have to explain to their board that it is accountable to the LHIN, not just the community.

“Probably prior to the LHIN I would suggest the majority of people would probably say, ‘I'm a community board, I'm accountable to the community.’ But yesterday we just reviewed the accountability agreements and it's kind of like, ‘Have you guys [the board] got the message? You [the board] are accountable to these guys [the LHIN] for certain things.’” (CEO, Small Community 1)

Hospital executives reported that the government's primary interest is in the results of annual financial audits of acute care hospitals and that the LHIN often carries out the government's strategy and priorities, not necessarily the LHIN's own. As agents between hospitals and the government, each of Ontario's fourteen LHINs is accountable to the MOHLTC for ensuring that Hospital Service Accountability Agreements (H-SAA) are signed. They are also accountable for specific performance indicators in Ministry-LHIN Performance Agreements (MLPAs) that may cascade down to the level of the acute care hospital (see chapter four). Hospitals questioned whether the ultimate goal of accountability for performance is being achieved when it appeared that LHINs were focused on getting agreements signed, not necessarily on holding hospitals accountable, especially in the case of small community hospitals.

“We will have a long dialogue around that [setting targets] and it will get amusing, and at the end of it I know he [the LHIN] really couldn't care less. He just really

wants to make sure that I get the accountability agreement signed.” (CEO, Small Community 1)

Requirements from the MOHLTC and associated accountabilities can direct the focus of a LHIN when it is negotiating targets with acute care hospitals and monitoring their performance. Hospital executives indicated that LHINs were focused on their own accountability requirements to the MOHLTC, including performance indicators found in the MLPA. Hospital executives thought that LHINs were limited in their ability to carry out oversight activities, such as monitoring accountability reports. Differences in oversight activities were also reported based on hospital size. Interviewees perceived that LHINs focused on the few larger hospitals in their geographical area because the performance of these larger hospitals will affect the LHIN’s ability to meet its own accountability requirements to the government. Monitoring and oversight for accountability is challenging (Brinkerhoff, 2004). Because of this, smaller hospitals may not be monitored as closely by their respective LHINs. Small hospitals are more burdened by reporting requirements and may make unintentional errors that are not noticed by their LHIN without closer examination of accountability reports. One small community hospital executive reported inadvertently not following its H-SAA and missing targets for almost a year before the LHIN noticed and then not receiving any consequence once the error was identified by the LHIN.

“In my experience we have these agreements, the H-SAAs or whatever it is, but I’ve never seen the punishment as anything significant if you fail to perform. ... Using my example where I didn’t hit the chronic care bed numbers or days [and it took the LHIN eleven months to notice]. A letter came [from the LHIN] that said, ‘You are not going to do this [not deliver the required number of chronic care patient days].’ I responded, ‘Yeah, they are all ALCs.’ Okay fine. Next. There [were] no consequences. Maybe there are [consequences] in some cases, but if there is none then why would you really be that worried about it [not meeting accountability requirements]?” (CEO, Small Community 1)

This interviewee did not indicate whether s/he thought consequences should be used.

Another way the government is delegating responsibility for ensuring accountability is by creating arms-length agencies or expanding their responsibility to hold acute care hospitals accountable. These arms-length agencies focus on areas of hospital performance beyond financial and service volumes. After the *Excellent Care for All Act*, 2010 came into force, Health

Quality Ontario (HQO), an arms-length agency, became responsible for ensuring accountability for quality of care provided by acute care hospitals.

6.4.4. Arms-length agency: Health Quality Ontario (HQO)

Section 1.3 explained that HQO is a government funded, independent arms-length agency accountable to the public and the MOHLTC. It is responsible for measuring and reporting on the quality of acute care and patient satisfaction since 2010 (HQO, 2012b). ECFAA requires hospitals to submit annual quality improvement plans (QIPs) to HQO, which is responsible for holding hospitals and their executives accountable for quality of care, and for conducting province-wide comparisons. More about QIPs and their recommended indicators can be found in chapter four.

Interviewees indicated a significant increase in attention to accountability for quality since QIPs were mandated in 2010. One teaching hospital CEO did consider the QIP to be a “*waste of time and money*” because the hospital was already carrying out related activities and the QIP did not introduce anything new other than more bureaucracy. Because the QIP is a legal requirement, hospitals have a strong incentive to focus on its requirements (even if its indicators are currently only recommended, unlike the mandated indicators in the H-SAA). Sometimes these requirements caused frustrations, especially for small community hospitals that felt the core indicators recommended for inclusion in QIPs are not always relevant.

“Because we are small and rural, the one challenge that we’ve really had, especially with the QIP, the quality improvement plan, is the part B component where it’s got these really specific quality measures they want us to measure, and a lot of them [quality measures] don’t apply. For example, we don’t have central lines. We don’t have ventilators. The other challenge is if you don’t have more than 2500 cases annually your hospital standardized mortality rate doesn’t apply. We are a little bit challenged in trying to capture measures that are comparable but also reflective of what we do.” (VP Nursing, Small Community 1)

This challenge occurs despite the fact that one of the reasons these indicators were chosen by the government was because they were considered generally applicable across the acute care hospital sector (MOHLTC, 2012a). Because QIP indicators are not mandated, hospitals are given the flexibility to choose indicators other than the recommended ones. Some hospitals considered the flexibility to choose QIP indicators as a gap in accountability since not all hospitals will be held to the same metrics or targets, reducing comparability.

“with the QIP they still have some room to improve that whole process. I’d hoped out of this that we would actually once again have very standard metrics that we are all held accountable to. I can go to a website and compare myself against another hospital, but they’ve let hospitals pick which indicators they’ll use in their QIP. I’m more of a fan of, ‘these are the metrics we want to see improvements in. Pick your target. These are the measures.’” (Manager IT, Large Community 1)

The four accountability relationships presented in this section involve formal or informal requirements hospitals report on. These external requirements reflect the priorities of the LHIN, the public, and/or the health system. Hospitals also have their own organizational priorities, which may or may not align with external priorities. Interview findings relating to priorities are presented in the following section.

6.5. External accountability versus organizational priorities

Each hospital is physically located within a LHIN (although it may provide services to patients who live outside that geographical area). LHINs have regional priorities and accountability requirements they must meet. Hospitals have their own organizational priorities, which may differ from those of their LHIN and the MOHLTC as implemented in accountability documents, such as the H-SAA and QIP. Hospital executives spoke of the alignment (or misalignment) between external accountabilities and the priorities of the hospital organization, including strategic priorities; difference in the definitions of measures; the challenges of reporting requirements and data quality; and the issues of measurability and controllability of measures. Each of these themes is presented below.

6.5.1. Alignment between external and internal priorities

Acute care hospital organizational priorities may or may not align with externally mandated (or recommended) priorities. Alignment may be difficult to achieve when a health system strategy is not developed and/or communicated. Without an overall guiding document for the health system, it is not surprising to find that alignment is not always occurring. An overall system strategy can increase alignment by directing the focus of organizations and possibly reduce the burden of meeting requirements. The absence of an overall strategy may lead to misalignment because the rationale for accountability requirements may not be apparent to organizations, possibly creating tensions between external accountability and organizational priorities.

The process of choosing the indicators did not change in this environment of increased focus on accountability. Hospital executives indicated that many measures used in the H-SAA and the QIP (even the QIP itself) were already used by hospitals for internal monitoring and reporting. The rationale for using these indicators was that they were available and could be implemented more easily than choosing new indicators or ones that required different data to be collected. As a result, these areas and the “plan” (the QIP) were already a priority for many hospitals. Using these indicators increases alignment, and can mitigate the challenge or burden associated with data collection, measurement, and reporting to multiple agents.

“Both H-SAA, ECFAA and the QIP parts of ECFAA was information by and large we always had. It was just the reporting template. So it hasn’t really had much of an impact if any.” (CEO, Teaching 2)

These indicators capture key elements of performance such as alternate level of care (ALC) days and wait times, and are important to the public. Even so, the tactic of using existing indicators that were readily available and measurable may also indicate the absence of an overall system strategy. Hospital executives said that they would benefit from understanding why indicators are chosen, especially in the case of indicators that cannot be affected in a short period of time (e.g., emergency department wait times, percentage of ALC days).

“It’s a bit of an eeny, meeny, miny, mo. Which ones have been used? I have no idea what the thinking behind it [choice of indicator] is.” (QI, Teaching 1)

Interviewees reported that indicators hospitals found challenging may have seemed straightforward to those choosing indicators (e.g., MOHLTC or LHIN), but were actually difficult for hospitals to address on their own (controllability is discussed further in section 6.6.4). Hospital executives reported that these challenging indicators (e.g., ALC days, readmissions to the hospital, ED wait times) required broad organizational and system level changes in order for improvements to occur; and that the public, the LHIN, the government, and government agencies expected to see results sooner than was feasible. Interviewees reported that the disconnect between what is wanted and what is possible can be frustrating or demoralizing, even for organizations that had been working on making improvements in these areas before the introduction of H-SAAs and QIPs.

“It’s like going to play hockey at a high level without knowing how to skate yet. It’s not going to work. You’ve got to learn how to skate first before you actually learn how to do all these tricks. It’s not that [ED wait times] isn’t an incredibly important [measure], it just wouldn’t have been the first one to pick.... Get some momentum, get some excitement, and get people moving. Don’t pick something you’re going to fail at.” (CEO, Teaching 1)

Greater clarity about why indicators are chosen and a better understanding of realistic timeframes for implementing change, by those choosing the indicators, can reduce the tension between those holding organizations accountable and the organization. More communication between these two parties will increase hospitals’ understanding of why measures are chosen and what the system is trying to accomplish. As well, those holding hospitals accountable will become more aware of the challenges hospitals may face and recognize that system level approaches are required to affect these indicators.

“We’ve been trying to do this one [ED wait times] for years before they [the MOHLTC] brought it in. Nobody asked, ‘What do you think about starting with this one?’ Well it seemed like a good one. People think that some of these measures are simple. Some of them are and some of them aren’t.” (CEO, Teaching 1)

Accountability criteria indicate areas prioritized by the health system, but they do not always align with a hospital’s own organizational priorities or those of the community it serves.

“They [H-SAA] don’t necessarily represent what’s most important for that organization in that community. ... they [priorities indicated by the H-SAA] are not necessarily related back to that organization’s priorities.” (CEO, Small Community 1)

An example provided by one interviewee was that the targets negotiated between the LHIN and a hospital, for indicators used for external accountability, may not be the same as the targets used internally by the hospital for the same indicator. Different targets can increase the tension between the organization’s priorities and those of the LHIN or health system. The negotiation process can potentially be used to increase alignment between external accountabilities and organizational priorities, thus reducing tension. When the right people are not at the negotiation table, organizations may see the “*big picture strategy*” as being imposed.

“I know the LHIN looks at the information and they look at it through a very different lens. I think that creates tension for the executive team because then the LHIN will

come up with their own kind of strategy...and it's actually not quite aligned with our strategy.” (CIO, Teaching 1)

The QIP is not as prescriptive as the H-SAA; indicators are recommended for the QIP, but hospitals are free to choose which indicators (even if not recommended) to use in their QIP. This flexibility can lead to increased alignment between the QIP and organizational priorities. In fact, interviewees indicated that because of this flexibility, they were able to choose indicators for their QIP so that it supported the organization’s strategic plan. Conversely, flexibility in the indicators used in the QIP also meant that the indicators chosen by an organization might not align with external (health system and/or LHIN) priorities. Lack of alignment between the QIP and external priorities also lowered the potential for alignment between the H-SAA and the QIP, potentially reducing the clarity of health system objectives. Finally, the flexibility in choice of QIP indicators limits the ability of HQO to be accountable to the public for the quality of all acute care hospitals because, as already noted, not all hospitals will choose the same indicators to report to HQO.

Even with these problems of misalignment, hospital executives indicated that the exercise of drafting a QIP and the use of mandated accountabilities in H-SAA is beneficial in that both documents increase the focus of all hospitals and provide direction. For example, organizations that did not previously have structured quality improvement plans are now required to, providing hospitals with an explicit focus on performance management, which aligns with a general health system priority of quality improvement.

“I do believe that as an institution we are much more focused on performance management and around accountability to specific indicators. So I think that the very framework that the LHINs have put forward plus the quality improvement plans has driven us to a place of saying ...we need to pay attention and drive performance.”
(CEO, Large Community 1)

Organizations that already had QIPs also recognized the benefit of the current emphasis (via legislation) because it provided a lever to increase awareness of quality improvement throughout the hospital, from executives to the frontline staff, and throughout the health care system.

“When ECFAA came in they [the government] said it’s not just me [this CEO and this hospital] anymore. The government passed a law.” (CEO, Teaching 1)

The instruments used for accountability in the acute care sector can foster alignment between external and internal priorities. Flexible requirements allow the organization to choose indicators that align with organizational priorities. Mandated requirements force the hospital to focus on those indicators. The following section discusses changing organizational priorities because of external priorities.

6.5.2. Changing organizational focus and priorities

Even though alignment is not perfect, hospitals indicate that they consider external priorities when deciding upon organizational priorities and areas of focus. Hospitals adjust their priorities to increase the importance of particular issues that are prioritized by the health system or their LHIN.

“...they [the LHIN] are watching you and they are looking at you and making sure..... Okay this [telehealth] might have been priority two before, now it’s priority one because they made it priority one.” (CEO, Small Community 2)

“...as an administrator I do think that I’m paying attention to quality, I’m paying attention to access, I’m paying attention to fiscal management more than I ever have.” (CEO, Large Community 1)

Internal objectives are often derived from external priorities and the desire to align the two. Hospital executives indicated that their organizations are aware of the need for alignment and see it as a *“fundamental challenge.”* When alignment is not immediate, hospitals purposely shift their organizational priorities, goals, and internal balanced scorecard metrics to align with external accountabilities found in the H-SAA and QIP.

“We didn’t add things outside of it [the QIP]. We said okay the QIPs is the main tool. We are going to align everything into that QIP. We throw everything into it. It’s good because it does enable us to focus, everything under one document and one oversight function.” (CEO, Large Community 1)

Hospitals also embed LHIN-set targets for indicators into their internal documents; when alignment is clear these external priorities can flow through the hospital, down to the program level and frontline. An example given by hospital executives is tying a hospital’s internally used metrics to the ECFAA requirement of measuring patient satisfaction. Interviewees reported that their organization engaged in research to improve patient satisfaction (communication with patients and their families is essential), and actively monitored satisfaction data in real time so

that changes in satisfaction were noticed quickly and followed-up on. Some organizations have selected patient satisfaction as a main area of focus.

“We agreed as an institution we would set three [main] goals.... improving patient satisfaction scores, improving waits for admitted patients in the ED, and staff and employee engagement. All of our metrics get cascaded around them.” (CEO, Large Community 1)

“Part of ECFAA is doing the patient satisfaction surveys, and that has brought that focus more to the front. Patient first.” (VP Finance, Small Community 1)

There are benefits and drawbacks to the instrument of performance reporting. The increased focus on accountability has increased expectations of those holding hospitals accountable. While some hospitals were already responding to these expectations before the increased focus on accountability, others were not. Interviewees reported that other hospitals that were originally non-responsive to external expectations have had to follow suit and implement “*good management*” structures, including meeting accountability requirements. Organizations and their boards have also increased their focus on accountability within the organization leading to increased use of internal objectives, measurement, and management directed towards the objectives of the H-SAA and QIP.

“If there is clear alignment [with management portfolios] we cascade some of these [H-SAA and QIP] measures in those initiatives, cascade them down to the program level. They [the program] in turn have their own indicator reports that are program-specific and they’ve got their own goals and objectives. So there is certainly an alignment within our organization. Some alignment is related to our strategic plan, others are aligned to the H-SAA and the QIP.” (CEO, Large Community 2)

A drawback of the focus on performance indicators noted by interviewees is “*information overload*” resulting from all the information available to them to track their performance. Because of this, they reported a greater need to decide upon and concentrate on priority areas.

Another benefit is that external priorities identified by the MOHLTC, HQO, and LHINs through the H-SAA and QIP performance indicators help hospitals to establish top priorities so that they meet targets for these external accountability indicators. Conversely, organizations indicated that the quest for alignment between external and internal priorities could hinder their ability to

accomplish anything because of frequent changes to indicators and tensions between external and internal priorities.

“It can actually impede the ability of an organization to achieve goals because if they are constantly responding to new targets and new priorities then it’s very difficult to focus and align and really realize significant net improvement in patient outcomes.”
(QI, Teaching 1)

This leads to the next theme of issues in measurement arising from the increased number of measures being used for accountability.

6.6. Issues in measurement

Hospitals are required to report increasing amounts of information for accountability purposes. As noted in chapter four, the definitions of some measures have been standardized for accountability purposes, but the interview data indicated that issues remain. Within this theme, interviews revealed four sub-issues arising from the increased use of performance measures for accountability: 1) Reporting same measures to more than one agency; 2) Differences in measure definitions; 3) Challenges in meeting reporting requirements, sometimes due to data quality or issues with standardized reporting templates; and 4) Measurability and controllability of measures. Each of these will be discussed below.

6.6.1. Multiple reporting requirements

As indicated in section 6.4 above, acute care hospitals are in multiple accountability relationships, requiring them to report to multiple parties with different agendas, which are not always aligned. The existing arrangements do not provide a way for these multiple parties to talk to each other in order to facilitate alignment.

“I think there are a number of different groups who are committed to quality improvement.... There is Health Quality Ontario and the quality branch in the Ministry, both of which have slightly different agendas at the moment. They are trying to become aligned but they are not totally aligned yet. Each LHIN has its own quality agenda. Then each hospital has its own quality agenda, like we do, focused on local issues. Then there are other groups that impact us such as Accreditation Canada. ... But, these groups don’t necessarily talk to each other.... There is no forum for them to talk to each other.” (CEO, Teaching 1)

While interviewees agreed that accountability and the measures being used were important, they reported that too many measures are used, requiring mandatory reporting and data collection to

multiple bodies without any added infrastructure, funding support, or time to do so. Reporting is labour intensive and new reporting requirements are added without any reductions in existing requirements; more time is spent on reporting than on improvement efforts.

“I’m very happy. ...I think this [accountability] is pushing us to get better. But, ...it’s [accountability] becoming more of a bureaucratic structure that’s about pushing paper and pushing numbers around; we probably spend more time reporting than on improvement. We’ve gone too far on the reporting side.” (CEO, Large Community 1)

Hospital executives also agreed that accountability is important, but multiple reporting requirements created confusion over what the health system (MOHLTC and LHINs) wants to achieve and who is in charge. Interview participants felt that the current framework is “messy.”

“Well I still get confused over who is trying to drive what agenda. ... We have reporting we do to the LHIN. We have reporting we do to the Ministry. We have reporting we do to Health Quality Ontario. I’m not quite sure who is doing what. It’s quite confounding.” (CIO, Teaching 1)

Organizations need to make trade-offs with their time in order to decide how much will be devoted to each requirement. Interviewees did not consider the requirements of (legislated) accountability agreements to be any more important than (non-legislated) guidelines from Accreditation Canada or other agencies that provide best practice guidance. Trade-off decisions can be more challenging when one set of requirements is not considered any more important than other requirements.

Another challenge noted by interviewees is the misalignment between the timing of reports required for accountability purposes and the hospital’s own organizational budget cycle. Executives reported that the misalignment arose due to a disconnect between the H-SAA and the QIP. The misalignment in timing meant that issues were not included in the QIP because the LHIN did not communicate the priority before the QIP submission deadline. Interviewees from a large community hospital reported that organizations might need to invest in technology in order to capture data required for mandatory reporting. When there is misalignment between the budget cycle (submitted to the LHIN) and finding out what needs to be reported, hospitals might not have the necessary funds on hand to make investments to help them meet the reporting requirement.

“They could do a little better job giving people a multi-year window of knowing what their reporting requirements are going to be. You get the information in April. ‘We’d like this live by this date.’ Well if we knew six months ago, I would have put it on my capital request process, and asked for the money. But now, we are going to our CIO every year since I’ve been here saying, ‘We need thirty thousand dollars to buy some software that’s going to report [something that is required].’” (Manager IT, Large Community 1)

Hospitals also reported that they did not know how much funding they were going to receive from the LHIN (a problem meant to be alleviated by the introduction of LHINs and multi-year funding contracts), making it difficult to budget for technology investments.

“...the problem is the fact that initially it [H-SAA] was a commitment, multi-year funding, so a three year commitment of funding. Now we are just using amending agreements and we are now six months into the fiscal year and I still don’t know what my budget is yet.” (CEO, Large Community 1)

This challenge is less likely in (larger) hospitals with existing decision analysis support and information technology, or with reserved funds that can be used to deal with unexpected priorities.

6.6.2. Differences in measure definitions

In the past, the definitions of measures being used to hold hospitals accountable were not refined or standardized. Examples given by interviewees were hospitals measuring hand hygiene in different ways, frequent changes to the calculations used for C. difficile or Methicillin-resistant Staphylococcus aureus (MRSA), and different agencies tracking ALC patients using a variety of definitions making it difficult (or impossible) to make accurate comparisons between hospitals or with data from different sources. The standardized technical definitions and reporting requirements being used for H-SAA and QIPs have reduced variation and help to ensure that data is comparable between hospitals.

“...I think there’s been at least a better understanding of trying to be more consistent with reporting on the various indicators and of course the ones that are required to be reported. At least in Ontario there are standard technical definitions that we are expected to follow. So I think the variation has perhaps been tightened compared to what it was maybe five or six years ago.” (CEO, Large Community 2)

Interviewees reported that the increase in standardized measures gave them more confidence when making comparisons with other hospitals, using this information for improvement

purposes, and that hospitals are talking to one another more in order to share best practices and understand how improvements are made.

Even so, one interviewee expressed concern that some indicator definitions are still inconsistent and there are definitions that do not align with best practice (e.g., non-elective readmission).

“For example, the definition that’s currently being used is ... readmission within thirty days, non-elective, to an acute care facility. Well, I could leave here today having been treated for my diabetes or my congestive heart failure or whatever medical condition, and I could fall on the street tomorrow and break my hip. So that’s counted [as a non-elective readmission].... What I’m really speaking about here is the refinement of the definition. The level of risk adjustment around some of the specific disease entities, congestive heart failure or whatever, is complex and not accounted for [in the indicator].” (QI, Teaching 1)

Changes to the definitions of indicators being used can lead to confusion.

“The other thing is that they [the LHIN] set the definitions, but the definitions of the indicators are very hard to explain to people. ...the language [of the definitions] actually changes. Sometimes they talk about number of patients and sometimes they talk about number of hours. They [the definitions] aren’t crisp and then we get confused.” (CIO, Teaching 1)

Some indicators are so complex that the information provided by the indicator is often not complete. Efforts to refine measures being used, and their definitions, need to continue in order to ensure high quality data that follows best practice guidelines is available. Aligning with best practice guidelines will lead to data that is more useful for organizations, leading to improvement. Hospitals can use this data to facilitate discussions over best practices and to include frontline staff in these discussions.

The flexibility of the choice of indicators in the QIP limits the ability of HQO to compare hospitals using QIP data and of hospitals to exchange best practice information. Even though QIP and H-SAA information is publicly available, interviewees reported that they do not have time to look at other hospitals’ websites to find the data to make comparisons.

6.6.3. Challenges of reporting requirements and data quality

Along with the increased focus on standardizing the definitions of measures being used, reporting requirements have also been standardized with the introduction of accountability

agreements and mandatory QIPs. Standard reporting templates for accountability in Ontario's acute care hospital sector were developed by the government, but interview findings echoed the survey findings in chapter five, that standardized reporting requirements affect hospitals differently. Hospitals that already had the needed infrastructure and decision support were not challenged by standardized reporting requirements. These hospitals were already collecting the required information and only needed to change their reporting template to align with the standardized requirements. These adjustments helped reduce duplication of reports because templates were based on mandated reporting requirements as well as desired internal reporting.

“I think we’ve streamlined how and what data we monitor and collect. So we’ve gone away from monitoring indicators that are of no value-add. We built our templates so that they are built based on public reporting, LHIN reporting, internal reporting, and Ministry reporting so that we are not duplicating the reports. ... We’ve put it all in one spot.” (VP Nursing, Small Community 1)

Hospitals reported that they were not “*over burdened*” by reporting requirements but that their administration has had to deal with additional workload. Smaller hospitals were more challenged by external reporting requirements because large amounts of data need to be captured and reported. Information technology has always been a challenge for them because the necessary software requires large financial investments and they struggle to maintain their current level of patient care with the funding they have.

“It’s not so much the [standardization of] measures. It’s just the [standardization of] reporting requirements. We are a small hospital. We don’t have the infrastructure to support additional reporting requirements.” (VP Finance, Small Community 1)

These challenges can reduce data quality because not all organizations realize, a priori, the amount of work needed to collect and compile data to fulfill reporting requirements. Even when using consistent definitions of performance indicators hospitals are still challenged to collect accurate data or report data in the same way, leading to reduced data quality at the system level. Added to the work required are the frequent changes to annual reporting requirements (see chapter five), such as new indicators being added, indicators being removed, changes to targets being set, and/or additional reporting requirements to new agencies. Interviewees indicated that multi-year reporting requirements or early notification of changes would improve data quality,

reporting, and help the organization meet reporting requirements while staying within their budgets.

“The sooner we know the data specifications the sooner we know what changes are required. Sometimes it’s people. Sometimes it’s software. Sometimes you can tweak an existing tool to capture it. That’s all cost. We are doing it retrospectively. In three years we probably spent two hundred thousand unbudgeted dollars to meet these reporting requirements.” (Manager IT, Large Community 1)

Hospital executives indicated that their hospitals made adjustments and accommodations to deal with challenges associated with standardized reporting requirements. When possible, they have invested in human resources to meet reporting requirements.

“There has certainly been a cost to it [meeting accountability requirements] in terms of having to add in significant resources to respond to the public posting of information. For a large organization like ours it’s not inconsequential. I don’t have an exact number but it certainly resulted across the organization in probably adding three or four FTs [full-time staff] simply to keep up with the requirements particularly under things like ECFAA, posting information etc.” (CEO, Teaching 2)

Hospitals are working harder to understand what the data can tell them, and what an indicator’s result really means for the organization. In order to increase understanding and make data useful for the organization, hospital executives recognized that hospitals need personnel with the necessary analytic skills to analyze and correctly interpret the data to arrive at the proper conclusion. Some hospitals have already made the necessary human resource investments such as capacity building of existing staff, decision support, information technology, and data analytics. Other hospitals recognized the need for future investment in these areas, either directly by the hospital or by linking with another (larger) hospital with the necessary capacity.

“I don’t know any organization that doesn’t have data quality problems. ... it would be really nice to be able to tap into decision support external to my facility where I’m going to get some help with my data. Somebody is going to collate it or put it in run charts for me so that I’m not spending physical time doing it.” (VP Nursing, Small Community 1)

Hospitals have also adjusted their processes of data collection and monitoring to make these processes more streamlined; they are now part of the “workload routine.” Many organizations collect data in a central location in order to reduce the time needed to generate reports, now requiring only “a day or two” to generate a report in a small community hospital. Hospitals have

also increased their focus on “*real time*” data so that it can be analyzed quickly and formatted so it is understandable by senior executives and the board. Electronic means of data capture has also increased in hospitals, leading to increased data quality and completeness. One hospital executive emphasized the use of data quality checkpoints (programmed into the system) to ensure data collected when patients enter the hospital is accurate and is the information needed for reporting.

These adjustments and accommodations have improved data quality; especially in areas with incentive funding attached to them (e.g., wait times). Hospital executives reported being more conscious of the issue of data quality and its continued challenge because they recognized that meeting accountability and reporting requirements was more challenging when data quality was low. Interviewees recognized that high quality data is especially important when used for external reporting and for comparison purposes. One executive at a small community hospital pointed out that an added incentive to ensure complete, high quality data is that more labour intensive methods (such as chart audit) will need to be used if data needed for external reporting requirements is not complete.

6.6.4. Measurability and controllability of measures

Measurability and controllability are two issues brought up by hospital executives when discussing performance measures used for accountability. In section 6.5.1, interviewees indicated that clarity around the rationale for why indicators are chosen would help organizations align their priorities with those of the health system. One rationale for indicator choice is measurability; hospital executives stated that measures were chosen by the government, LHINs, or HQO because they were measurable (could be quantified) and the data was readily accessible. The measures chosen were often already being used and were visible to the public. Because hospitals were already collecting the data it is easier to retrieve and use for external accountability reporting requirements, but measurability does not mean the indicator is the best one. Some interviewees indicated that the chosen measures related to issues of health system importance, but not necessarily to areas of importance to the hospital.

“They pick measurements [for QIP and H-SAA] that are readily accessible data and they do not necessarily represent ... what’s most important for that organization in that community.” (CEO, Small Community 1)

Organizations choose their own objectives and priorities, but also consider what can be measured, suggesting that organizations also focus on what can be measured.

“We are all measuring. It’s this notion that if you can’t measure it you can’t manage it. So if it’s not something that can be measured then it doesn’t tend to become an objective.” (CEO, Teaching 1)

Measurability generally means that an indicator of performance can be quantified, not that chosen indicators are straightforward or that organizations can easily affect the outcome. This leads to the second issue, controllability. Indicators used at the organizational level are intended to align with areas important to health system performance, but these areas can be challenging to affect at the level of the organization. Hospital executives reported spending time on collecting data that may not be useful or being held accountable for indicators that are “*too big*,” are affected by more than just the acute care hospital.

“I find a lot of information that we are required to give them [H-SAA and QIP] is kind of moot. It doesn’t really have a lot of meaning... You are measuring something or you are giving them information on something that, number one, has always been that way and two, is very difficult for us to change because of our size and how we do things.... It’s not like we can go down the road and access something that will change our numbers. ALC is a good example. There is nothing that we can really do to change that.” (CEO, Small Community 2)

Interviewees indicated that not all measures hospitals are required to report on are within their control. Examples given were for percentage of ALC patient days (see above quote), non-elective readmissions (see section 6.6.2), and wait times. These indicators were identified by interviewees because there are many factors that influence them, making it difficult for hospitals to have complete control over them. Lack of control over all aspects that affect their performance based on an indicator limits the value of using the indicator for monitoring the performance of the organization and/or the health system.

Percentage of ALC patient days was the example given most often as an indicator hospitals felt they did not have control over. All hospitals, regardless of size, reported that this indicator was challenging to affect. Interviewees from small community hospitals reported that ALC patients in their communities often do not have family living nearby, and that community supports are not available, but would be in larger urban centres (e.g., home care services, Community Care

Access Centres (CCAC) close to the city or town, or seniors living facilities). This can make discharging these patients problematic. Because of this, small community hospitals have no confidence that they have the resources to reduce ALC days and do not have as many strategies available to them to reduce ALC days. One hospital executive stated that because of the lack of controllability the hospital would not sign off on reduced targets in the H-SAA for percentage of ALC days as set by the LHIN.

“I have absolutely no plans whatsoever or any confidence that I can reduce them [ALCs] so therefore I’m not prepared to sign off on a reduction of these things [in the H-SAA].” (CEO, Small Community 1)

Hospitals are dependent upon the funding they receive from the provincial government through the LHINs. This financial dependence limited the ability of the hospital to negotiate targets for H-SAA indicators.

“We don’t see a means to meet that metric [ALC days] and they [the LHIN] say we always have the option not to sign the accountability agreement but [then] our base hospital funding gets pulled.” (VP Finance, Small Community 1)

Even large community hospital executives from areas with more community supports for ALC patients stated that they had limited control over their volume of ALC patients and this affected other indicators.

“On any given day I have sixty to seventy ALC patients here. I can’t control that. The CCAC is the placement structure to facilitate the outflow of those [ALC] patients, yet I’m ultimately held accountable for that volume of patient because it back ends into my emergency and to the number of admitted patients waiting for a bed, and so forth.” (CEO, Large Community 1)

It was also noted that requiring the hospital to rely on the CCAC is not always effective, even when the CCAC is doing its job well. Joint accountability between the hospital and the CCAC for percentage of ALC days was suggested by one interviewee.

“...I can’t manage this ALC thing. Let me contract with my own VON to help me manage these ALC patients differently outside of the hospital. But no, I have to rely on a system relationship with the CCAC. The CCAC is doing a great job, but this is where I think we have system metrics that are not aligned with system governance, until both parties [hospital and CCAC] are held accountable for the metric of ALC.” (CEO, Large Community 1)

A single accountability agreement with a broader scope that includes the full process of care provided to the patient would help address the issue of controllability for system level indicators. Expanding the scope of the accountability agreement would be most useful for hospitals that sign multiple accountability agreements.

“We have an LSAA, we have an MSAA, and we have an H-SAA. These are siloed accountability agreements. But from the patient’s perspective they go through all these dimensions of care. So why don’t we have a broader accountability agreement for how the patient goes through the system as opposed to the institution that’s attached to the patient, or the narrow episode. Then have system indicators to go across that, not separate LSAA, MSAA, and H-SAA related indicators.” (CEO, Large Community 1)

Hospital executives felt their organization had limited control over wait times, both in their emergency departments and for priority elective surgeries. The measure of emergency department (ED) waits is not only impacted by efforts made in the ED, it involves the whole organization. One interviewee thought that when the government chose ED waits as a metric it did not realize that reductions involved the whole hospital beyond the emergency department and system processes.

“[The government says] reduce your 90th percentile data on ED time to admit to a bed. That’s massive because it’s not about the ED. It’s really about the backend, getting people out of the hospital. I don’t know that anybody, government included, understood that. You can’t get them [patients in the ED] in if you can’t get them [other patients already admitted] out first. In order to really streamline that [and impact ED wait times] you have to change practice in almost everything you do.

“It’s not just beds on wards. You have to think about portering, housekeeping, cleaning beds, cleaning floors. You have to think about admitting processes. You have to think about nursing and how they do their job. You have to think about physicians and how they write their orders. You have to think about medical imaging and when they actually do the X-ray that you require on the day of discharge. You have to think about labs and when they draw the blood on the day of discharge. ... The entire organization has to start thinking about what it does in order to shorten length of stay to increase capacity so you can actually get people in the ED into a bed sooner. It’s massive. It touches everything you do.” (CEO, Teaching 1)

One interviewee indicated that physicians are the ones who control surgical wait times and the data, and know why waits are sometimes longer than they “*should be*” (e.g., the patient wants to wait to have knee surgery in the winter). Hospitals are held to account for poor results when

surgeons, or even patients, actually influence whether the target for the measure is achieved or not. The formula used to calculate wait times for surgeries or diagnostic tests in the H-SAA indicates that it does take into account the number of days the patient is unavailable (Government of Ontario, 2008) due to patient-related reasons such as the patient choosing to defer the surgery (e.g., for a vacation or family issues). The problem noted by this interviewee may be with physicians not collecting patient unavailable days accurately and/or not giving this data to the hospital to use for its accountability reporting requirements.

Focusing on easily measureable indicators may not capture all areas of importance to the health system or even the acute care hospital sector. As well, lack of controllability can result in organizations being held accountable for areas they have limited ability to affect. These issues may continue as the scope of accountability increases, the next theme discussed.

6.7. Scope of accountability: what is measured

Accountability is focused on as a way to ensure public funding is used for the agreed purpose, access to health care services is increased, and high quality health care is delivered. In order to accomplish these goals the umbrella of accountability has broadened in Ontario's acute care hospital sector from the initial focus on financial accountability and volumes of services provided, to include patient experience, and the quality and safety of care. Chapter four provided an account of the performance measures being used in Hospital Service Accountability Agreements (H-SAA) and Quality Improvement Plans (QIP). The findings from those documents show the expansion of what is measured and changes in the focus of accountability since 2005. Interviewees were also cognizant of the expanding focus of accountability; they considered this expansion to be an improvement because there is increased focus on tracking indicators for quality of care, setting targets for performance indicators used in the H-SAA, and the requirement for all hospitals to have a QIP. This section will present findings from interview data on the scope of accountability, specifically the expansion into quality of care and quality improvement, including organizational responses. Gaps in accountability identified by interviewees are also presented.

6.7.1. Increased focus on quality and quality improvement

There has been a strong shift towards a focus on accountability for quality and quality improvement since ECFAA and the introduction of the mandatory QIP. Chapter four revealed

the increased number of indicators being used for accountability in areas related to quality improvement (including patient safety). Expansion of accountability is viewed as positive by interviewees. Their organizations now have to balance the attention paid to financial accountability, and accountability for volumes and quality of care, as well as reporting requirements. The increased breadth of accountability has increased the organization's own focus on accountability, both externally and internally, and on performance management; hospitals now choose accountability indicators as "*core business indicators*." Interviewees indicated that accountability drives performance because when organizations "*pay attention to something, it tends to get better*." An example given is emergency department wait times; while challenging (see section 6.6.4) it is monitored more closely by the hospital because it is an accountability indicator, and has increased the awareness that if patients are not being treated (are waiting too long) they are not able to recover as well.

"It's [ED wait times] a very basic dimension of patient care and quality care. When patients are waiting, they are not being treated, not advancing their recovery of their illness or whatever they are suffering from. So I think it's [ED wait times as an indicator] a good thing, absolutely." (CEO, Large Community 1)

Quality indicators and accountability for quality improvement have also increased the focus on more dimensions of quality including timeliness of care, access, efficiency, and effectiveness of care. Some hospitals were already focused on quality and using a QIP, but now all hospitals have a structure to follow with specific expectations and indicators to provide them with a guide for performance management. Interviewees stated that quality of care and other accountability indicators are explicitly included in some organizational strategic plans. The increased focus on quality improvement is driven by the perception of the QIP as "*almost a legal agreement*" approved by the hospital's board and signed by the board chair, chair of the board quality committee, and senior hospital executives. The focus on quality has also increased the focus on patient-centred care and legislation has led hospitals to invest more in quality improvement in order to achieve successes.

Even though some hospitals were already focusing on quality of care before ECFAA, hospital executives reported that getting the whole organization and its people to share this focus was a challenge. ECFAA, the introduction of QIPs, and the requirement that hospitals publicly report on quality improvement helped get the rest of the organization involved. Hospital executives

indicated that there is a more distributed awareness of everyone's accountability within the organization to contribute to the quality agenda. The increased awareness on quality throughout the hospital also ties to the organization's increased focus on external accountability requirements.

“It [ECFAA] was helpful because it's [quality improvement] a provincial priority. It was enormously helpful [to me] to just legitimize it [my focus on quality improvement] because previously some people [in this hospital] said, ‘This is just stupid. We already provide great care. We are already doing wonderful things. We are already saving the world. What are you [CEO] talking about?’” (CEO, Teaching 1)

Executives reported that more consultation about quality now occurs with more people in the organization when the QIP is being created, compared to before QIPs were mandated by ECFAA. Even in the case of a hospital that had a more elaborate and complex quality plan before QIPs were legislated. The medical staff leadership is more focused on the role they can play in various projects moving towards increased quality. Clinicians have also increased their focus on quality improvement and aspects of patient care that can be measured and monitored.

Prior to the increased focus on quality, hospitals were more focused on the costing side of their organization; that framework has now expanded into the quality side of services provided.

“We hired people whose job it was to understand and collect the data around all of the patient care activity we do and then develop mechanisms to assign costs to various activities. We could then tell how much it costs us to do a brain operation, versus a heart operation, or versus some sort of medical treatment. We've had that for a long time. ... What we've done more recently is expand that into other aspects that are more on the quality side, not just on the costing side.” (CEO, Teaching 1)

Communication between those reporting on quality, volumes, and financials is increasing as hospitals and various internal departments recognize the need to “*connect all the dots*” for accountability purposes. Alignment between management and staff is also increasing to ensure that important (publicly reported) quality improvement areas are focused on throughout the organization. As well, there are more materials available to organizations to help them with their quality improvement efforts, making it “*easier to see the forest from the trees.*” Organizations have made changes to increase accountability, performance measurement, and quality improvement.

“...we built more systems and structures to drive accountability, to drive metrics and to really drive quality improvement.” (CEO, Large Community 1)

Interviewees indicated that the general policy of quality improvement, the requirement to have a board quality improvement committee, and the process of creating a QIP are more important than the actual measures used. Many measures were already being monitored and targets being met, but the process of creating a QIP is rigorous, including greater attention paid by the board on quality initiatives and quality oversight. Organizations are aware of areas that may not need improvement, but they still monitor them to ensure the organization continues to perform well. Hospital executives reported that their organizations focus more on areas identified by the province; as noted above, the province has tied executive pay-at-risk to the achievement of quality improvement in these areas. The identification of areas in need of improvement and subsequent increased focus can lead to significant improvement opportunities that were not captured before the sector-wide focus on quality improvement.

There are challenges associated with the broadening scope of accountability. Even though the QIP process is rigorous and there is more oversight on measures being used for accountability (including those used in the H-SAA), the significant increase in the number of indicators has made it difficult for some hospital boards to provide the necessary oversight. An example given was boards requesting the use of a composite indicator instead of all the required ones currently being reported. Even with the increase in indicators, one interviewee felt that the public might not receive the right message.

“They [the indicators] do not give the full picture of the quality of care that we are providing to our residents. So you have to be very careful with all these measures about what it is you want to be using them for. I’m all about being accountable to people and telling them the good, the bad, the ugly, but if you just use what’s in your accountability agreement and what HQO has decided to say is there, I don’t think you are giving the full picture.” (CEO, Small Community 1)

Another challenge is that as accountability expands its scope, many indicators are lag indicators. These indicators cannot be affected quickly or easily. Any changes the organization makes in order to improve outcomes, as measured by these indicators, can take more time than the reporting period used for accountability (quarterly or annual). Because of this, executives were concerned that lag indicators do not provide information on the impact of changes until some

time has passed. As well, hospital executives indicated that most innovations in quality improvement are short-term, made when funding is available and in areas where results can be seen more quickly. Interviewees were concerned that these improvements may not be sustainable over the long run without a continued flow of resources and hospitals do not have the resources for longer-term innovations that require more sustained investment.

6.7.2. Patient experience

Hospital accountability has also expanded to include the patient experience as measured by patient satisfaction. Hospital executives reported that prior to ECFAA, not all hospitals were collecting patient satisfaction data, but now all hospitals are required to. The current system is more focused on patient-centred care.

“...there is a lot more focus on patient-centered care then there was in 2004. ... You could say well, hospitals are a lot more engaged in it [patient-centred care] now. They are realizing they have to be doing a lot more and they are doing a lot more getting patients involved in their decision-making....” (System 2)

As noted earlier, one large community hospital chose three main goals for the year, one of which was improving patient satisfaction scores. Hospitals increased communication between clinicians and patients, and increased the frequency of contact between nurses and patients. Patient satisfaction scores are monitored more frequently so that reductions in scores can be addressed. One teaching hospital CEO even communicated patient satisfaction scores to hospital staff on a weekly basis. Hospitals focused on increasing the number of patients that provided the highest satisfaction scores, not just increasing the satisfaction score by a certain percentage. When funding allocation decisions are made, one small community hospital specifically considered whether patient satisfaction would increase.

“Is it [the money being spent] addressing an issue that has come up either through a patient survey or a staff survey? That’s the mindset that we take. ... Patient first. Does it [money being spent] fulfill a gap that we would otherwise have based on a patient satisfaction survey?” (VP Finance, Small Community 1)

Hospital executives recognized that patient satisfaction is affected by the whole organization, *“from the parking attendant to the physician.”* Because of this, they have worked on getting their whole organization involved in improving the overall experience of patients. The current legislation requiring hospitals to collect and report data on patient satisfaction gave a teaching

hospital CEO a necessary lever to get the whole organization involved. Prior to ECFAA, clinicians were more concerned about outcomes, but are now also required to consider patient experience and satisfaction.

*“They [clinicians] weren’t worried about patient experience or efficiency, why would they worry about that? They are just trying to get good outcomes. So what we said is that [patient experience is] important. I don’t give a s*** if you’ve got great outcomes. If you treat your patients badly that’s not quality. It [ECFAA] made it [quality and patient experience] clear.” (CEO, Teaching 1)*

All this effort and focus on increasing patient satisfaction scores emphasizes the increased importance of patient satisfaction to hospitals in the current environment of accountability and quality improvement.

6.7.3. Gaps in accountability

Even with the expansion of accountability, hospital executives identified gaps in accountability during their interviews. Interviewees agreed that the H-SAA and the QIP contain important indicators, but the indicators do not provide the full picture of the organization’s quality of care. The mandatory indicators often do not capture areas of greatest improvement opportunities in the organization. An example given was that the holistic view of the patient is missed; the current focus of accountability is on parts of care, not the complete treatment. Even including patient satisfaction does not appear to fill this gap. Another example of a gap identified in the interviews is the absence of a measure capturing quality of life and functional status of a patient after receiving treatment at an acute care hospital.

“Well, for example, a patient comes into hospital and they have hip surgery. Are they better off afterwards? They may have had a perfect surgery and they may have had no complications but are they walking any better? Have they resumed their normal activities? To me that is something I’m very interested in because a lot of the metrics we have are still really surrogate outcome measures.” (QI, Teaching 1)

Interviewees felt that this information is necessary in order to achieve accountability to the public for the goal of good patient outcomes. Interviewees recognized that these gaps are present because the full cycle of patient care or the quality of patient outcomes are more difficult to measure and use for accountability purposes.

Rural hospital executives report that their organizations address gaps in accountability that are specific to their size and location. These hospitals are small and find that many of the recommended QIP indicators do not apply to them because they provide many services that are not captured by the current standardized reporting templates, which are more congruent with services offered by urban and larger hospitals. Executives stated that they choose measures for their QIP that are appropriate for their organization, but also approximate those recommended by the QIP.

“How come they [MOHLTC and LHIN] felt it [a QIP indicator] was so important to measure it? Well they did. Maybe that’s what they need in urban centres. An awful lot of the mandatory indicators ... like the HSMR... [are] a statistical nightmare for us. We don’t have a big enough population. ... Central line infections [is another one]. ... I think there is only two [indicators] in there [the QIP] that we actually track. Most of them [indicators] don’t even apply to us.” (CEO, Small Community 1)

The current focus of performance measurement for accountability neglects broader aspects of care and the integration of different health care providers for the delivery of care. The current measures do not capture integration between health service providers, but hospitals may capture missing aspects on their own.

“So things like the number of integrations the hospital has entered into. That’s a strategic priority for our hospital. We track the number of integrations. That [number of integrations] doesn’t appear in the H-SAA or the QIP, for example. So we have a strategic dashboard that we also track on top of it [the H-SAA and QIP]. So some of the indicators within that dashboard are consistent with the H-SAA and/or consistent with the QIP.” (CEO, Large Community 2)

Hospital executives suggested that different types of care could be provided in the community to prevent patients from needing acute care (e.g., pharmacist visits in the patient’s home to help with medication management so that the patient does not end up in the emergency department). There are no measures for these aspects of care, and thus no incentive for organizations to organize and carry out these activities. These types of measures would also be challenging given that organizations need to report to numerous external entities interested in holding hospitals accountable. Hospital executives also identified a gap created by the multiple agencies holding hospitals accountable. Interviewees felt it would be difficult to create one location for all data and information that the government, LHIN, other hospitals, or even the public can access for

accountability purposes. Even so, hospital executives considered a central repository as one way to facilitate accountability and some have already begun the process.

“So where [another nearby LHIN] is trying to create this mega data repository, we’ve taken the approach of using software tools that actually will connect existing [hospital] databases” (CEO, Teaching 2)

Another reported gap is that the LHIN has not caught up with the expansion in the scope of accountability in terms of its ability to monitor and deal with problems that may arise. There is a specific plan outlined by the LHIN when a hospital does not meet financial accountability requirements. Conversely, if quality targets are not met hospitals “*suspect*” that discussions for improvements will occur between the hospital and its LHIN. Hospital executives were skeptical as to whether the data collected and reported for accountability purposes are monitored, and whether the LHIN is reviewing all the data reported to them.

“Some. Some. More towards very little [of the information reported to the LHINs and MOHLTC is used]. I’ve heard that from others as well. The sense is they [LHIN and MOHLTC] probably use less than twenty percent of what we send them.” (CEO, Teaching 2)

One interviewee was not convinced that the LHINs knew “*how to do quality improvement,*” limiting the LHINs’ ability to oversee hospital activities and limiting the effectiveness of this instrument of accountability.

Hospital executives interviewed were also concerned about other hospitals’ compliance to accountability reporting requirements and whether reporting is monitored (or audited) by the government or LHINs. Without monitoring, organizations may be able to “*overstate*” their performance on indicators, hindering the success of reporting for accountability purposes and even leading to unintended consequences (see section 6.8). Hospitals were also skeptical about whether all LHINs had the needed human resources to evaluate and monitor the reporting of all indicators.

“I find it just too detailed for them [the LHIN]. They will monitor the financials but all of the other service components and stuff like that, I’ve never seen any rigor put into the evaluation of it and I don’t think they [the LHIN] have the staff to be able to do it.” (CEO, Small Community 1)

Some LHINs carry out formal analyses of their hospitals' QIPs and H-SAA and provide feedback, but not all interviewees indicated that this was occurring, making it unclear whether feedback was provided by all LHINs. Feedback is an essential component to accountability; its absence is a gap in the current approach to accountability in Ontario's acute care hospital sector. Interviewees also indicated that HQO provides limited oversight based on the QIP data across the province, not at the hospital level and only some at the LHIN level, limiting the quality of feedback received from HQO.

“Then there is Health Quality Ontario that has done some high level analysis on the QIP across the province. I think it's high level analysis and suggestions for how we might approach the QIP but that's the extent of the oversight from the regulators.”
(CEO, Large Community 2)

In this environment of limited or inconsistent oversight, and few consequences when accountability requirements are not met, the instruments used to achieve accountability may lead to unintended consequences. The next section provides the interview findings about unintended consequences resulting from the use of performance measurement, reporting, and financial incentives for accountability.

6.8. Unintended consequences

Chapter two provided examples from the literature of unintended consequences that are possible when performance measures and public reporting are focused on for accountability. Interviewees also reported on unintended consequences, both positive and negative. They indicated that positive consequences are generally intended, and if unintended, they are unmeasured by-products of some other process being measured. An example of a positive unintended consequence was the increased focus on data collection, quality, and analysis.

“Back to data quality... every day you scratch and sort of look at stuff and realize that it kind of mattered before [accountability was focused on] but it really matters now.” (Manager IT, Large Community 1)

“...I would suggest, based on my experience over the last ten years, the data quality problems are starting to disappear. ... Again, what gets measured gets scrutinized more closely on the data quality side.” (CEO, Small Community 1)

One interviewee indicated that if positive unintended consequences are occurring then not enough thought was put into the choice of the performance measure. Most examples of

unintended consequences provided by hospital executives were negative, such as chasing the metric, fixing the data, misinterpreting the data, gaming, tunnel vision, reduced innovation, crowding out, and human resource challenges.

Measure fixation can occur when organizations focus on the measure being used, but lose sight of the ultimate objective underlying the use of that measure (Smith, 1995). Interviewees referred to this unintended consequence as *chasing the metric*. Interviewees indicated that some measures were too narrow, capturing only part of what is necessary to deliver high quality, accessible health care. Currently, only part of the patient experience is addressed by the measures being used. Concern was also expressed over the use of executive pay-for-performance (P4P) or pay-at-risk because if too much income is at-risk the incentive to chase the metric increases and attention is diverted from the ultimate goal of increased quality.

“My opinion, quite frankly, is that I don’t believe, and I’ve never believed, that it was wise public policy to incentivize executives for...for example balancing your budget. I think it leads potentially to inappropriate decisions that might be motivated by getting a bonus, if you will, or additional compensation and you might lose sight of the quality piece. It may lead to inappropriate decisions by the executives....” (CEO, Large Community 2)

Most interviewees did not think that the current P4P framework influenced executives to chase the metric, because health care executives are not solely motivated by their compensation and the current amount of P4P is low. Their motivation to provide good patient care keeps hospital executives focused on the ultimate objective.

“I think my people are basically working to make this place the best place it can be and part of that is to hit those objectives, but not at all costs. Not at the expense of an unintended consequence, not at the expense of something else bad happening to achieve that good. They wouldn’t do that, ever. If we put enough money at-risk maybe they would. Put half their income at risk to achieve that metric, now I think you might get people fixing the metric at any cost because now it’s too important. It’s not about doing the right thing anymore it’s about hitting the metric.” (CEO, Teaching 1)

When too much emphasis is put on performance measures organizations have an incentive to manipulate or *fix the data*; this was the unintended consequence of misrepresentation defined in chapter two. Interviewees indicated that “*fixing the data*” was more likely to occur when organizations cannot fix the problem, leading them to fix the data. An example was the case of

LHIN-required administrative cost reductions. Not all organizations can easily reduce their administrative costs; in order to meet the requirement they could move costs around to other areas of the hospital in order to reduce administrative costs (but overall costs remain the same). Additional auditing or monitoring to circumvent this unintended consequence will be an additional cost to the health care system, negating the benefit of reducing hospital administrative costs.

“I can see why they [the LHIN] want administrative cost reductions. I know firsthand that people are manipulating that data in order to meet that ten percent cost reduction. They are just moving the cost out to other areas of the hospital. We haven’t done that here, but I know for sure that that’s going on in other areas. It’s [cost shifting] not subject to audit.” (VP Finance, Small Community 1)

Other examples of fixing the data were given for the hand hygiene and surgical safety checklist indicators. These measures are audited, but interviewees noted that organizations know when the auditor is coming so personnel are informed and then follow the required protocol in order to achieve their target. This example of fixing the data can also be used for chasing the metric. The ultimate goal is no hospital acquired infections (an outcome) or patient safety, but the metrics divert the focus to a checklist.

*“If you look at surgical checklist in the OR, one of the [QIP] reporting elements. ... There are five components to it. You see some hospitals reporting one hundred percent all the time. We know that’s bulls***. It’s all driven by the quality of what you are doing. So if you have organizations that take it in a very matter of fact way, ‘Oh well, we’ll always tick yes,’ ... ”* (CEO, Teaching 2)

These checklists and activities are important but do not guarantee patient safety or zero hospital acquired infections. Focusing on hand washing or simply checking boxes may also mean other aspects of care that affect patient safety are missed.

Hospital executives noted that poor quality data can lead to *misinterpretation* (from chapter two), which can occur when data quality is low and when there is variability in measurement or definitions of the measures used (Freeman, 2002; Smith, 1995). When misinterpretation occurs, organizations are challenged to analyze or understand their performance data. Misinterpretation can also occur when organizations do not have personnel with the required skills or other infrastructure to collect high quality data. Interviewees indicated that increased clarity and

standardized definitions of performance indicators is occurring. Even so, they remained skeptical as to the quality of data being reported because organizations may always report their data in a positive way without undertaking a proper assessment of their practice. Hospital executives interviewed recognized that they needed to increase the quality of their hospital's data and analysis capabilities, including hiring staff with the required data analysis skills, developing decision support or other data analysis tools, or working with larger hospitals with these analytical abilities.

"...you don't necessarily have people who are good at analyzing data, such as PhD statisticians. You actually have to go hire them. That's difficult in an environment where there is no money." (CEO, Teaching 1)

"We are going through a major upgrade of our financial and information system in conjunction with [nearby large community hospital]..." (VP Finance, Small Community 1)

Gaming occurs when the behaviour of organizations is manipulated to gain a strategic advantage (Smith, 1995). Interviewees were able to give examples of gaming from other jurisdictions such as the UK, but none thought that gaming was prevalent in Ontario's acute care hospital sector. One executive indicated that hospitals are more likely to claim that poor performance was beyond their control before gaming the metric, particularly when the consequence for not meeting a target is not severe (or non-existent).

"There are no consequences. Maybe there are [consequences] in some cases, but if there is none then why would you really be that worried about it [not meeting a target]? There is always that infamous clause in there [the H-SAA] that sort of says, 'If you didn't hit [your target due to] factors beyond your control, away you go.'... I would tend to think that people use that [factors beyond their control] more so than they would ... game it to get the number." (CEO, Small Community 1)

Organizations can choose the indicators and targets to use in their QIPs. Flexibility in the choice of QIP indicators combined with executive compensation tied to performance was identified by hospital executives as creating an incentive for organizations to choose non-challenging indicators and/or targets. Choosing indicators and/or targets that are not challenging is similar to the unintended consequence of *tunnel vision* in chapter two. Tunnel vision occurs when the organization being measured focuses on easily quantifiable (measurable) areas of performance and neglects areas of performance more difficult to measure (Smith, 1995), or chooses targets

easier to achieve. The interviewees said that their hospitals did not engage in such activities, but that they knew of other hospitals where quality improvement was not taken as seriously and these activities occurred. Hospital executives from larger hospitals think that tunnel vision was more likely at smaller hospitals facing executive pay-at-risk under ECFAA because they did not already have performance-pay at their organizations and their boards chose easy targets to ensure executives did not lose income.

“I would say most places just game it. They put in easy stuff and they all get all of it [at-risk-pay]. What happened with smaller organizations is because this [P4P] was inserted in the midst of pay freezes people actually had to take a reduction [in their base salary]. So there was almost a wink and a nod.....oh, we’ll make sure you get it [base salary] all back. What a useless exercise that was.” (CEO, Teaching 2)

Ossification may occur when *innovation is inhibited* by the focus on performance measures (Smith, 1995). The risk of innovation being inhibited was identified by interviewees, noting that the current focus of accountability is on reporting, and improvement efforts may suffer as a result. Focusing on reporting can also lead to *suboptimization* (see chapter two) if organizations focus their QIP performance measures and targets on local objectives, ignoring the broader objectives of the LHIN or health system. Hospital executives thought this was possible because independent hospital boards (especially those at smaller hospitals) do not agree with the changes to executive compensation brought in by ECFAA. The salaries of small hospital executives are affected more than the salaries of executives in larger hospitals. Some boards choose targets for the P4P quality indicators based on what the organization can accomplish rather than the intended goal of the health system (requiring a target that “*stretches*” the organization or would require innovation).

“I guess what I would like to suggest to you is that we are very serious about it [the QIP and quality improvement]. We are very serious about putting down measures that make a difference and measures that are stretch targets, and yet I can tell you there are a number of my colleagues who don’t take it that seriously and just put down targets for the sake of putting down targets because it’s in legislation. I still think that goes on out there.” (CEO, Small Community 1)

Crowding out is another unintended (although, possibly anticipated) consequence identified by interviewees. Interviewees recognized that organizations could not focus on everything deemed important so their focus is diverted to areas with incentive funding (e.g., wait time priority

areas). Focusing on these areas of care leads to the intended improvements in those areas but does not improve other areas that are closely related. For example, wait times for MRI scans have decreased but at the expense of increased (or no change to) wait times for mammographies. Another example given was for orthopedic surgery wait times. Hip and knee surgeries have incentive funding tied to them so their wait times have decreased, whereas spine surgery is not a priority (no targeted funding) so these patients can wait “*two or three years.*”

The final unintended consequence was the effect that mandated executive pay-at-risk (in ECFAA) would have on the ability of small community hospitals to attract and *retain experienced executives*. Interviewees from small community hospitals noted that executives who face pay-at-risk (in the form of a “*claw back*”) in their organization can choose to work at a larger, near-by organization in a lower level executive position (no pay-at risk) and end up with a higher annual salary. The risk of losing experienced executives was not as likely at larger hospitals where performance based pay was already included in the annual salaries of executives.

“We’ve got some nursing staff making more than the VPs. ... if I went thirty minutes down the road and worked at the [larger hospital] at a director level my salary would go up by twenty-five percent. ... They [directors] are not subject to pay-at-risk because they do not report directly to the CEO.” (VP Finance, Small Community 1)

“It’s [P4P] not an incentive. All it does is cause people to say, ‘No, I’m not going to go into management. Why would I? I’m getting a lot more respect and less stress, less responsibility, probably about the same amount of money if I stay exactly where I am.’ It’s going to be harder and harder to recruit good people for top [management] positions.” (CEO, Small Community 2)

Overall, interviewees indicated high levels of integrity and transparency related to performance measures and reporting of this information, which reduces the incentive to engage in activities associated with and leading to unintended consequences. Interviewees reported being committed to accountability and quality improvement, even if it led to sanctions or lost pay-for-performance at the executive level because “*people in the patient care business... do it because they are committed and they get paid fairly.*”

6.9. Strengths and weaknesses of instruments for accountability

Previous sections of this chapter have shown that the current environment of accountability in Ontario’s acute care hospital sector is still developing. Hospital executives see benefits resulting

from the focus on accountability and the instruments being used to achieve it, as well as gaps and unintended consequences. This section will address the strengths and weaknesses of the instruments used for accountability, and how organizations are affected.

6.9.1. Strengths of accountability instruments

Interview findings indicate that the most coercive policy instrument used for accountability was legislation, specifically the CFMA (which mandates H-SAA) and ECFAA (which mandates QIPs and a focus on patient satisfaction). ECFAA gave hospital executives the lever they needed to get their whole organization involved in quality improvement and the patient experience. The increased focus on performance measurement and standardized reporting requirements is also considered a useful instrument for accountability, even if it is challenging for some hospitals (especially ones in small communities). Interviews indicated that performance measurement has provided hospitals with a focus as areas highlighted by H-SAA and QIPs helped hospitals to streamline what data they monitor and how they collect it, gave the acute care hospital sector a unified focus, and kept them from becoming complacent in their performance and quality improvement efforts.

“Is there more that can be done? I’m sure there is but certainly I think there are a lot of measurements and if you are in the health care industry you know that there is information overload. There is no shortage of information and indicators and reports that we can draw on in terms of looking at our performance. It’s really about being able to concentrate on the strategic priorities and big dot indicators (as we sometimes refer to them as), it is essential. So I think in some respects having the Ministry assign or identify those key indicators [in the H-SAA and QIP] is not a bad thing. It forces the entire industry to focus on those big things.” (CEO, Large Community 2)

Regulation tied to funding is also a strong instrument for accountability. Regulations that employ financial instruments such as incentive funding are effective in providing hospitals with the incentive to focus on areas deemed important by the government. As indicated in chapter four, the H-SAAs tie hospital funding to the condition that hospitals meet certain performance criteria, including service volumes. Hospitals do not receive their base funding from the LHIN unless they sign the H-SAA. Interviewees reported focusing on areas of accountability tied to funding and that organizational priorities have shifted towards areas that receive incentive funding. The strength of this instrument increases as funding becomes increasingly scarce.

“We’ve been quick to focus on anything we can kind of get funding for, we are on it. That means growing a little bit of the department to make sure that we don’t just track those volumes but work with the program to make sure that they do those volumes.” (Manager IT, Large Community 1)

ECFAA also stipulates the use of financial incentives for hospital executives in the form of P4P tied to board chosen QIP indicators. P4P expanded accountability from the board to include hospital executives and increased the accountability of hospital executives for the organization’s performance on selected quality metrics. Respondents indicated that tying funding to agreed targets and performance requirements was effective in getting their executives to focus on areas tied to funding.

6.9.2. Weaknesses of accountability instruments

The instrument of performance measurement and public reporting is not without its flaws. Unintended consequences are presented above, but interviewees also identified the issue of frequent and sporadic changes to performance measures (noted above). Changes can create uncertainty and reduce the clarity of the health system’s focus, especially when they are frequent or unexpected. Uncertainty in requirements makes it harder for hospitals to align organizational objectives with those of the health system. Hospitals are more challenged to engage in long-term planning when changes to requirements are frequent, creating disjointed projects of accountability and quality improvement.

“Institutions are inundated with projects, and at the end of the day my worry is that they’ll have a bunch of projects that were completed but ... [the organization] will just know how to do little projects, which get done and then maybe aren’t even sustainable. You get a result and then a year later, if you went back and looked, it’s gone. It’s not built in [to the organization]. That’s my worry about the way this is being played out. People treat it [quality improvement] as if it’s just a project and it’s not.” (CEO, Teaching 1)

Changes to definitions of indicators or the indicators used also make data less useful for comparing hospitals to themselves or to each other over time. Changes to performance that resulted from a changed indicator were difficult to explain. For example, the new hospital standardized mortality ratio (HSMR) measurement tool changed the baseline (all hospitals improved), this led some hospitals to appear as though their HSMR performance was worse when it had actually remained the same or even improved.

“We aren’t failing, we are actually still improving. In a relative way we are not as far ahead of everybody as we used to be because other people are catching up.... So you look like you are getting worse where in fact you are not. They [other hospitals] are getting better. This is complicated stuff and when it goes public, trying to explain that is not so easy.” (CEO, Teaching 1)

Posting data publicly is generally thought to increase transparency and thus accountability, but executives at teaching hospitals were skeptical. They indicated that making performance information publicly available does not have any impact on accountability or performance, nor does it provide the complete picture of a hospital’s performance.

Sanctions (or consequences) for not meeting accountability requirements can also be used to help achieve accountability. “Accountability without any fear or concern for consequences is likely not accountability at all” (Fraser, 1996, p.36). The CFMA outlines sanctions such as government appointed supervisors, or even reduced or discontinued funding. While the appointment of supervisors and firing of CEOs has occurred (see section 1.3), financial penalties were rarely carried out in the case of Ontario’s publicly funded acute care hospitals. Even so, the possibility of these sanctions might provide hospitals with an added incentive to follow requirements even when doing so is challenging. Only one interviewee brought up the consequences (or lack of) associated with not meeting accountability requirements. The fact that only one interviewee spoke about consequences indicates sanctions are used infrequently and are not a concern. Accountability includes sanctions or consequences for not meeting requirements; a sanction that is unlikely to be used can be considered a weakness. However, hospitals do not need to worry about sanctions being imposed inappropriately if they are rarely used; hospitals are then less likely to engage in activities that lead to unintended consequences in order to avoid a sanction. This potentially turns a weakness (e.g., sanctions are not used) into a strength (e.g., unintended consequences are less likely to occur).

The power of hospital executive pay-for-performance (P4P) financial incentives legislated in ECFAA is not as strong as it could be because larger hospitals already had a pay-at-risk component (performance envelope) in their executive compensation packages. These executives are experienced with pay-at-risk and the ECFAA requirement did not affect their base salary level. They could tie a portion of their original pay-at-risk to the QIP, thus meeting the P4P requirement and not affecting their base level salary. Sparing the base-salary of executives

reduces the likelihood that P4P will negatively affect these executives' priorities or the priorities of their organization (reducing the potential for unintended consequences). Most hospital executive interviewees from larger hospitals reported not receiving their full amount of P4P compensation because they would choose challenging (“*stretch*”) targets.

“We don’t just pick the easy ones [indicators] from the QIP, they are ones [indicators] with a stretched target. By example, five percent of the quality part of all of our at-risk pay was related to the QIP. So we actually got two and a half of the five.” (CEO, Teaching 2)

Executives from smaller hospitals are more concerned about the P4P requirement of ECFAA because the pay-at-risk compensation scheme was not already built into their salaries. The P4P had to be included in their base level salary; they now faced potentially lower base-level salaries^{10,11} if their organization did not meet quality improvement targets tied to their at-risk pay. Interviewees from small community hospitals reported that hospital boards accounted for this when choosing the metric and target tied to P4P, while keeping the patient in mind.

“We never had that performance envelope [that large hospitals have]. So anything that is going to be lost is coming from our base salary. I know the board takes that into consideration too because they are not happy with a lot of the changes that are made and how CEOs or senior management in smaller hospitals are being treated because we’ve never had those perks [performance envelopes] and now we are being penalized for a perk that we never had. They [the board] keep that in mind as well as their focus on patient safety.” (CEO, Small Community 2)

In contrast, executives interviewed at one large community hospital felt that executive P4P was an effective way to achieve health system goals such as quality improvement and accountability. This type of P4P is not uncommon in health care, but most interviewees expressed concern over

¹⁰ The *Public Sector Compensation Restraint to Protect Public Services Act*, 2010 was legislated on May 24, 2010. It imposed a two-year freeze on compensation for non-bargaining employees in the Ontario Public Service and the broader public sector (including hospital executives). This meant that hospital executives could not increase their base salary to accommodate the P4P component legislated by ECFAA. Executives at larger hospitals that already had a pay-at-risk component worked into their compensation package did not face this problem; the pay freeze did not affect them the same way.

¹¹ The *Broader Public Sector Accountability Act*, 2010 received Royal Assent on December 8, 2010 and was amended based on Bill 55 in 2012. The amendment prevents any salary or benefits increases for individual hospital executives until the end of the “restraint period”, 2017/18, unless the payment is related to P4P legislated by ECFAA. The amendments introduced by Bill 55 also states that the aggregate amount of the hospital’s performance pay envelope (all P4P payments) cannot be increased from the last pay cycle before Bill 55 came into effect (March 31, 2012). This means that if one executive receives an increase in performance pay, there must be a corresponding reduction in the performance pay of another employee or group of employees (OHA, 2012).

the possibility that it can lead to unintended consequences or gaming such as fixing the metric rather than fixing the real problem (see section 6.8). Interviewees considered this a strong incentive in the case of small community hospital executives whose base-level salary could be affected by the current P4P scheme. As noted, interviewees said that unintended consequences did not occur at their hospitals, but were thought to be occurring at other hospitals. This finding could arise from a bias in the hospitals and executives that agreed to be interviewed: hospitals that are more engaged in and experienced with quality improvement and accountability initiatives are less likely to engage in activities that could lead to unintended consequences.

Hospital executive interviewees indicated that a low percentage of compensation was chosen,¹² and that executives should only have their at-risk-pay (P4P) tied to areas directly under their control. As well, concern was expressed by executives at small community hospitals over the public perception that is created by the use of instruments such as executive P4P and even balanced budget requirement in the H-SAA. Small hospitals prided themselves in being accountable to their community and keeping their community's best interests in mind at all times. P4P and the balanced budget requirement as accountability tools could suggest to the community that hospital executives have their own interests in mind or are not using public funding effectively and efficiently.

“We are being painted as overpaid, lazy people who use public funds to line our pockets and our lifestyles. It’s unfortunate the indiscretions of a few have marred our image in the public eye.” (CEO, Small Community 2)

These findings show that the weaknesses of the policy instruments being used for accountability create challenges for hospitals. Accountability can be disjointed so organizations are challenged to create a coherent framework that combines the projects and ensures adoption by the whole organization. Without this organizational framework, the sustainability of achievements in accountability may be limited. Organizations may need to redesign processes in order to meet accountability requirements. This can be a more complicated task in some hospitals depending on available infrastructure (project management, data analysis, decision analysis, information technology, etc.) and services they provide.

¹² The MOHLTC only indicates that the amount of pay-for-performance be “meaningful,” and the OHA suggests hospitals start with five percent of the CEO’s salary (sometimes lower for other executives) in the first year of the QIP; moving towards fifteen percent (MOHLTC, 2011a). It is up to the hospital’s board to decide on the amount of executive compensation to tie to quality indicators in the QIP.

6.10. Changing perceptions of strategic issues over time

This section presents interview findings to explain the seemingly paradoxical survey findings from chapter five: in aggregate, the majority of strategic issues were still rated as important but less challenging by hospital executives in 2011 when compared to the 2004 findings, even in the face of multiple accountabilities. Six hospital executives and two health system leaders were asked to provide explanations for this finding. Hospital executive interviewees reported that the focus on accountability, performance measurement, and the use of external reporting requirements do influence the prioritization of organizational strategies. These interviews further indicated that in aggregate, hospitals may be better able to deal with complexity within the system and have likely become more comfortable with the regulatory regime focusing on accountability, but small hospitals respond differently due to insufficient resources (e.g., funding, data analytical capabilities, and human resources).

6.10.1. Ability to deal with the complexity of accountability

When asked why survey respondents now rate strategic issues as less challenging than in 2004, interviewees suggested that in 2004 few hospitals had the required infrastructure to collect and analyze performance information. With the increased focus on accountability and performance measurement since the introduction of H-SAA and QIPs, all interviewees reported their hospitals have systems in place to carry out these activities. An example given by an interviewee was the use of the balanced scorecard in hospitals; it was a novel idea in 2004 and now all hospitals have something similar, making strategic issues such as decision support, performance measurement, and public reporting less challenging. Another example is the electronic health record.

“...we’ve all tried over the last several years to make progress to developing electronic patient records. So it might not be as challenging today because we are already moving along that path. It might not be seen as important or as challenging today because we’ve already made some movement. We had to invest over a million dollars over the last couple of years as a small hospital to upgrade our information systems to put that electronic patient record in place...” (VP Finance, Small Community 1)

The challenge of issues has also decreased because hospitals have a better idea of what the broader health system and their LHIN are trying to accomplish based on a health system strategy and the communication of areas of focus for accountability. Some strategic issues had become more prescriptive or operationalized, which reduced their challenge.

“...there are very specific processes now, that hospitals have to follow with LHINs around, dealing with certain things and so I think from a strategic importance point of view, it might well be that they [hospitals] don’t feel they have to place as much priority on it [Consumer Engagement issues] because it’s become a little bit more mechanical.” (System 2)

There was more emphasis on data collection and specific reporting requirements (as shown in chapter four), which reduced the challenge associated with strategic issues.

“People are more receptive to change that is tied to data capture and reporting. I think more people understand that the days of decisions being made not based on data are gone.... I’m thinking more of the less challenging side.” (Manager IT, Large Community 1)

One system level respondent indicated that there is more support from the Ontario Hospital Association, the MOHLTC, LHINs, Health Quality Ontario (HQP), and the Institute for Healthcare Improvement. These organizations provide support via information dissemination and tools to help hospitals address various strategic issues (e.g., quality improvement, performance measurement, patient satisfaction, and board and senior management performance appraisals), thus reducing the challenge associated with them. As well, the specific processes hospitals must use to show accountability reduces the pressures or challenges because there is a clear protocol or framework to follow.

“...the support they [hospitals] received from the OHA or from the Ministry, the Excellent Care for All Act, requiring it. All these things and possibly the work of Health Quality Ontario in terms of the QIP ... have got them to focus on these things [strategic issues] that were important and also giving them [hospitals] tools and methods that they could use. So now the challenge is less because they [the tools] exist.” (System 2)

Another change since the survey was first used in 2004 is in the hospital executives responding to the survey. Only six of the fifty-three survey respondents in 2011 held the same position in 2004, meaning that many of the individuals completing the survey were not the same as in 2004. Interviewees suggested that these new CEOs might have different perspectives and different ways of dealing with strategic issues than their 2004 counterparts; they may feel more comfortable in this environment of change.

“There might be just new fresh eyes looking at these challenges that are perhaps a little bit more motivated and less anxious about it. The younger generation have

perhaps been accustomed to change, large scale change perhaps....” (CEO, Large Community 2)

As well, interviewees reported that hospitals are spending more time on managing accountability and reporting requirements, including personnel decisions and delegating responsibility. More members of the hospital’s staff (managers, program directors, and other staff) are included in discussions around what to focus on, and which indicators and targets to choose (especially in the case of the QIP). More time is spent on aligning internal and external initiatives. These changes to executives and management of the organization can reduce the perceived challenge associated with the issues, thus lowering the rating of challenge.

“I think in 2004, maybe for a lot of them [hospital executives], it was new and it was challenging. Now they are working with it and they’ve worked with it for a while. So it’s not as challenging. It’s just a way of life. It’s a requirement. We’ve got to do this. Here we go. It’s nothing new. I guess with everything, the start of the implementation of something is always, ‘Oh my god, we’ve got to do this or this.’” (CEO, Small Community 2)

Hospitals have invested in tools needed to address strategic issues and the requirements of accountability. The health system has also worked to develop a strategy that is communicated to health service providers, accountability requirements being one way to do this. As well, as noted above, the individuals holding executive positions in hospitals have changed over time, possibly resulting in a group that has only known a dynamic environment of accountability, or has had more training in hospital administration through professional programs, continuing education, or the Ontario Hospital Association. Increased training can provide executives with more tools and experience to deal with accountability requirements, the next explanation for why the rating of challenge associated with strategic issues decreased over time.

6.10.2. Experience with the environment of accountability

When the Strategic Priorities Survey was mailed to acute care hospital CEOs in 2011, seven years had passed since the survey was first used, six years has passed since hospital accountability agreements were introduced, and five years had passed since LHINs were created. Interviewees indicated that the years of experience with LHINs and an environment of accountability could reduce hospitals’ sense of challenge associated with strategic issues. In 2004, hospitals knew that a regionalization structure was going to be implemented and

accountability agreements with performance measurement were going to be introduced in the near future. There was a “*fear factor*” associated with these changes and uncertainty around the autonomy of hospital boards because some provinces dismantled some or all hospital boards when regionalization was introduced.

“I remember when they put the LHINs in place and everybody was having a hissy because they didn’t want their boards taken over by the LHINs and they didn’t want this and they didn’t want that. Now people are thinking, ‘Oh my god, what will we do if they dismantled the LHINs?’” (VP Nursing, Small Community 1)

Ontario’s acute care hospitals now realize that not much structural change has occurred since the creation of LHINs, any structural changes that occurred were voluntary (hospitals could choose to merge with other hospitals).

“They [hospitals] didn’t see much happening by way of structural change being promoted by LHINs. All of the structural change that occurred was voluntary in 2011 and prior. I think what’s caused them to go down this path [reduced challenge of issues] is they don’t see much happening by way of ...imposed or threatened.” (System 1)

As well, interviewees noted that many of the areas focused on by the instruments of accountability were already areas of interest for hospital organizations, reducing the impact of impending changes and dampening the perceived challenge. What was new and thought to be challenging may still be challenging, but more of a routine. Hospitals have adapted and figured out how to deal with the requirements and the environment.

“I guess with everything, the start of the implementation of something is always, ‘Oh my god, we’ve got to do this or this.’ With the QIPs too, ‘Oh my god we have to have this in by April. What will we do? How will we do it?’ Now ... it’s still challenging. It’s still stressful but you are used to it. You are not listing it as a challenge anymore because you’ve been doing it for a while. It’s still important.... That’s probably why they are rating it that way. If something is new it’s scary and you tend to put this as a major challenge and this is a major stress and now it’s just....yeah, okay. Something we’ve done in the last five or six years.” (CEO, Small Community 1)

This suggests that hospitals figure out what needs to be done to address strategic issues (including accountability requirements), making them less challenging.

Prior to the creation of LHINs hospitals were directly accountable to the government, and directly accountable to their communities. Now that LHINs are involved, hospital accountability to the public may be diluted.

“Before [LHINs], hospitals were pretty much accountable on their own. Now I guess they can share that accountability with the LHINs. They can deflect some of the problems.accountability to the public is a bit more diluted [in 2011] because of the LHINs... hospitals are making a decision, they have to get approval from the LHIN to do it.... So they [hospitals] can say, ‘Hey, the LHIN agreed to it.’” (System 2)

This may reduce the pressure hospitals feel when dealing with the complexities of accountability and lead to reduced ratings of the challenge of issues. Given earlier interview findings, this explanation may not hold because hospital executives continued to feel accountability to their community or the public, even in an environment of multiple accountabilities (see section 6.4.1). These findings suggest that even though hospitals may be able to deflect accountability to the LHIN, they do not indicate that they are doing so.

Interviewees considered LHINs beneficial because they provide their organizations with a geographical area including other organizations they should or can work with. LHINs can facilitate this by encouraging organizations to work together to provide more patient-centred care. Hospitals reported being more focused on involving patients in decision-making and on patient satisfaction because of ECFAA legislation. This patient-centred focus has even increased the movement of certain acute care hospital services to the community (e.g., independent health facilities). Given their resource constraints, hospitals are on board with the move of care to the community because it can remove pressures for hospitals to budget for and provide services, and meet external expectations associated with those services. As pressures on the hospital decrease, the challenge of strategic issues may also decrease because the LHIN and/or the community are dealing with the issues.

“What I’m watching happen is the LHINs seem to be agreeing [with hospital decisions] a lot more than they used to I guess because they realize that the hospitals aren’t getting big increases in money and inflation is impacting them [hospitals]. Of course, the LHINs also had this idea that more should be done in the community. Hospitals can say, ‘Well, we shouldn’t be doing that. So let us stop doing that service. Let the community pick it up.’ I think they get a little bit of help from the LHINs, a little bit of cover.” (System 2)

At the time of writing, all acute care hospitals have had over seven years of experience with LHINs and the increased focus on accountability. Sub-group analysis of the survey findings revealed that small community hospitals differed from larger hospitals in that they rated issues as more challenging. These small hospitals likely did not have the infrastructure that larger hospitals had when legislated accountability requirements were first introduced.

“I have run all three types [of acute care hospitals] in my career. The toughest hospital to run is a small hospital. Why? Because you don’t have the support structure. For some functions you are it. You can’t go to the PR department. You don’t have one. You are the PR department.” (System 1)

Interviewees indicated that small community hospitals are more likely to be late adopters of systems and tools or seek outside help in order to meet reporting requirements for accountability.

“[Reporting] was probably more of an issue with some of the smaller organizations that didn’t have the infrastructure to do reporting at the level that we do. It certainly wasn’t an issue for us.” (CEO, Teaching 2)

“Software has always been a challenge. IT has always been a challenge for small hospitals because we don’t have the support. Right now we are looking at [larger urban area] to supply our IT support. But huge investments, we are struggling to maintain what we have now with the funds that we have.” (CEO, Small Community 2)

The need to invest in infrastructure with limited funds increased the challenge associated with strategic issues such as performance measurement and decision support. Small community hospitals are also more likely to be challenged by frequent changes to accountability requirements because they will need to make bigger adjustments to their organization, compared to the marginal changes early adopters of systems and tools can make.

“Changes always seem magnified in a smaller hospital. System changes, because you don’t have the infrastructure to help you.” (System 1)

Interviews revealed that small community hospitals could feel isolated when dealing with the pressures of externally imposed requirements. Hospitals noted that as accountability requirements have increased over time hospital resources have remained the same, adding to the challenges associated with strategic issues and accountability. Small hospital executives also

reported that their organizations struggle to maintain basic services (e.g., patient care), making additional accountability requirements more challenging.

The changing perception of strategic issues over time can also be explained by hospitals' increased ability to deal with complexity in the system through investments made in technology and human resources.

“Once you build the level of technical ability and have the systems in place to track and submit information, ... you just grow that [the existing system]. To go from zero [no system] to fifty, that's huge. To go from fifty to sixty or seventy is not so bad. You've got the people. You've got the understanding. You've got the technology. You've got agencies that maybe are better facilitating that.” (Manager IT, Large Community 1)

Small hospitals have made investments in technology, have gained experience with the environment of accountability, and utilize the supports available to them. Even so, they continue to be challenged and struggle to meet increasing accountability requirements and maintain clinical service levels with no increase in funding.

6.11. Summary

This chapter provided the findings from interviews with hospital executives and health system leaders. The findings indicate that accountability is being emphasized as a management tool to ensure hospitals are performing according to criteria chosen by multiple agents including their community, their hospital board, the government and their LHIN, and arms-length agencies, specifically HQO. Each of these entities has its own focus, which may or may not be aligned with the others, and the measures each uses can be defined differently. Misaligned agendas and inconsistent definitions of accountability criteria can create confusion over the ultimate goal of accountability. Many hospitals reported that they aligned their organizational priorities (as outlined in their corporate balanced scorecards and strategic plans) with external priorities to ensure external priorities were focused on. The focus on patient satisfaction had increased since ECFAA. Findings indicated that small community hospitals focused on the external priorities of their community more because they considered the priorities of the LHIN and HQO to be more congruent with the priorities and issues of importance in urban areas. This disconnect can create a tension between what the community wants and what the small community hospital is required to do to meet legislated accountability requirements.

Challenges arose when measures chosen were not controllable by the acute care hospital. Other health care organizations, providers, or even patients can affect the outcome of an indicator, but the hospital is ultimately held accountable. Controllability is more of a concern for small community hospitals in general, and for all hospitals as accountability expands into areas of care that are not easily measured, such as system integration. Even with the increased number of measures being used for accountability, interviewees identified gaps in accountability such as system level measures and those that capture the complete patient experience and quality of life were absent.

The instruments being used for accountability may lead to negative unintended results as identified by interviewees, although they claimed that most negative consequences were not occurring in their own organizations. Interview findings revealed that executive P4P, coupled with a salary freeze, made it more challenging for small community hospitals to attract executives. This unintended consequence of executive P4P mandated by ECFAA was not foreseen. Interview findings indicated that performance measurement, financial incentives, and legislation are powerful instruments to direct the focus and activities of acute care hospitals. Performance measurement is necessary for performance improvement. Because of this, hospitals struggling to meet measurement and reporting requirements may need support to increase their capacity in these areas. As hospitals continue to respond to policy instruments and requirements of accountability, their ability to deal with a complex environment increases and they gain experience that can affect their perceptions of strategic issues. The findings indicate that small community hospitals are still challenged by accountability requirements and strategic issues.

Chapter 7: Discussion and Conclusions

7.1. Introduction

This research was undertaken to understand the current approach to accountability in the acute care hospital sector in Ontario, how acute care hospitals respond to it, and how they are affected by changes over time. This final chapter begins with a brief summary of the findings presented in chapters four, five, and six. Following the summary, study findings are discussed according to the three main research questions:

1. *How is accountability of acute care hospitals sought in the province of Ontario and what are the trends over time?*
2. *How has the increased focus on accountability and changes in areas of focus over time been translated into changes in perceptions of strategic priorities by acute care hospitals in the province of Ontario?*
3. *How have hospitals responded to their environment of multiple accountabilities?*

The discussion will follow the literature and framework presented in chapter two. Finally, this chapter presents the limitations of this study and identifies future research directions, ending with the conclusions.

7.2. Summary of findings

This study examined three accountability instruments mandated by legislation (a type of the regulation policy instrument) and introduced between 2004 and 2011 in the acute care hospital sector in Ontario: Ministry-LHIN Performance Agreements (MLPA), Hospital Service Accountability Agreements (H-SAA), and Quality Improvement Plans (QIPs). Findings from the document analysis were presented in chapter four. All three documents utilize performance indicators and targets to hold organizations accountable for specific deliverables, beginning with measures of financial performance and service volumes. The MLPA and H-SAA utilize the policy instrument of expenditure: funding is conditional on organizations committing to accountability requirements such as performance targets and reporting. The performance indicators used in these documents are mandated and decided upon by the government. Conversely, while the QIP itself is mandated and must be reported to Health Quality Ontario (HQQ), its performance indicators are not. Instead, a list of indicators grouped into five categories are recommended by the government for inclusion in each hospital's QIP, with the suggestion that at least one indicator be chosen from each category. Hospitals are given more

freedom in their choice of QIP indicators. Flexibility in indicators used in QIPs makes it challenging for HQO to compare hospitals to each other and over time because not all hospitals will choose the same indicators as other hospitals, or even from year to year. The MLPA, H-SAA, and QIP all make use of the instrument of exhortation by providing hospitals with indicator definitions, targets for performance, and requiring hospitals to release performance data publicly.

Over the years included in this study, the number of performance indicators being used for accountability in the acute care hospital sector increased significantly, although still modest when compared to other jurisdictions such as the UK and the US. As well, the current list of indicators is small in comparison to the list of possible indicators available for use. In the UK, there are “146 quality indicators related to clinical care for ten chronic diseases, the organization of care and the patient experience” (OHQC & JPPC, 2008). One Canadian study proposed ninety-seven indicators for healthcare-associated infections (Blais et al., 2009). Both of these examples are significantly higher than the number of indicators currently being used in H-SAA in Ontario. The increased number of indicators in the acute care sector also expanded what hospitals were held accountable for, moving beyond financial aspects and service volumes to include access to health care services, patient safety, patient experience, and quality. The expanded scope of accountability has also led to increased alignment between cascading accountability requirements, specifically alignment between accountability requirements for LHINs (found in MLPA), and acute care hospitals (found in H-SAA and QIPs). Indicators chosen continued to be measurable, quantifiable, and tied to readily available data. Even with the expanded focus of accountability and increased alignment, the goal of accountability is challenging to achieve in the acute care hospital sector. Hospitals continue to be challenged by their ability to control outcomes for some measures to which they are held to account.

The survey findings presented in chapter five demonstrated that hospitals, in aggregate, articulate most of the strategic issues listed in the survey in their strategic/corporate documents less often in 2011 than they had in 2004. *Patient satisfaction* stood out as the only strategic issue to be articulated by all hospitals responding to the survey. Articulation of *patient satisfaction* aligned with the requirement in the *Excellent Care for All Act, 2010* (ECFAA) that all hospitals survey recipients of health care services from their institution on an annual basis. Strategic issues

continued to be rated as important to hospitals in 2011, but rated as less challenging than they had been in 2004. This result was somewhat unexpected. One might hypothesize that because hospitals had moved to an environment with multiple accountabilities and expanding requirements, strategic issues would be more challenging as hospitals face increasing accountability demands. Instead, the findings from this study suggested that these requirements have led hospitals to revise their procedures, making it easier for them to comply, thus reducing the challenge of strategic issues.

Sub-group analysis of data based on hospital size provided more insight into these findings by revealing that small community hospitals responded differently than their larger counterparts. Small hospitals increased their articulation of strategic issues, whereas larger hospitals decreased their articulation. Small hospitals rated the majority of issues as more important in 2011 than in 2004, and showed a trend towards higher ratings of importance in 2011 when compared to larger hospitals (the opposite to what was found in 2004). In fact, larger hospitals were more likely to lower their ratings of the importance of issues in 2011 compared to 2004. These findings also carried over to the ratings of the challenge of strategic issues, small hospitals rated issues as more challenging in 2011 compared to 2004, whereas larger hospitals rated them as less challenging.

Strategic issues grouped into domains revealed trends that were not as clear at the level of the individual issue. For example, the findings for the domain of *Financial Efficiency* revealed a clearer trend of increased importance and challenge to small community hospitals. The majority of findings aligned between analyses of domain scores and their corresponding individual issues. The only domain score of challenge that did not increase for small community hospitals was *Patient Care Management* (its rating was comparable to the 2004 rating). Interview findings indicated that small hospitals have always had a strong focus on their community and the delivery of good patient care even in an environment of increased legislated accountability requirements, potentially explaining the stable domain score of challenge.

Interviews explained why issues were rated as important but less challenging in 2011 compared to 2004. The years between uses of the survey corresponded with seven years of experience with hospital accountability agreements. Time had provided hospitals with experience to deal with the complex environment of accountability. Larger hospitals were equipped to deal with reporting

requirements and even small hospitals (which were more challenged) were working on streamlining data collection and analysis to make reporting less burdensome. Various governmental agencies and hospital organizations provided support in the form of information and tools for hospitals to address strategic issues. These new tools were thought to decrease the challenge associated with strategic issues because hospitals are now better equipped. As well, accountability requirements are more prescriptive, requiring less strategy on the part of hospitals and reducing the challenge associated with strategic issues. Even so, small community hospitals were still challenged by issues because compared to larger hospitals they have had to make more organizational adjustments and/or investments in order to meet accountability and reporting requirements. The main challenge faced by small community hospitals in this environment of performance measurement and standardized requirements was the reporting requirements, not performance measurement.

Interviews also revealed hospital executives' perceptions of the environment of accountability in Ontario's acute care hospital sector and its effect on hospitals. In the face of multiple accountabilities, small community hospitals still considered accountability to their community as their first priority (aligning with their consistent rating of the importance of the domain of *Patient Care Management* in 2004 and 2011 survey findings). Interviewees from all three types of hospitals thought that performance measures were useful now that more indicator definitions are standardized. However, frequent changes to the indicators used for accountability and corresponding reporting requirements continued to burden small community hospitals because they lacked infrastructure and needed support to invest in necessary technologies. Executives were more conscious of data quality and the need for accurate and sophisticated analysis, all requiring adequate infrastructure.

Interviewees also indicated increased alignment between corporate priorities and externally mandated accountability requirements. Tension remained because hospitals felt measures were chosen based on data availability and ease of measurement, not because they were most important. Interestingly, the increased focus on quality improvement through legislation was welcomed because hospital executives now had a necessary lever to get their whole organization involved; this was more challenging before ECFAA. Even so, some other performance measures remained challenging for hospitals because they lacked the necessary levers (controllability),

especially in areas requiring coordination with community-based providers (e.g., readmission rates). As well, interviewees identified gaps in accountability for the full cycle of patient care and broader aspects of care, including integration with other health care providers.

The focus on performance measurement and public reporting for accountability, and financial incentives can lead to negative unintended consequences. Interviewees provided examples, but indicated that unintended consequences occurred in other hospitals, not their own, except for the unintended consequence of “*crowding out*” in one large community hospital. Conditions under which unintended consequences were likely to occur were also provided by interviewees, indicating they were aware of and concerned about the potential of these negative consequences occurring.

Many findings in this study confirmed what was found in the literature. Policy instruments such as regulation (e.g., legislation), information provision (e.g., public reporting), and financial incentives (e.g., wait-time incentive funding) influenced organizational responses and perceptions of strategic issues differently. As expected, legislation and financial incentives were the most coercive instruments. Hospitals moved towards increased homogeneity in responses to their environment of increased regulations and requirements. Uncertainty, the focus on measurability, lack of controllability, the burden of standardized reporting, potential unintended consequences, and trade-offs between innovations and meeting accountability requirements were all challenges faced by acute care hospitals. Even so, this study demonstrated that as hospitals gain experience, and adapt to changes in their environment and to accountability requirements, they become less challenged by fundamental policy questions (strategic issues).

These summarized findings are synthesized in sections 7.3 to 7.5 according to the three main research questions and framework guiding this study.

7.3. How accountability is sought and trends over time

As defined in chapter two, accountability requires that those being held accountable know to whom they are accountable, for what they are accountable, and how they are held accountable, sometimes including a consequence for not meeting requirements. This study examined the accountability relationship web (Johnston & Romzek, 1999) in Ontario’s acute care hospital sector resulting from the introduction of LHINs and an increased focus on accountability. It

identified who is held accountable to whom, what they are held accountable for, and how they are held accountable. Those involved in accountability originally consisted of the government of Ontario through the Ministry of Health and Long-Term Care (MOHLTC), acute care hospitals, and their communities. The introduction of LHINs in 2006 and the expansion of HQO into acute care in 2010 increased the web of accountability relationships, inserting LHINs and HQO between hospitals and the MOHLTC. The MOHLTC is still responsible for providing system-level direction and chooses the policy instruments used to hold hospitals accountable, such as regulation (in the form of legislation), expenditure (in the form of financial incentives), and exhortation/information provision (in the form of publicly available accountability information).

The main themes identified from the trends are the uniform and systematic requirements of accountability; alignment of accountability requirements; use of accountability data and differential burden of reporting; continued focus on measurability, the issue of controllability, unintended consequences, and gaps in accountability; and ease of access to accountability data. Each will be discussed below.

7.3.1. Uniform requirements and a legal accountability relationship

Many of the measures used in the H-SAA and QIP documents are not new to acute care hospitals. They were chosen because they were measurable and utilized data that was already being collected, but were not always related to areas identified as important by hospitals (e.g., patient quality of life) or to the health system (e.g., integration). Even so, a benefit of the current environment of accountability was that the definitions of measures being used were standardized so that all hospitals in the province were collecting and reporting the same data. Mandating and clarifying the definitions of indicators used for accountability purposes in Ontario's acute care hospital sector meant that measurement was no longer being done in isolation or sporadically. Instead, measurement was carried out by all hospitals in the province at scheduled intervals, using the same definitions, with the defined purpose of increasing accountability and quality. The mandated performance indicators in H-SAA established a more systematic and prescriptive approach to accountability; hospitals knew what was required and that it was uniform across the sector, even though indicators may change and/or increase in number.

Performance improvement cannot occur in the absence of measurement and target setting, making them key components of Ontario's system of accountability for its acute care hospitals.

As well, standardized external expectations made it possible for independent hospitals to be compared to each other because all were held to a set of core indicators that were clearly defined. Use of standardized definitions increases transparency because hospitals and their LHINs could use the information to make comparisons, identify and share best practice information, and potentially improve performance. With standardized definitions, performance information is also potentially easier for the public to use.

Even though the indicators to be used in QIPs are recommended, not mandated, the QIP itself is mandated. The acute care sector has moved towards a stronger and more systematic focus on quality improvement by requiring all hospitals to draft an annual QIP as well as specifying definitions for its recommended indicators. Interviews revealed that the QIP itself was important to hospital executives and the hospital. They acknowledged the value of being continually aware of quality improvement and that legislation (ECFAA) provided executives with a lever to get their whole organization focused on quality improvement. With the whole organization involved, quality is more likely to increase. This finding aligns with what Pomey et al. (2010) found for hospitals going through the process of accreditation. Unlike the H-SAA, the absence of mandated indicators in the QIP means that hospitals are not required to choose the same indicators, making it difficult for them to make comparisons with each other. Even so, hospitals can still compare their own results over time, allowing organization level improvements to occur. Thus, a gap in Ontario's system of accountability for quality improvement was revealed because hospitals were not mandated to report on a core set of indicators.¹³

The H-SAA and MLPA indicators are more in-line with “measurement for judgment,” which requires standardized definitions, accurate risk adjustment, and auditing (Berwick, 1996). Contrasted to this, the use of recommended indicators in the QIP, giving hospitals more flexibility in their choice of indicators and targets, is more in-line with “measurement for improvement” (Berwick, 1996). This latter type of measurement can take context and variations in hospitals into account. The use of required and recommended indicators suggests that

¹³ A similar problem occurred when the Canadian Institute for Healthcare Information (CIHI) published pan-Canadian results of its Canadian Hospital Reporting Project (CHRP). Hospital comparisons between provinces were challenging due to data quality issues because hospitals did not use measures with the same definition and/or hospitals treated patients with different levels of complexity. This resulted in some hospitals appearing to be poor performers when the patients they cared for presented with more complex cases than other hospitals that appeared to be higher performing hospitals.

Ontario's provincial government (MOHLTC) recognizes the importance of encouraging hospitals to continue to focus on improvement efforts within their organizations, not just judging whether accountability criteria are met. The QIP is more an improvement plan than an accountability agreement (although hospital executives are held accountable for meeting indicator targets in their hospital's QIP).

New legal accountability relationships were created when the H-SAAs and QIPs were introduced. These relationships are identified by Johnston and Romzek (1999) as being characterized by organizations with low autonomy that face external expectations in the form of contracts and that also face audits (measurement for judgment). Compared to hospitals in some Canadian provinces that dismantled some or all hospital boards, Ontario's hospitals are more autonomous because they retained their hospital corporate boards after the introduction of LHINs. Even so, Ontario's hospitals face external oversight from their LHIN and HQO, but findings from this study indicate this oversight may differ depending on the LHIN and/or the size of the hospital. This means that measurement for judgment purposes may not be occurring (Berwick, 1996). Ontario hospitals can negotiate performance targets with their LHIN, but this study's findings indicate that smaller hospitals are not as successful at negotiating more attainable performance targets, forcing them to sign their H-SAA even when targets set by the LHIN are unrealistic. HQO does not negotiate targets with hospitals; hospitals follow the QIP guidance documents and set their own. HQO is mainly involved with collecting quality data and reporting it to the MOHLTC and the public. As well, feedback from the LHIN or HQO does not always occur, suggesting a greater focus on ensuring feedback is given to hospitals (see section 7.3.3 for more discussion on feedback).

7.3.2. Alignment between levels of accountability requirements

Alignment between different levels of accountability has improved as the number of indicators used for accountability purposes has increased. The legal accountability relationship and increased alignment between the MLPA and H-SAA provides LHINs with a lever to meet their own performance targets as they hold acute care hospitals accountable to their H-SAA targets for the same measures. What gets measured focuses the activities and behaviours of organizations (Pfeffer & Salancik, 1978; Veillard et al., 2010). Thus, the indicators used for accountability purposes may suggest the strategic direction of the health care system. This does not provide an explicit strategic plan as legislated by section 14 of the *Local Health System Integration Act*,

2006. This means that continued measurement and alignment in areas such as wait times for priority services is important if the federal wait times reduction funding (an expenditure policy instrument) is discontinued after 2014 (Health Canada, 2003). The absence of a provincial health system strategic plan combined with the removal of financial incentives tied to wait time reduction efforts means that continued performance measurement for accountability tied to funding allocations might help maintain the focus on these specific wait times and any reductions achieved. Without measurement, the focus on these areas and any improvements may not continue.

Some of the recommended indicators for the QIP also align with those mandated in the MLPA. Alignment between quality indicators used in different accountability instruments takes time to achieve (study findings showed a lag of up to five years), if it occurred at all. The fact that alignment between indicators used for different levels of accountability has increased indicates a greater awareness that accountability for indicators such as ALC days, hospital readmissions, and wait times were system-wide issues. Documents and interviews indicated that these three indicators encompassed care provided in different sectors of the health care system. As well, cascading indicators for quality improvement show a greater awareness that quality needs to be focused on throughout the system, not just at the level of the organization.

Many indicators recommended for the QIP were already considered important by hospitals and were already being used by many (e.g., indicators for infection prevention and hospital acquired infections), ensuring alignment across the acute care sector. Other QIP indicators were not considered relevant to all hospitals (e.g., central-line infection rate). The use of recommended indicators instead of a set of mandatory indicators is both a strength and a weakness. Allowing hospitals to choose indicators that are applicable, based on services provided, and that align with their internal priorities is a strength. The organization can balance between what it is interested in and capable of measuring, with the measurement needs of the system. Flexibility is also a weakness in that it reduces the potential for comparability between hospitals if they do not choose the same indicators. This may reduce the ability of the system to monitor the acute care hospital sector and may make it more challenging to carry out measurement for judgment or improvement at the system level.

Alignment between organizational priorities and areas focused on in accountability documents was also reported during interviews. The move towards aligning organizational priorities with areas of performance measurement and organizational responses (even unintended) suggests that the policy instruments of legislation and financial incentives were the most influential for shifting strategic priorities and achieving accountability. Legislation was beneficial because it gave hospital leaders a lever to increase engagement in accountability and quality improvement throughout their organization. Financial incentives were a strong driver of hospital response to mandated requirements because hospitals are dependent on public funding, now tied to H-SAA requirements. This finding corresponds to the literature on policy instruments (Doern & Phidd, 1992; Howlett et al., 2009; Preker et al., 2007) and resource dependency (Pfeffer & Salancik, 1978).

7.3.3. External use of required hospital accountability data

The increased focus on performance measurement for accountability has increased the demands of data collection, analysis, and reporting for acute care hospitals. In a report published by the OHQC and JPPC (2008), hospitals reported that there were too many indicators and questioned whether the information collected was being used. The findings from this study showed that uncertainty around the use of externally reported data remains for some organizations. Interviews revealed that not all LHINs provided feedback to their hospitals; hospitals were left wondering whether the data collected and reported are being used, pointing to a gap in communication. The absence of feedback is troubling on two levels. First, lack of feedback from the LHIN can be frustrating, especially for small community hospitals, which are burdened by the increased reporting requirements. Second, feedback is an important component of accountability, learning, and performance improvement (Brinkerhoff, 2004). Without feedback, organizations are more challenged to learn from the activities they carry out for accountability purposes and may not be aware of the larger goals of the system. Feedback is also important for the policy instruments of performance measurement and reporting to achieve the ultimate goal of performance improvement in areas of interest.

7.3.4. Measurability, controllability, unintended consequences, and gaps

The expansion of measures used for accountability into areas of performance beyond financial performance and service volumes suggests an expansion of the health system's focus. Even so, the scope of indicators is limited by the continued emphasis on using indicators that can be

measured with existing data, rather than investing in the development of potentially more meaningful indicators. Measurability and quantifiable measures are emphasized because it is easier to ensure high quality processes or outcomes when they can be measured easily and accurately (Forster & van Walraven, 2012; Johnston & Romzek, 1999; Preker et al., 2000). This tunnel vision (Smith, 1995) has led to the unintended consequence of neglecting indicators that capture broader aspects of patient outcomes (quality of life), patient-centred care, and system integration. Crowding out is another unintended consequence that resulted when hospitals focused on procedures with incentive funding, causing them to neglect other procedures in similar areas of care. Although crowding out was anticipated, a concern expressed in this study, and even admitted to by one hospital in this study, the Canadian Institute for Health Information (CIHI) does not think it occurs (CIHI, 2012a).

Some current indicators hold acute care hospitals accountable for aspects of the health system they do not have sole control over (e.g., ALC days and readmissions). The lack of controllability indicates greater integration and alignment between providers (acute and community) is needed to affect outcomes to improve performance. As well, measures should take into account the role providers other than acute care hospitals have on outcomes.

Hospital executives also wanted to know the rationale behind the choice of indicators (other than data availability and measurability), suggesting that the link between indicators and health system strategy is not always clear to organizations even though an overarching strategy has been recognized as an important element of a health care system (Brown et al., 2006a). Understanding the rationale for the use of indicators is important, especially in cases when hospitals have limited control over all aspects that affect the outcome of an indicator, but are still held accountable. Even though the MOHLTC is responsible for establishing the strategic direction of Ontario's health care system and ensuring strategic expectations are fulfilled (MOHLTC, 2013), this strategy is not communicated directly to organizations. Instead, the MOHLTC's strategy is suggested by what health care organizations are held to account. This means that the MOHLTC's ultimate goal or strategic direction is not always clearly known or understood by organizations within the system. An unclear system direction and/or goals make it more difficult for organizations to plan, adapt, or align their priorities with those of the health system.

The increased number of indicators has addressed some gaps in accountability identified in 2008 by the Ontario Health Quality Council (OHQC), now HQO, and the Joint Policy and Planning Committee (JPPC) (2008). Two examples are that the QIP recommends a measure for medication reconciliation and alignment between the MLPA and the H-SAA has increased. However, gaps in system measures for accountability previously identified still remain. The OHQC and JPPC (2008) identified a gap in that LHIN-level measures focused on services provided in acute care hospitals. This gap continues at the time of writing. As well, hospital executives reported in this study that only narrow aspects of quality are captured even with the increased focus on quality (e.g., QIPs). Government documents suggest that this gap continues because of the challenge of collecting data for broader aspects of quality or data from different patient groups. For example, data on new skin ulcers continue to be reported for only complex continuing care patients, meaning that not all patients with new ulcers are included in this measure (MOHLTC, 2012b; JPPC, 2008). Finally, system integration indicators are limited in their scope in all accountability documents discussed in this study (MLPA, H-SAA, and QIP).

7.3.5. Ease of access to accountability data

This study showed a trend towards increased use of the exhortation/information policy instrument in the form of dissemination of accountability information through public posting of MLPA, H-SAA, and QIPs. Standardized definitions for accountability indicators and making the information publicly available are both intended to increase the transparency and consistency of accountability to the public by ensuring that uniform information is available from all acute care hospitals and LHINs. Information is now easier for the public to access, even though the literature suggests that the public is not likely to do so, or that they may not use information to make decisions about their health care (Bardach et al., 2011; Schneider & Epstein, 1998). Hospital executives in this study felt that information provision could be improved by creating a central data repository of hospital data for externally demanded accountability information. A central database would be accessible by hospitals, the government, LHINs, and other arms-length agencies that required information. This would be useful because acute care hospitals currently desiring to compare themselves to other hospitals based on a QIP indicator need to refer to each hospital's website to gather QIP data, and there is no guarantee that all hospitals used the same QIP indicators.

An extension to a central data repository is the creation of a central website for those external to health care organizations and the government, but interested in accountability information (e.g., the public, researchers, media, etc.). This website would be similar to CIHI's hospital report website, but specific to externally required accountability data of Ontario's health care organizations (including acute care hospitals). Data would be easier to access and use, individual hospital and LHIN websites would not need to be searched to obtain comparative information. As well, there is currently no requirement for the government, LHINs, and/or hospitals to make archived accountability documents available to other hospitals, LHINs, or the public. Archived data is challenging, if not impossible, to access for research and/or information purposes to assess the extent of improvement (or lack of) resulting from the increased focus on accountability and specific indicators.

Greater alignment between the various reporting requirements for acute care hospitals would reduce the burden of reporting requirements. This study only examined the reporting requirements for H-SAA and QIP, but hospitals are also required to report to other external agencies within the province of Ontario and nationally. The central repository of data could also be used as a central location for hospitals to upload data required by all these external agencies. Using one location for all accountability data would streamline the reporting process by reducing duplication, force alignment of indicators external agencies are interested in, and potentially reduce the burden of reporting currently faced by small acute care hospitals. External agencies could use an algorithm specific to their focus and generate reports as required. The feasibility of this central repository for collecting data and generating reports at a provincial level would need to be addressed. The governance of acute care hospitals in Ontario (each has its own board of directors) may make a central repository challenging to implement because some hospitals may not want their data collected and maintained in this central repository.

These five trends in accountability in Ontario's acute care hospital sector during the years covered by this study indicate that the environment continues to evolve. This environment influences the perception of strategic issues by hospitals, the topic of the following section.

7.4. Perceptions of strategic priorities and accountability

The use of policy instruments such as regulation, performance measurement, and financial incentives to achieve accountability can have an effect on organizational perceptions of strategic

priorities. In chapter two, strategic issues were defined as “fundamental policy questions or critical challenges affecting the organization’s mandates, mission, and values, product or service level and mix, clients, users or payers, costs, financing, organization, or management” (Bryson, 2011, p.55). This study showed that strategic issues remained important as accountability is focused on and expanded; that standardized reporting requirements are challenging to smaller hospitals; and that hospitals moved towards consistency in organizational priorities. Each of these themes will be discussed below.

7.4.1. Strategic issues remain important

The importance of strategic issues has remained mostly constant even as the focus on accountability for financial outcomes, service volumes, patient experience, and quality of care has increased. Stable ratings of importance are not surprising given that many mandated accountability measures aligned with areas of performance that hospitals were already collecting data for and reporting on. Choosing measures that were already being used confirmed their continued importance to the health care system and made it easier for hospitals to collect data and report externally for accountability purposes. Many hospitals could use (with some adaptation) the systems they already had in place, reducing the perceived challenge of strategic issues compared to 2004, and ameliorating pressures arising from multilayered policy oversight (Luke & Walston, 2003).

7.4.2. Standardized reporting a challenge for small community hospitals

This study revealed that performance measurement was not considered challenging for small hospitals; instead, standardized reporting requirements for accountability were considered challenging. This finding aligned with the literature explaining that not all organizations have the same capabilities or infrastructure to meet reporting requirements (Lemieux-Charles et al., 2003). Small hospitals in this study did not have sufficient existing infrastructure for data analysis and reporting compared to larger hospitals, which had needed infrastructure in place before reporting requirements for accountability were legislated. Small hospitals also had a more difficult time accessing additional resources (technical, time, and/or human) to devote to increased demands for data collection, analysis, and reporting. Indeed, the low response rate of small community hospitals to the Strategic Priorities Survey and lack of resources compared to larger hospitals are symptoms of the challenges that smaller hospitals face.

The literature on resource dependency (Pfeffer & Salancik, 1978) provides an explanation for why small hospitals are burdened by standardized reporting requirements. Even though all hospitals in Ontario are dependent upon the government for most of their funding, small community hospitals face other constraints as well. Small hospitals are often located in rural settings and many are isolated, far from an urban centre. Isolation makes it more difficult for these hospitals to attract and retain administrative and/or clinical staff, or even link with other health care facilities for infrastructure support. The extent of resource dependence faced by small community hospitals makes reporting requirements more challenging because they must meet these requirements, with minimal infrastructure, in order to obtain government funding to provide core health care services. Small hospitals cannot choose to ignore requirements simply because they do not have the resources to meet them. Resource dependence makes small hospitals particularly vulnerable to government imposed regulations or requirements (Cook et al., 1983), possibly leading to their increased ratings of challenge of strategic issues.

The dependence of hospitals on public funding also led to frustration because hospitals had limited controllability over some indicators chosen for accountability. As well, some indicators chosen by the MOHLTC to hold hospitals accountable encompassed issues beyond acute care (e.g., hospitals are held accountable for ALC days, but the availability of services in the community impact this indicator). The dependence of hospitals on public funding constrained their options to deal with this indicator. In order to obtain necessary funding some hospitals had to agree to performance targets they did not think they could achieve because of lack of controllability (i.e., indicators encompassing aspects of patient care and health outcomes that were beyond acute care). Hospitals had to meet the demands of the source of their necessary resource, making them vulnerable to externally imposed regulations or requirements (Cook et al., 1983).

Later adoption of the systems and tools needed for accountability and reporting created a steeper learning curve and greater challenges for small community hospitals. Reporting requirements frequently changed (indicators and/or definitions) or increased (number of indicators used), thus small community hospitals had to make frequent adjustments. Continual adaptation leaves small hospitals with fewer resources to devote to innovation and activities leading to improvement because they may lack the necessary infrastructure to keep pace with changes. Even so, measures

need to be added and existing ones need to be updated to ensure important dimensions of acute care hospital services are captured accurately and as completely as possible. Potential reductions in innovation and the need for accurately reported information requires that a balance be found between introducing new indicators and recognizing that hospitals may be challenged by these changes.

Even so, hospital executives recognize that measurement and reporting is important, and accountability requirements provided a focus for their organizations. Tension between external and internal priorities could be reduced by buffers such as increased communication of health system strategy and performance expectations. Communication of these pieces of information can lead hospitals towards purposeful alignment of internal and external priorities. A priori managerial and technical resources could also reduce tensions because hospitals would have the tools to adapt to their changing environment.

7.4.3. Increased consistency of organizational priorities

Institutional theory predicts that as the environment becomes more standardized in its requirements and expectations, hospitals will become more standardized. As well, organizations that are highly dependent upon a single resource will become more homogenous (DiMaggio & Powell, 1983). This study demonstrated a move towards homogenization in perceptions and priorities in the sector-wide pattern of articulation of strategic issues (and domains). Differences between hospitals in terms of articulation of strategic issues and domains showed movement towards a difference of zero, or consistency between hospital types in 2011, compared to the larger, more skewed differences in 2004 (larger hospitals more likely to articulate strategic issues). Legislation had a strong influence on this shift as suggested by the increased articulation of the strategic issue of *patient satisfaction*. Hospitals participating in this study all articulated *patient satisfaction* in 2011, as opposed to 2004 when only teaching hospitals reported 100 percent articulation.

Trends towards homogenization in ratings of importance and challenge of strategic priorities were also found. The changes in ratings from small hospitals contrasted with those of larger hospitals, leading all hospitals to similar ratings of strategic issues. Legislation mandating specific accountability indicators and ECFAA's focus on patient satisfaction has influenced the prioritization of strategic issues by hospitals in Ontario. In this study, legislation appears to have

led to coercive isomorphism (DiMaggio & Powell, 1983); hospitals have purposely aligned their own organizational priorities to those of the health care system and mandated requirements. Alignment between organizational and system priorities explains why hospitals are more standardized in their articulation of strategic issues and their ratings of importance and challenge.

7.5. Organizational response to environment of accountability

Acute care hospitals can utilize strategy to deal with accountability requirements and the policy instruments used for accountability. Strategy is defined in chapter two as “the plans and activities developed by an organization in pursuit of its goals and objectives, particularly in regard to positioning itself to meet external environmental demands...” (Shortell et al., 1985, p.220). The external environmental demands that can affect strategy in this study are accountability requirements to the MOHLTC, LHIN, HQO, and the public. These multiple accountabilities and frequent changes to requirements can lead to uncertainty in the hospital’s environment, the hospital’s ability to adapt, and require hospitals to make trade-offs. These three themes are discussed below.

7.5.1. Effect of uncertainty on alignment

As outlined above, the scope of accountability in Ontario’s acute care hospital sector has expanded since hospital accountability agreements were introduced in 2005. Frequent changes to the indicators used, introduction of new legislation, and changing reporting requirements have created an uncertain environment. The literature indicates that as uncertainty increases, alignment with external priorities is expected to decrease (Shortell et al., 1985). This study showed the opposite, alignment between organizational and external priorities increased or remained constant. Even with frequent changes and uncertainty in funding allotments, all hospitals, regardless of size, made efforts to align organizational priorities with external accountability requirements (indicating system priorities). Small community hospitals reported being more focused on strategic issues compared to before accountability legislation, aligning with their higher ratings of importance and challenge of strategic issues.

Small community hospitals also indicated that they maintained a strong focus on accountability to their community even with increasing accountability requirements to other external bodies. A strong focus on the community may create a tension between what the hospital is legally required to focus on and what they think their community expects and/or needs. This tension and

the fact that many small hospitals do not have the infrastructure of larger hospitals means that some small hospitals struggle to maintain basic services while meeting multiple and expanding accountability requirements. This can potentially compromise the success of accountability. A one-size-fits-all approach may not be equitable for all hospitals; smaller hospitals are likely to need more support in capacity development and/or investments in necessary infrastructure (e.g., decision support, human resources).

Increased alignment even in the face of uncertainty is likely due to hospitals' lengthy experience with an environment of regulation in Ontario. Hospitals are familiar with meeting requirements in order to obtain funding, leading them to make adjustments to maintain alignment, regardless of the frequency of changes and any ensuing difficulty. Efforts at alignment and adjustments to priorities are ways organizations can adapt to their environment.

7.5.2. Adaptation to the environment of accountability

Adaptation is a strategy available to hospitals facing regulation (Cook et al., 1983). This study's findings indicated that hospitals engaged in adaptation as they continued to meet changing accountability and reporting requirements. Examples of adaptation responses by hospitals were investments in infrastructure (human resources and/or decision analysis systems); conforming, aligning, and cooperating with external expectations; and even choosing their own goals and objectives to be compatible with external requirements.

Hospitals made investments in infrastructure to improve data quality, collection, and analysis. These improvements reduce the challenge of adapting to future changes in reporting requirements and the environment of accountability less challenging. Hospitals adjusted their priorities to align with external expectations, especially requirements tied to funding and accountability legislation. This result was expected based on the literature on policy tools and their coerciveness (Doern & Phidd, 1992). Even though regulations reduced the response choice set of hospitals, they considered the constraints from requirements to be beneficial because hospitals were provided with a clearer focus (even if it periodically changed).

7.5.3. Trade-offs due to accountability requirements

Increased measurement and reporting requirements for accountability were a concern because trade-offs between meeting present requirements and implementing innovations for the future

may be required. Many innovations in health care occur, but not always on a system-wide basis; innovations are often implemented by single organizations or within geographical regions (Rachlis, 2005). More localized innovations mean that each organization needs to engage in more planning and budgeting in order to implement its own innovations. Hospitals need to take into account the trade-off between the cost of the innovation and meeting externally mandated requirements, all while staying within their annual funding allotments.

Planning and innovation are even more challenging when accountability requirements change frequently and/or funding levels are only known for the current fiscal year. In this environment, what is appropriate in the current planning cycle may be obsolete or unnecessary in the future, or even not possible if funding is reduced and/or new requirements increased (Shortell et al., 1985). As well, findings from this study suggested that organizations could use the challenges created by uncertainty to deflect responsibility for not meeting accountability requirements. Hospitals may be permitted to use the reason of “factors beyond their control” to explain why they do not meet accountability performance targets (Government of Ontario, 2008). Uncertainty in funding and reporting requirements contribute to the factors over which the organization has limited or no control. Organizations may depend on this clause rather than engage in innovation and improvement efforts.

7.6. Contribution of study

This study contributes to the field of health services research through its focus on the organization, specifically the acute care hospital, and its response to an environment of multiple accountabilities. It provided empirical findings of the adaptation response of organizations to the policy instruments of regulation, information/exhortation, and financial incentives. Findings from this study contribute to the literature on the differential effect of regulations and requirements on organizations depending on the organization’s size. This study also examined organizational responses to multiple accountabilities and multiple areas for which health care organizations can be held to account. Other studies recognize the challenges associated with multiple accountabilities, but often do not examine the effects of multiple accountabilities on organizations. Examining multiple areas for which health care organizations can be held to account contributes in that other studies examining accountability in health care or other sectors of the economy often focus on one type of accountability (e.g., financial accountability by audits

or performance accountability by measurement), or organization level accountabilities (e.g., clinical providers within a hospital or a hospital board).

The mixed methods used in this study examined organizational level processes both within and across organizations, an area of health services that is relatively understudied. Analysis of both quantitative and qualitative data provided more in-depth findings of acute care hospital responses to and perceptions of an environment of multiple accountabilities, and the policy tools used to achieve accountability.

7.7. Limitations and future research

One limitation is that this study focused on one province in Canada. Each province may approach accountability differently, limiting the generalizability of this study's findings. The 45.7 percent response rate for the survey is considered high for an organizational survey; however, the sample size consisted of only fifty-three hospitals, forty-four of which responded in both 2004 and 2011. As well, only twelve (26.7 percent) small community hospitals responded to the survey in 2011, of which six also responded in 2004. Teaching hospitals had a 71.4 percent response rate, but because of the small number of them in the province, this was only ten hospitals, of which nine also responded in 2004. These small sample sizes limit the power of statistical analyses and conclusions derived from these findings.

Another potential limitation is response shift bias, if it occurred. As noted in section 3.5.2, response shift bias can be found in self-report data (Golembiewski et al., 1976; Howard & Dailey, 1979; Lau et al., 2012; Terborg et al., 1980). The survey data was analyzed to compare hospitals that responded in both survey years to those that responded in only 2004 or only 2011. The analysis indicated that the majority of results were the same regardless of whether the hospital responded in both survey years or only one (see Appendix F). Bias may occur because the individuals at the hospitals who answered the survey in 2011 were generally not the same as in 2004. Only six hospitals had the same CEO in 2011 as in 2004. The survey was addressed to the hospital CEO, but each had the option to ask someone else at the organization to fill out the survey. Even though the hospital remained the same and the respondent was answering questions related to the hospital, a change in respondent from 2004 could lead to bias even though efforts were made to ensure content and construct validity of the survey.

Interviews were undertaken to provide a case study of teaching, large community, and small community hospitals in Ontario by gathering information from individuals at different levels of management in these hospitals. Interviews were not intended to encompass all acute care hospitals in Ontario, but to help explain the quantitative findings of the strategic priorities survey. Even so, the small number of interviews (thirteen) and the absence of interviews with individuals at the MOHLTC and LHINs are limitations (although two interviews were with health system leaders). This research design means that study findings may not be generalizable across all acute care hospitals in Ontario and are likely not generalizable to acute care hospitals outside of Ontario.

Acute care hospitals in Ontario are held accountable by other agencies such as Accreditation Canada, Canadian Institute for Health Information (CIHI), Health Quality Council of Canada (HQCC), and Cancer Care Ontario (CCO). They are also held accountable by other pieces of legislation such as the *Regulated Health Professions Act*, 1991; the *Public Hospitals Act*, 1990; and the *Freedom of Information and Protection of Privacy Act*, 1990. Inclusion of these other accountability requirements, associated performance measures, and pieces of legislation in future research will contribute to the findings of the current study. Including the perspectives of regional and health system leaders (members of the LHIN boards and public employees, up to and including the Deputy Minister at the MOHLTC) would provide a deeper understanding of the goals of the health system and regions. These interviews would also provide greater insight into how organizations are taken into account when deciding upon areas of accountability and the rationale for choice of indicators beyond what was found in this study. Cross-provincial comparisons of accountability frameworks and the strategic priorities of acute care hospitals is another area of study for the future. These comparisons would provide information about accountability best practices, depending on health system organization and governance.

Future research can also examine how generalizable the findings of this study are across all acute care hospitals in the province of Ontario. How do the strategies and responses of hospitals differ when accountability requirements are mandated (H-SAA) compared to when they are more flexible (QIPs)? How is performance of acute care hospitals affected by the increased focus on accountability and performance measurement? What is the rationale for mandating performance measures (and some targets) for H-SAA while also giving hospitals the flexibility to choose

measures and targets used in their QIPs, and why has the MOHLTC seemingly approached accountability in these two different ways? What are the perceived constraints faced by, and buffers available to, acute care hospitals when dealing with multiple accountabilities? How can the gaps in accountability be addressed without over burdening health care organizations? How can health care providers be held accountable for important areas of health care that are difficult to measure? Finally, how can accountability expand to include patient care from within the hospital to the community? These questions indicate the many areas of future research that can be pursued.

7.8. Policy Recommendations

This study showed that accountability requirements continue to expand, increasing the burden on hospitals, especially small community hospitals. This leads to the first recommendation, that greater alignment between those seeking accountability (MOHLTC, LHIN, and HQO) would make the process of accountability less burdensome for the organization. As well, a more segmented approach to accountability should be used because the current one-size fits all approach is burdensome to small community hospitals because of their limited infrastructure. Small hospitals may require greater support in order to meet accountability requirements.

The second policy recommendation is related to data accessibility and reporting requirements. The province and/or each LHIN should examine the possibility of creating a central data repository for hospitals to upload data for accountability purposes (obviating the need to generate multiple reports), and to retrieve data for comparative or improvement purposes. As well, current legislation does not specify whether archived accountability data should be available. These reports have already been created, but are not always publicly accessible, reducing transparency and accountability.

Acute care hospitals in this study indicated that the accountability requirements provided them with direction and a focus. This highlights the benefit that can arise from the development of an overall guiding document or strategic plan for the health care system. As well, alignment of accountability requirements and between organizational and external priorities is more likely to increase with the clear communication of a health system strategy. Section 14 of the *Local Health System Integration Act, 2006* states that a provincial strategic plan for the health system must be developed and made publicly available. At the time of writing, the province does not

appear to have a strategic plan for the health care system or it has not made it publicly available. This leads to the third policy recommendation, that a clear strategy for the health system be developed and made easily accessible to the public and health service providers. This will increase the transparency of system goals, make it easier for health care organizations to align their priorities with health system priorities, provide health care organizations with a focus, and meet legislated requirements.

7.9. Conclusions

The environment of Ontario's acute care hospitals, including the policy instruments used for accountability, have led hospitals' to align their organizational priorities with areas of accountability. Changes to accountability requirements and the increased focus on performance measurement for accountability had a differential effect on Ontario's acute care hospitals, depending on their size, with small community hospitals being the most burdened. Even so, findings suggest that hospitals are moving towards standardized priorities and perceptions of priorities as indicated by smaller differences between hospital types in the articulation and ratings of strategic issues.

Health system priorities appear to be communicated through accountability requirements and the use of mandated indicators. This has facilitated standardization of organizational priorities by providing hospitals with a focus, specifically the areas of performance measurement. Providing organizations within the health care system with a uniform focus through accountability documents may increase the likelihood that the goals of accountability (e.g., increased access and quality improvement) are achieved. Expanding accountability into areas not easily measured, or encompassing broader aspects of patient care and system integration may lead to further alignment between organizations and between organizations and health system priorities as organizations continue to adapt, even when it is difficult.

Controllability of indicators for which acute care hospitals are held to account will continue to be challenging as patient care becomes more integrated with community-based providers. As well, uncertainty continues as frequent changes occur in how and for what hospitals are held accountable. Uncertainty is somewhat mitigated by the flexibility of the QIP. Using recommended rather than mandated indicators may also be an attempt to balance local organizational needs with the desired focus of the broader health care system. Giving hospitals

the ability to choose from a menu of recommended indicators that align with the focus of the health system allows hospitals to address system priorities while keeping organizational priorities at the forefront. Flexibility in the choice of indicators mitigates the tension that may occur and trade-offs that may be required when organizational priorities are forced to align with those of the system, possibly reducing the challenge of controllability. Increasing controllability can reduce the incentive providers have to respond in ways that may lead to unintended consequences. As well, flexibility may shift the focus from measurement for judgment to measurement for improvement.

The current environment of accountability is perceived as uncoordinated and challenging. The use of accountability as a management tool and the focus on performance measures has led to both intended and unintended responses by hospitals. Even so, the focus on accountability is considered beneficial because its requirements provide organizations with a focus in the absence of an overall health system strategy. As well, performance measurement, reporting, and feedback is essential for improvement to occur, but added supports for capacity building and infrastructure may be necessary for some organizations, particularly small community hospitals. This added support will help organizations respond as intended, and meet reporting requirements without having to make trade-offs that could negatively affect the ability of the health system to achieve the goals of accountability.

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Appendix A: Creation of 2011 survey from 2004 survey

Changes made to the survey maintained comparability of 2011 data to 2004 data.

The following changes to the 2004 survey were made when formatting the 2011 survey:

- “Major healthcare themes” corresponding to the table found in the 2005 paper by Brown et al. were used to group duplicate/repetitive strategic issues. These themes were different from the original 2004 version of the survey, but did not affect the issues presented to respondents.
- Issues were retained even if they were not in the “major healthcare themes” table in order to ensure comparability of data.
- “Organizational Efficiency and Design” domain was changed to “Financial Efficiency”
- Removed issues that were addressed duplicate concepts.
- Strategic issues remained separated as originally presented in the 2004 version.
- Thirty-seven strategic priorities remained that overlapped with 2004 version.
- Regrouped the component strategic issue to correspond to these themes as was done in the Brown et al (2005a) paper.
- Esthetic and formatting changes were made to the survey to make the matrix clearer and easier to complete.
- The instructions for the matrices of data collection were originally on a separate page of the survey, requiring respondents to refer to the instruction page if needed.
 - o In the 2011 version the instructions were provided on a separate page, but also put at the top of the matrix columns for each section, reducing respondent burden.
 - o Major healthcare themes were shaded to indicate the different sections of the survey more clearly.
- Choices for each of the strategic issues (yes/no, 0/1/2/3, 0/1/2/3/4) were separated more clearly in columns.
- In the 2004 survey question 4 asked an open ended question: “What would you say are your 5 top strategic priorities over the next 5 years?” This question was altered in the 2011 survey.
 - o Space at the bottom of the data collection matrix was provided with five blank fields asking respondents to indicate and rank their organization’s top five strategic issues from the matrix. Respondents put the corresponding issue number in one of the five blanks, 1 indicated highest priority and 5 indicated the lowest (of the top five).
 - o An open ended question was added to the end of the survey asking respondents to indicate any strategic issues that may have been missed on the survey.

Questions removed from 2004 survey:

- Questions 1a, 1b, 1c, 1d, and 2 were removed because they asked information that could be found elsewhere (1a) or did not ask information important for the focus on strategic shifts due to accountability (1b, 1c, 1d, and 2).
- Question 3 of the 2004 survey became question 1 in the 2011 version.
- Strategic Integration and Partnerships – government relations, the different levels of government were removed.

Additions to the 2011 survey:

- Four strategic issues not captured clearly in the 2004 matrix were added as a result of reading literature on high performing health systems, but were not used for this thesis because they did not allow for comparison with 2004:
 - o “Consumer Engagement” – increasing focus on publicly available performance assessments [pperf]
 - o Added Facility and IT Investment domain and the three strategic issues for this category when survey was piloted with a CFO from a large community hospital
 - capital redevelopment (new buildings and facilities) [capdev]
 - building infrastructure investment (maintenance of existing facilities) [infras]
 - Information technology (IT) infrastructure investment [itinfra]

- Question 1b, 1c, 2, 3, 4, 5, 6, and 12 were new additions to the 2011 survey (see Appendix C for the full survey package).

Appendix B: Domains and Issues

1. Consumer Engagement (CE)
2. Corporate Governance and Management (CGM)
3. Financial Efficiency (FE)
4. Human Resources Cultivation (HRC)
5. Improved Information Use for Decision Making (IIDM)
6. Patient Care Management (PCM)
7. Service Integration and Partnerships (SIP)

Table B.1 Alphabetical list of strategic issues and their domains (with abbreviations)

Issue	Description	Domain
acad	Relations with academic institutions affiliated with recognized programs in health related fields	SIP
adv	Increasing focus on identification and management of adverse events	PCM
brded	Educational opportunities and resources for board members	CGM
brdprf	Routine board member performance appraisals using established criteria	CGM
brdsuc	Board member succession planning	CGM
cag	Involving community advisory groups in corporate decision-making	CE
cldss	Implementing clinical decision-support system	IIDM
clsuc	Clinical leadership and succession planning	HRC
collab	Collaboration with academic and training facilities for human resource planning	SIP
cpdss	Implementing corporate decision-support system	IIDM
demo	Planning based on changing demographics of your catchment population	CE
ehr	Implementing electronic patient health record	IIDM
fepln	Increasing focus on facility planning	FE
fund	Increasing focus on donations and fundraising efforts	FE
gov	Increasing focus on government relations	SIP
hc	Increasing engagement of consumers in health and healthcare issues	CE
hint	Horizontal Integration	SIP
infec	Increasing focus on infection control strategies	PCM
inj	Reduction in injury and/or absenteeism	HRC
innop	Innovations to enhance our financial operating position	FE
innpc	Innovations in high-quality patient care delivery	PCM
inntec	Cultivating innovations in new technology for diagnosis and/or treatment (including pharmaceuticals)	PCM
lab	Labour relations	HRC
pegov	Increasing engagement of consumers in program planning, evaluation, and/or corporate governance issues	CE
poph	Increasing focus on population health	CE
pr	Increasing focus on public relations/marketing	CE
prface	Increasing focus on performance measurement for accountability	IIDM
prfqal	Increasing focus on performance measurement for improved quality	IIDM
ptsat	Increasing focus on patient satisfaction	CE
rec	Physician and staff recruitment	HRC
regn	Increasing focus on regionalization	SIP
right	Increasing engagement of consumers in rights and responsibilities	CE
smed	Educational opportunities and resources for senior management	CGM
smprf	Routine senior management performance appraisals using established criteria	CGM
smsuc	Senior management succession planning	CGM
vint	Vertical integration	SIP
voltr	Increasing focus on volunteer relations	SIP

Table B.2 Domains/strategic issues with their minimum and maximum scores/ratings

Domain (shaded) and Issues*	Articulation		Importance		Challenge	
	Min	Max	Min	Max	Min	Max
Consumer Engagement	0	8	0	24	0	32
Involving community advisory groups in corporate decision-making	0	1	0	3	0	4
Planning based on changing demographics of your catchment population	0	1	0	3	0	4
Increasing engagement of patients /consumers in health and healthcare issues	0	1	0	3	0	4
Increasing engagement of patients /consumers in rights and responsibilities	0	1	0	3	0	4
Increasing engagement of patients /consumers in program planning and evaluation and/or corporate governance issues	0	1	0	3	0	4
Increasing focus on public relations/marketing	0	1	0	3	0	4
Increasing focus on patient satisfaction	0	1	0	3	0	4
Increasing focus on population health	0	1	0	3	0	4
Corporate Governance and Management	0	6	0	18	0	24
Senior management succession planning	0	1	0	3	0	4
Routine senior management performance appraisals using established criteria	0	1	0	3	0	4
Educational opportunities and resources for senior management	0	1	0	3	0	4
Board member succession planning	0	1	0	3	0	4
Routine board member performance appraisals using established criteria	0	1	0	3	0	4
Educational opportunities and resources for board members	0	1	0	3	0	4
Financial Efficiency	0	3	0	9	0	12
Innovations to enhance our financial operating position	0	1	0	3	0	4
Increasing focus on facility planning	0	1	0	3	0	4
Increasing focus on donations and fundraising efforts	0	1	0	3	0	4
Human Resources Cultivation	0	4	0	12	0	16
Physician and Staff recruitment	0	1	0	3	0	4
Clinical leadership and succession planning	0	1	0	3	0	4
Reduction in injury and/or absenteeism	0	1	0	3	0	4
Labour relations	0	1	0	3	0	4
Improved Information Use for Decision Making	0	5	0	15	0	20
Increasing focus on performance measurement for improved quality	0	1	0	3	0	4
Increasing focus on performance measurement for accountability	0	1	0	3	0	4
Implementing corporate decision-support system	0	1	0	3	0	4
Implementing clinical decision-support system	0	1	0	3	0	4
Implementing electronic patient health record	0	1	0	3	0	4
Patient Care Management	0	4	0	12	0	16
Innovations in high-quality patient care delivery	0	1	0	3	0	4
Cultivating innovations in new technology for diagnosis and/or treatment (including pharmaceuticals)	0	1	0	3	0	4
Increasing focus on identification and management of adverse events	0	1	0	3	0	4
Increasing focus on infection control strategies	0	1	0	3	0	4
Service Integration and Partnerships	0	7	0	21	0	28
Collaboration with academic and training facilities for human resource planning	0	1	0	3	0	4
Relations with academic institutions affiliated with recognized programs in health related fields	0	1	0	3	0	4
Vertical integration	0	1	0	3	0	4
Increasing focus on regionalization	0	1	0	3	0	4
Increasing focus on government relations	0	1	0	3	0	4
Increasing focus on volunteer relations	0	1	0	3	0	4
Horizontal Integration	0	1	0	3	0	4

*Domain and respective issues obtained from Brown et al. (2005a)

Table B.3 Correlation matrices and Cronbach's alpha for strategic issues within domains using 2011 data

1. CONSUMER ENGAGEMENT:

Articulation								
Correlation (p-value)								
	cag	demo	hc	right	pegov	pr	ptsat	poph
cag	1							
demo	0.2540 (1.0)	1						
hc	0.2876 (1.0)	0.3565 (0.2656)	1					
right	0.1222 (1.0)	0.2021 (1.0)	0.0087 (1.0)	1				
pegov	0.2452 (1.0)	0.1293 (1.0)	0.3113 (0.6913)	0.2460 (1.0)	1			
pr	0.2088 (1.0)	0.0583 (1.0)	0.1339 (1.0)	-0.1031 (1.0)	-0.0732 (1.0)	1		
ptsat	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	1	
poph	0.1793 (1.0)	0.3590 (0.2711)	0.0304 (1.0)	-0.0133 (1.0)	0.2403 (1.0)	-0.0145 (1.0)	(0.0)	1
Cronbach's α	0.5548 <i>poor index</i>							

Importance								
Correlation (p-value)								
	cag	demo	hc	right	pegov	pr	ptsat	poph
cag	1							
demo	0.3592 (0.2497)	1						
hc	0.6017 (0.0001)	0.3113 (0.7782)	1					
right	0.5252 (0.0021)	0.3953 (0.1145)	0.6026 (0.0001)	1				
pegov	0.4781 (0.0109)	0.3191 (0.6287)	0.4307 (0.0449)	0.5920 (0.0001)	1			
pr	0.3182 (0.6406)	-0.0621 (1.0)	0.2844 (1.0)	0.2791 (1.0)	0.2198 (1.0)	1		
ptsat	0.1527 (1.0)	0.2863 (1.0)	0.3817 (0.1746)	0.4629 (0.0175)	0.1169 (1.0)	0.0113 (1.0)	1	
poph	0.1792 (1.0)	0.4482 (0.0273)	0.1214 (1.0)	0.2213 (1.0)	0.1609 (1.0)	0.1457 (1.0)	0.1495 (1.0)	1
Cronbach's α	0.7767 <i>acceptable scale</i>							

Challenge								
Correlation (p-value)								
	cag	demo	hc	right	pegov	pr	ptsat	poph
cag	1							
demo	0.2664 (1.0)	1						
hc	0.5907 (0.0002)	0.2429 (1.0)	1					
right	0.3139 (0.6967)	0.2431 (1.0)	0.6556 (<0.0001)	1				
pegov	0.2242 (1.0)	0.2166 (1.0)	0.3384 (0.4237)	0.2997 (0.8644)	1			
pr	0.2044 (1.0)	0.1974 (1.0)	0.2852 (1.0)	0.2434 (1.0)	0.0076 (1.0)	1		
ptsat	0.1225 (1.0)	0.1957 (1.0)	0.1673 (1.0)	0.0949 (1.0)	0.2086 (1.0)	0.3621 (0.2527)	1	
poph	-0.0753 (1.0)	0.2390 (1.0)	0.1493 (1.0)	0.0437 (1.0)	0.2179 (1.0)	0.1393 (1.0)	0.3430 (0.3844)	1
Cronbach's α	0.7086 <i>acceptable scale</i>							

2. CORPORATE GOVERNANCE AND MANAGEMENT:

Articulation						
Correlation (p-value)						
	smsuc	smprf	smed	brdsuc	brdprf	brded
smsuc	1					
smprf	0.4475 (0.0132)	1				
smed	0.4959 (0.0028)	0.5752 (0.0001)	1			
brdsuc	0.5367 (0.0006)	0.5701 (0.0002)	0.6490 (<0.0001)	1		
brdprf	0.5346 (0.0007)	0.6255 (<0.0001)	0.7265 (<0.0001)	0.6832 (<0.0001)	1	
brded	0.4182 (0.0305)	0.5752 (0.0001)	0.6102 (<0.0001)	0.7285 (<0.0001)	0.6481 (<0.0001)	1
Cronbach's α	0.8955 <i>good scale</i>					

Importance						
Correlation (p-value)						
	smsuc	smprf	smed	brdsuc	brdprf	brded
smsuc	1					
smprf	0.2499 (1.0)	1				
smed	0.4228 (0.0269)	0.5231 (0.0010)	1			
brdsuc	0.2289 (1.0)	0.3426 (0.1936)	0.3525 (0.1558)	1		
brdprf	0.2562 (1.0)	0.4289 (0.0226)	0.4105 (0.0376)	0.7251 (<0.0001)	1	
brded	0.2747 (0.7306)	0.2740 (0.7405)	0.5808 (0.0001)	0.5739 (0.0001)	0.5963 (<0.0001)	1
Cronbach's α	0.8104 <i>good scale</i>					

Challenge						
Correlation (p-value)						
	smsuc	smprf	smed	brdsuc	brdprf	brded
smsuc	1					
smprf	0.5118 (0.0019)	1				
smed	0.4610 (0.0099)	0.6216 (<0.0001)	1			
brdsuc	0.5604 (0.0003)	0.4341 (0.0219)	0.5518 (0.0004)	1		
brdprf	0.3768 (0.0964)	0.3938 (0.0637)	0.4194 (0.0328)	0.6754 (<0.0001)	1	
brded	0.4944 (0.0034)	0.5202 (0.0014)	0.6423 (<0.0001)	0.8269 (<0.0001)	0.7046 (<0.0001)	1
Cronbach's α	0.8784 <i>good scale</i>					

3. FINANCIAL EFFICIENCY:

	Articulation		
	Correlation (p-value)		
	innop	fcpln	fund
innop	1		
fcpln	-0.0695 (1.0)	1	
fund	0.3093 (0.0770)	0.4944 (0.0006)	1
Cronbach's α	0.4929	<i>poor</i>	<i>index</i>

	Importance		
	Correlation (p-value)		
	innop	fcpln	fund
innop	1		
fcpln	-0.0578 (1.0)	1	
fund	-0.0764 (1.0)	0.4491 (0.0025)	1
Cronbach's α	0.42	<i>poor</i>	<i>index</i>

	Challenge		
	Correlation (p-value)		
	innop	fcpln	fund
innop	1		
fcpln	0.1494 (0.8861)	1	
fund	-0.1018 (1.0)	0.4010 (0.0106)	1
Cronbach's α	0.3424	<i>poor</i>	<i>index</i>

4. HUMAN RESOURCES CULTIVATION:

	Articulation			
	Correlation (p-value)			
	rec	clsuc	inj	lab
rec	1			
clsuc	0.2843 (0.2463)	1		
inj	0.2843 (0.2346)	0.2532 (0.4209)	1	
lab	0.2740 (0.2958)	0.1129 (1.0)	0.3703 (0.0414)	1
Cronbach's α	0.5883	<i>poor</i>	<i>index</i>	

	Importance			
	Correlation (p-value)			
	rec	clsuc	inj	lab
rec	1			
clsuc	0.4922 (0.0015)	1		
inj	-0.0725 (1.0)	0.1056 (1.0)	1	
lab	0.0296 (1.0)	0.0618 (1.0)	0.2440 (0.5465)	1
Cronbach's α	0.4026	<i>poor</i>	<i>index</i>	

	Challenge			
	Correlation (p-value)			
	rec	clsuc	inj	lab
rec	1			
clsuc	0.3920 (0.0267)	1		
inj	0.0357 (1.0)	0.0129 (1.0)	1	
lab	0.0437 (1.0)	0.0073 (1.0)	0.1714 (1.0)	1
Cronbach's α	0.3331	<i>poor</i>	<i>index</i>	

5. IMPROVED INFORMATION USE FOR DECISION MAKING:

	Articulation				
	Correlation (p-value)				
	prfqal	prfacc	cpdss	cldss	ehr
prfqal	1				
prfacc	0.6996 (<0.0001)	1			
cpdss	0.3349 (0.1628)	0.3785 (0.0616)	1		
cldss	0.1972 (1.0)	0.2566 (0.7201)	0.8784 (<0.0001)	1	
ehr	0.0243 (1.0)	-0.0126 (1.0)	0.5058 (0.0015)	0.5263 (0.0009)	1
Cronbach's α	0.7536	<i>acceptable</i>	<i>scale</i>		

	Importance				
	Correlation (p-value)				
	prfqal	prfacc	cpdss	cldss	ehr
prfqal	1				
prfacc	0.8791 (<0.0001)	1			
cpdss	0.3534 (0.1016)	0.4724 (0.0041)	1		
cldss	0.2593 (0.6611)	0.2784 (0.4792)	0.6034 (<0.0001)	1	
ehr	0.0615 (1.0)	0.1142 (1.0)	0.0782 (1.0)	0.1084 (1.0)	1
Cronbach's α	0.7037	<i>acceptable</i>	<i>scale</i>		

Challenge					
Correlation (p-value)					
	prfqal	prface	cpdss	cldss	ehr
prfqal	1				
prface	0.8929 (<0.0001)	1			
cpdss	0.4502 (0.00092)	0.4483 (0.0097)	1		
cldss	0.2975 (0.3401)	0.2646 (0.6060)	0.7087 (<0.0001)	1	
ehr	0.0505 (1.0)	0.1183 (1.0)	0.3333 (0.1684)	0.5604 (0.0002)	1
Cronbach's α	0.7789 <i>acceptable scale</i>				

6. PATIENT CARE MANAGEMENT:

	Articulation				Importance				Challenge			
	Correlation (p-value)				Correlation (p-value)				Correlation (p-value)			
	innpc	inntec	adv	infec	innpc	inntec	adv	infec	innpc	inntec	adv	infec
innpc	1				1				1			
inntec	0.3161 (0.1345)	1			0.3913 (0.0247)	1			0.4019 (0.0189)	1		
adv	-0.0235 (1.0)	0.0956 (1.0)	1		0.3147 (0.1383)	0.0386 (1.0)	1		0.4978 (0.0010)	0.3903 (0.0254)	1	
infec	-0.1978 (0.9588)	0.2004 (0.9264)	0.0802 (1.0)	1	0.072 (1.0)	0.000 (1.0)	0.4338 (0.0079)	1	0.3135 (0.1417)	0.1952 (0.9934)	0.6476 (<0.0001)	1
Cronbach's α	0.2541 <i>poor index</i>				0.5041 <i>poor index</i>				0.7336 <i>acceptable index</i>			

7. SERVICE INTEGRATION AND PARTNERSHIPS:

	Articulation						
	Correlation (p-value)						
	collab	acad	vint	regn	gov	voltr	hint
collab	1						
acad	0.4461 (0.0171)	1					
vint	0.0381 (1.0)	0.1525 (1.0)	1				
regn	0.2240 (1.0)	0.2643 (1.0)	0.4023 (0.0792)	1			
gov	0.1598 (1.0)	0.0454 (1.0)	0.1256 (1.0)	0.2131 (1.0)	1		
voltr	0.1871 (1.0)	0.2341 (1.0)	0.0826 (1.0)	0.3916 (0.0943)	0.2989 (0.6589)	1	
hint	0.1353 (1.0)	0.3275 (0.4543)	0.6146 (0.0001)	0.4394 (0.0332)	0.1912 (1.0)	0.3585 (0.2398)	1
Cronbach's α	0.7031 <i>acceptable scale</i>						

Importance							
Correlation (p-value)							
	collab	acad	vint	regn	gov	voltr	hint
collab	1						
acad	0.7227 (<0.0001)	1					
vint	0.0865 (1.0)	-0.0086 (1.0)	1				
regn	-0.1065 (1.0)	-0.1170 (1.0)	0.3020 (0.7758)	1			
gov	0.3768 (0.1348)	0.4182 (0.0475)	0.0591 (1.0)	0.0050 (1.0)	1		
voltr	-0.0217 (1.0)	0.0237 (1.0)	0.1979 (1.0)	0.2612 (1.0)	0.2380 (1.0)	1	
hint	0.0888 (1.0)	0.1237 (1.0)	0.1972 (1.0)	0.2884 (0.9827)	0.0620 (1.0)	0.1351 (1.0)	1
Cronbach's α	0.4426	<i>poor</i>	<i>index</i>				

Challenge							
Correlation (p-value)							
	collab	acad	vint	regn	gov	voltr	hint
collab	1						
acad	0.5699 (0.0002)	1					
vint	0.1636 (1.0)	0.2927 (0.9134)	1				
regn	0.1216 (1.0)	0.1351 (1.0)	0.1766 (1.0)	1			
gov	0.1819 (1.0)	0.1641 (1.0)	0.1079 (1.0)	0.4021 (0.0798)	1		
voltr	0.1533 (1.0)	0.3382 (0.3196)	0.0780 (1.0)	0.1798 (1.0)	0.4071 (0.0635)	1	
hint	0.0815 (1.0)	0.1982 (1.0)	0.2973 (0.9402)	0.3958 (0.1124)	0.3996 (0.0934)	0.2893 (0.9217)	1
Cronbach's α	0.6956	<i>questionable</i>	<i>index</i>				

Appendix C: Survey package

Letter of invitation

<Date>

Dear _____:

We are writing to ask for your participation in the enclosed survey. Your help in this undertaking is essential to understanding the strategic priorities of Ontario's acute care hospitals and how they are influenced by the priorities of the Ontario health system.

You may recall in 2004, a "Strategic Priorities Survey" of Ontario hospitals was conducted by a team under the direction of Dr. Adalsteinn Brown at the University of Toronto. The high response rate at that time provided high quality data that was useful in ensuring that indicators for acute care hospitals in Ontario supported their key priorities. Some results of the 2004 survey were published in *Healthcare Quarterly* in 2005. This current study is being undertaken as part of the PhD research of Ms. Seija Kromm at the University of Toronto.

Given the changes to Ontario's health care system since the "Strategic Priorities Survey" was first used in 2004, we think it important to repeat it to understand organizational priorities in this new healthcare environment. We are particularly interested in the implications of the increased focus on accountability. Just like the earlier version of the survey and its results, neither you, nor your hospital, will be identified; only aggregate data will be reported.

This study has been approved by the Office of Research Ethics at the University of Toronto; an informed consent form is enclosed. The study is also funded partially by a CIHR-PHSI grant (PHE-101967) examining approaches to accountability in health care and a PhD studentship from Alberta Innovates – Health Solutions. Partners in this project include the Ontario Hospital Association, the Canadian Healthcare Association, the Ontario Ministry of Health and Long Term Care, and several of the Local Health Integration Networks. Additional information about the research can be found at www.approachestoaccountability.ca.

Your time and participation in this study is greatly appreciated. By returning the survey you are giving consent for its use in research dissemination of aggregate results. If you have any questions do not hesitate to contact Ms. Seija Kromm at <email address> or by phone at <phone number>.

Sincerely,

Raisa Deber, PhD

G. Ross Baker, PhD

Walter P. Wodchis, PhD

Adalsteinn Brown, D Phil

Nancy Kraetschmer, PhD

Seija Kromm, PhD Candidate

Strategic Priorities Survey:

Acute Care Hospital Strategic Priorities Survey 2011

Ontario

Thank you for participating in the 2011 Strategic Priorities Survey.

Your participation is invaluable.

This survey is a follow-up to the survey carried out in 2004 and will allow us to obtain important information following the introduction of Local Health Integration Networks.

This survey can be completed in collaboration with other leaders within your hospital.

Please return the completed survey
in the enclosed postage-paid envelope or by fax (1-416-978-7350)
to Seija Kromm by Monday, **October 31, 2011**.

If you have any questions, please contact
Ms. Seija Kromm by email: <email address>

We may contact you to request a follow-up interview.

Background

Your responses to this survey are essential to understanding the strategic priorities of Ontario's acute care hospitals and how they are influenced by the Ontario health system.

In 2004, a survey of the strategic priorities of Ontario hospitals was conducted by a team of researchers at the University of Toronto. The high response rate at that time provided high quality data that was useful in ensuring that indicators for acute care hospitals in Ontario supported their key priorities. Some results of the 2004 survey were published in *Healthcare Quarterly* in 2005.

Because of the changes to Ontario's health care system since the "Strategic Priorities Survey" was first used, we think it important to repeat it to understand organizational priorities in this new healthcare environment. We are particularly interested in the implications of the increased focus on accountability and its associated requirements. Just like the earlier version of the survey and its results, neither you, nor your hospital, will be identified; only aggregate data will be reported. You will receive a report of these aggregated results, as well as the opportunity to provide feedback.

We will also be conducting the study in Alberta, which will help us disentangle overall trends from those affecting individual provinces.

We would appreciate it if you could provide us with a copy of your balanced scorecard and Hospital Service Accountability Agreement (HSAA), either electronically to <email address> or in the return envelope.

This section asks about performance and accountability reporting.

Question 1:

a. Does your organization have a documented and clearly articulated performance measurement framework to drive strategy and accountability? (e.g., strategy maps, balanced scorecard, corporate initiatives)

₁ Yes
 ₀ No
→ Go to Question 2

b. If yes, does your organization's performance measurement framework take external accountability requirements into account? (e.g., Hospital Service Accountability Agreement, Quarterly Improvement Plan)

₁ Yes
 ₀ No

Question 2:

a. Are there performance measures your organization is required to report that are overlapping (e.g., reporting the same indicator to two or more agencies)?

₁ Yes
 ₀ No
→ Go to Question 3

b. If yes, provide an example and explain how this impacts your organization.

Question 3:

a. Are there accountability or performance measures that you think would be valuable but are not captured by current requirements? (e.g., cross system measures)

₁ Yes
 ₀ No
→ Go to Question 4

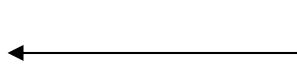
b. If yes, provide an example and explain why the measure(s) would be valuable.

Question 4:

a. Does your hospital have sufficient resources dedicated to capturing, analyzing and reporting performance data as requested?

₁ Yes
 ₀ No

b. If no, please explain.



Question 5:

Does your organization use a type of business intelligence system to capture and report performance data?

₁ Yes → What system do you use? (e.g., Cognos)

₀ No → How do you capture this data?
(e.g., manually, created own report writer, other)

Question 6:

Please use the space below to provide any other comments you may have that are related to performance and accountability reporting.

This section asks about who is involved in the development of your organization’s strategic priorities and how much they are involved.

Question 7:

Please circle the number corresponding to how involved each is.

Who is involved?	If involved, how much are they involved? (circle one)				
	Not at all Involved		Somewhat Involved		Highly Involved
The Ministry of Health and Long-Term Care (the government and government agencies)	0	1	2	3	4
Local Health Integration Network (LHIN) Board	0	1	2	3	4
Your hospital board	0	1	2	3	4
Senior management in your hospital	0	1	2	3	4
Other management in your hospital	0	1	2	3	4
Physicians in your hospital	0	1	2	3	4
Other clinical staff in your hospital (e.g., nurses, allied health)	0	1	2	3	4
Community served by your hospital	0	1	2	3	4
Other key stakeholders (please specify): _____	0	1	2	3	4
_____	0	1	2	3	4

This section asks about your views regarding current and future issues that may have an impact on your organization’s strategic direction.

Question 8:

Pages 4 to 8 contain a matrix which lists 41 issues that your organization may be focusing on. For each issue, we ask about four elements, captured in Parts A, B, C, & D of the matrix.

Part A: Vision, mission, corporate values, strategic objectives

For each issue in the matrix, check (√) the corresponding box to indicate whether it is not or is currently addressed and clearly articulated in your hospital’s vision, mission, corporate values, and/or strategic objectives/goals.

Part B: Importance in the next five years

For each issue in the matrix, check (√) the box on the scale that corresponds to how important the issue is to your organization’s future strategic directions in the next FIVE years. The scale has four options, from ‘not important’ to the highest level of ‘very important.’

Part C: Long-term sustainability

For each issue in the matrix, check (√) the box on the scale that corresponds to how challenging the issue will be to your organization’s long-term sustainability. The scale has five options, from ‘not a challenge’ to the highest level, ‘a major challenge not within the organization’s control.’

Part D: Top five over next five years

At the end of the matrix, we ask you to choose 5 out of the 41 issues that you think are your organization’s top five strategic priorities over the next FIVE years. Please rank your top five according to their priority: **1** indicates the top priority and **5** indicates the fifth highest priority. Use the issue number and write it in the space beside the ranking number. For example, if “increasing focus on facility planning” is considered the top priority, simply write the number ‘10’ beside the rank number ‘1’ (see page 8).

Question 9, on page 10, gives you the opportunity to indicate any priorities you think are not captured in the matrix.

	Part A: Please indicate (✓) if each issue is <u>NOT</u> or <u>IS</u> clearly articulated in your current vision, mission, corporate values, and/or strategic objectives/goals.		Part B: Please indicate (✓) the level of importance of each issue to your organization's strategic direction over the next <u>FIVE</u> years (Check one)				Part C: Please indicate (✓) how challenging each issue will be to your organization's <u>long-term sustainability</u> (Check one)				
	is <u>not</u> articulated	is articulated	<u>not</u> important	somewhat important	important	very important	<u>not</u> a challenge	somewhat of a challenge	a challenge	a major challenge	a major challenge, <u>not</u> within the organization's control
HUMAN RESOURCES CULTIVATION:											
1. Physician and staff recruitment efforts	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
2. Clinical leadership succession planning	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
3. Reduction in injury and/or absenteeism	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
4. Labour relations	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
PATIENT CARE MANAGEMENT:											
5. Innovations in high-quality patient care delivery	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
6. Cultivating innovations in new technology for diagnosis and/or treatment (including pharmaceuticals)	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
Increasing focus on:											
7. Identification and management of adverse events	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
8. Infection control strategies	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
FINANCIAL EFFICIENCY:											
9. Innovations to enhance our financial operating position	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
Increasing focus on:											
10. Facility planning	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>
11. Donations and fundraising efforts	<input type="checkbox"/>	<input type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	<input type="checkbox"/>	<input type="checkbox"/>

	Part A: Please indicate (✓) if each issue <u>IS</u> <u>NOI</u> or <u>IS</u> clearly articulated in your current vision, mission, corporate values, and/or strategic objectives/goals.		Part B: Please indicate (✓) the <u>level of importance</u> of each issue to your organization's strategic direction over the next <u>FIVE</u> years (Check one)				Part C: Please indicate (✓) how challenging each issue will be to your organization's long-term sustainability (Check one)				
SERVICE INTEGRATION & PARTNERSHIPS:	is not articulated	is articulated	not important	somewhat important	important	very important	not a challenge	somewhat of a challenge	a challenge	a major challenge	a major challenge, <u>not</u> within the organization's control
24. Collaboration with academic and training facilities for human resource planning	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	3	0	1	2	3	4
25. Relations with academic institutions affiliated with recognized programs in health related fields	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	3	0	1	2	3	4
26. Vertical integration*	<input type="checkbox"/>	<input type="checkbox"/>	0	1	2	3	0	1	2	3	4

If vertical integration IS occurring, please indicate with whom the partnership(s) exists:

not specified

OR

Check all that apply:

- Primary Care Providers (e.g. GP offices, Family Health Networks/Teams, Community Health Centres, etc)
- Rehabilitation Facilities
- Mental Health Facilities
- Complex Continuing Care Facilities
- Community Care Access Centres
- Public Health Units
- Long-Term Care Centres
- Other (please specify): _____

*** Definition:**
Vertical integration – your organization works with other health care providers (such as those listed to the left) to increase the comprehensiveness and continuity of care.

Part A: Please indicate (✓) if each issue IS NOT or IS clearly articulated in your current vision, mission, corporate values, and/or strategic objectives/goals.		Part B: Please indicate (✓) the level of importance of each issue to your organization's strategic direction over the next FIVE years (Check one)					Part C: Please indicate (✓) how challenging each issue will be to your organization's long-term sustainability (Check one)			
is not articulated	is articulated	not important	somewhat important	important	very important	not a challenge	somewhat of a challenge	a challenge	a major challenge	a major challenge, not within the organization's control
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	1	0	1	2	3	0	1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	1	0	1	2	3	0	1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	1	0	1	2	3	0	1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	1	0	1	2	3	0	1	2	3	4

*** Definitions:**

Horizontal integration – your hospital affiliates itself with direct competitors to create a partnership.

Alliance – cooperative contractual agreements your hospital has with other organizations. The purpose of these arrangements is to achieve some long-term strategic purpose that cannot be accomplished by your hospital alone.

Federation – a type of alliance in which your organization is a part of a larger organization or group but still maintains a degree of internal autonomy.

Network – a type of alliance in which your organization is part of a system of interrelated organizations, especially over a geographical area.

Consortium – a type of alliance in which your organization joins with a group of similarly-minded organizations in order to pool resources and undertake a project that would otherwise be beyond the capabilities of any one member.

Merger – your organization enters into a mutual agreement with another organization to combine into a single new organization (sometimes with a new name).

For-profit partnerships – your organization combines with a for-profit organization in order to carry out some strategic purpose that cannot be accomplished by your organization alone.

not specified

OR

Check all that apply:

Alliances

Federations

Networks

Consortia

Mergers

For-profit partnerships

Other (please specify): _____

	Part A:		Part B:				Part C:				
	is not articulated	is articulated	not important	somewhat important	important	very important	not a challenge	somewhat of a challenge	a challenge	a major challenge	a major challenge, not within the organization's control
CORPORATE GOVERNANCE & MANAGEMENT:											
31. Senior management succession planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Routine senior management performance appraisals using established criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Educational opportunities and resources for senior management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Board member succession planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Routine board member performance appraisals using established criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Educational opportunities and resources for board members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IMPROVED INFORMATION USE FOR DECISION MAKING:											
Increasing focus on:											
37. Performance measurement for improved quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Performance measurement for accountability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementing:											
39. Corporate decision-support system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Clinical decision-support system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Electronic patient health record	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part D: Top five issues over the next five years. Please put the issue number next to the ranking number, 1 indicates the top priority and 5 indicates the fifth highest priority:

Rank 1: _____ Rank 2: _____ Rank 3: _____ Rank 4: _____ Rank 5: _____

Question 9:

We may not have captured all the strategic priorities/directions of your organization in the above matrix. In the space below, please provide a list of what we have missed.

Please provide us with some information about the community that you serve.

Question 10:

What is the estimated population of your immediate catchment area for whom you are the primary source of acute inpatient hospital care? *(Please check one box)*

- less than 50,000
- 50,000 – 100,000
- 100,001 – 250,000
- 250,001 – 500,000
- 500,001 – 1,000,000
- over 1,000,000

Question 11:

How many other similar organizations provide acute inpatient hospital care to this catchment area population? *(Please check one box)*

- We are the only acute care organization to serve this immediate catchment population
- 1 – 2
- 3 – 5
- more than 5

Question 12:

Does your organization provide services to patients outside of your immediate catchment area or LHIN?

- ₁ Yes ₀ No

Please complete your contact information below:

The information collected in this survey will not be used to identify you or your organization unless express consent is received. Your responses will only be used for the purposes of this research study and will not be accessed by anyone outside of the research team.

So that we can send you aggregate results from this study, and to clarify any questions that need follow-up, we would appreciate contact information for the person filling out this survey.

Name of contact person:	
Title (e.g., President &/or CEO, Executive Director, Supervisor):	Hospital and Site (if applicable):
Length of time in present position at this hospital:	Local Health Integration Network:
Signature:	Phone number:
Email address:	Date:

May we contact you to request an interview at a later date?

₁ Yes

₀ No

We would appreciate it if you could provide us with a copy of your balanced scorecard and Hospital Service Accountability Agreement (HSAA), either electronically to <email address> or in the return envelope.

Thank you for participating!

Appendix D: Survey invitation email and reminders

Invitation email:

Subject: CIHR Approaches to Accountability – Hospital Survey

Dear :

In the next week you will be receiving a survey in the mail asking about the strategic priorities of your hospital. This survey is being conducted by Ms. Seija Kromm as part of her PhD research, under my supervision. Note that the other committee members are Professors G. Ross Baker and Walter P. Wodchis at the University of Toronto, Department of Health Policy, Management and Evaluation. Other members of our research team include Professor Adalsteinn Brown and Dr. Nancy Kraetschmer. We are pleased that the Ontario Hospital Association is a partner in this study and funding was provided by Canadian Institutes for Health Research.

Your responses are essential to understanding the strategic priorities of Ontario's acute care hospitals and how they are influenced by Ontario's health system, and we hope you'll help us by completing the survey. If you'd like to know more about the study, you can see more details at this link www.approachestoaccountability.ca.

Thank you in advance. Your time and responses to the survey are greatly appreciated.

Sincerely,

Raisa B. Deber, PhD
Professor, Department of Health Policy, Management and Evaluation
Faculty of Medicine
University of Toronto

Seija Kromm, MA, PhD Candidate
PhD Funded by Alberta Innovates-Health Solutions

Email Reminder:

SUBJECT: Reminder - Strategic Priorities Survey

Dear :

A few weeks ago you received a survey in the mail asking you about accountability in health care in Ontario, and the strategic priorities of your acute care hospital. Your responses will help increase understanding of accountability, and the strategic priorities of Ontario's acute care hospitals and how they are influenced by the priorities of Ontario's health care system.

This email is a reminder because we have not yet received your completed survey. If it is currently in the mail, please disregard this email and accept our sincere appreciation for taking the time to complete the survey. The original deadline to return the survey was October 17, 2011, but we have extended it to October 31, 2011. If you have not yet responded, we encourage you to complete it and mail it back in the addressed, stamped envelope it came with, or by fax to 1-416-978-7350.

We know that you are busy and may still be working on it and we look forward to receiving your responses soon. As indicated in the original invitation, we will disseminate a report of the aggregate results to all acute care hospital CEOs in Ontario who would like a copy and want to ensure the results reflect the views of your organization. Your participation is essential.

If you need additional copies of the survey you can find a PDF file of the survey that you can print, at the following link: <http://www.approachestoaccountability.ca/reports/Stratsurv.pdf>

Your time and participation in this study is greatly appreciated. Thank you for your assistance.

Sincerely,

Raisa Deber, PhD

Appendix E: Combining 2004 and 2011 survey data

Hospital mergers between 2004 and 2011:

Women's College Hospital provided data in 2004 in its alliance with Sunnybrook, but is no longer an acute care facility (is now an ambulatory care facility in 2011). Hotel Dieu Hospital also provided data in 2004 but as of 2011 it was an ambulatory care facility and no longer an acute care facility.

List of hospitals with same CEO in 2011:

- Tillsonburg District Memorial Hospital and Alexandra Hospital
- Strathroy Middlesex and Four Counties Health Services merged to become Middlesex Hospital Alliance
- North Wellington Health Centre joined with Groves Memorial Community Hospital to become North Wellington Health Care Corp & Groves Memorial
- Algonquin Health Services and South Muskoka Memorial Hospital joined to become Muskoka Algonquin Health Services
- Niagara Health System joined with Hotel Dieu Health Sciences Hospital and remained Niagara Health System
- Renfrew Victoria Hospital & St. Francis Memorial Hospital

The 2004 version included three issues in the matrix that were redundant (“increasing focus on donations and fundraising efforts”, “donor relations” and “increasing focus on fundraising efforts”). They were combined into one issue “increasing focus on donations and fundraising efforts” for the 2011 version. When combining the 2004 dataset with the 2011 dataset these three options were combined to create a single response equivalent to the highest value chosen for any of the three in 2004.

Coding Changes:

Coding for questions 10 and 11 (2011 numbering) from 2004 data were changed.

Question 10: 0 to 1, 1 to 2, 2 to 3, and 3 to 4

Question 11: 0 to 1, 1 to 2, 2 to 3, 3 to 4, 4 to 5, and 5 to 6

Appendix F: Hospital response shift

All tables use the following abbreviations:

Strategic Issue Suffixes:

_art = articulation
_imp = importance
_ch = challenge

Strategic Domains:

HRC = Human Resources Cultivation
PCM = Patient Care Management
FE = Financial Efficiency
CE = Consumer Engagement
SIP = Service Integration and Partnerships
CGM = Corporate Governance and Management
IIDM = Improved Information Use for Decision Making

Strategic Issues:

rec = Physician and staff recruitment
clsuc = Clinical leadership and succession planning
inj = Reduction in injury and/or absenteeism
lab = Labour relations
innpc = Innovations in high-quality patient care delivery
inntec = Cultivating innovations in new technology for diagnosis and/or treatment (including pharmaceuticals)
advs = Increasing focus on identification and management of adverse events
infec = Increasing focus on infection control strategies
innop = Innovations to enhance our financial operating position
fcpln = Increasing focus on facility planning
fund = Increasing focus on donations and fundraising efforts
cag = Involving community advisory groups in corporate decision-making
demo = Planning based on changing demographics of your catchment population
hc = Increasing engagement of patients /consumers in health and healthcare issues
right = Increasing engagement of patients /consumers in rights and responsibilities
pegov = Increasing engagement of patients /consumers in program planning and evaluation and/or corporate governance issues

pr = Increasing focus on public relations/marketing
ptsat = Increasing focus on patient satisfaction
poph = Increasing focus on population health
collab = Collaboration with academic and training facilities for human resource planning
acad = Relations with academic institutions affiliated with recognized programs in health related fields
vint = Vertical integration
regn = Increasing focus on regionalization
gov = Increasing focus on government relations
voltr = Increasing focus on volunteer relations
hint = Horizontal Integration
smsuc = Senior management succession planning
smprf = Routine senior management performance appraisals using established criteria
smed = Educational opportunities and resources for senior management
brdsuc = Board member succession planning
brdprf = Routine board member performance appraisals using established criteria
brded = Educational opportunities and resources for board members
prfqal = Increasing focus on performance measurement for improved quality
prfacc = Increasing focus on performance measurement for accountability
cpdss = Implementing corporate decision-support system
clidss = Implementing clinical decision-support system
ehr = Implementing electronic patient health record

Table F.1 ANOVA results comparing all hospitals that responded in both 2004 and 2011 to hospitals that responded in only 2004 or only 2011 (*articulation*)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	72.55	27.04	51	72.73	30.41	44	0.178	0.976	47.22	26.35	9	68.75	27.56	44	21.528	0.036
rec_art	0.94	0.24	51	0.89	0.32	44	-0.055	0.343	0.78	0.44	9	0.91	0.29	44	0.131	0.266
clsuc_art	0.57	0.50	49	0.58	0.50	43	0.010	0.924	0.13	0.35	8	0.64	0.49	44	0.511	0.007
inj_art	0.76	0.43	49	0.81	0.39	43	0.059	0.500	0.67	0.50	9	0.84	0.37	44	0.174	0.231
lab_art	0.71	0.46	49	0.67	0.47	43	-0.040	0.682	0.38	0.52	8	0.36	0.49	44	-0.011	0.952
PCM	75.49	29.79	51	73.30	32.53	44	-2.195	0.732	55.56	30.05	9	78.98	22.84	44	23.422	0.011
innpc_art	0.94	0.24	50	0.86	0.35	43	-0.080	0.200	0.75	0.46	8	0.91	0.29	44	0.159	0.202
inntec_art	0.67	0.48	48	0.61	0.49	44	-0.053	0.601	0.25	0.46	8	0.66	0.48	44	0.409	0.030
adv_s_art	0.73	0.45	49	0.72	0.45	43	-0.014	0.884	0.75	0.46	8	0.82	0.39	44	0.068	0.660
infec_art	0.78	0.42	50	0.79	0.41	43	0.011	0.902	0.75	0.46	8	0.77	0.42	44	0.023	0.891
FE	81.05	30.74	51	75.00	34.57	44	-6.045	0.396	51.85	29.40	9	71.21	30.15	44	19.360	0.084
innop_art	0.82	0.39	50	0.79	0.41	43	-0.029	0.725	0.75	0.46	8	0.91	0.29	44	0.159	0.202
fcpln_art	0.90	0.30	50	0.86	0.35	42	-0.043	0.533	0.67	0.50	9	0.77	0.42	44	0.106	0.510
fund_art	0.76	0.43	50	0.66	0.48	44	-0.101	0.286	0.25	0.46	8	0.45	0.50	44	0.205	0.291
CE	74.49	25.00	51	72.44	26.22	44	-3.047	0.564	48.61	28.26	9	72.16	18.65	44	23.548	0.003
cag_art	0.67	0.47	49	0.63	0.49	43	-0.046	0.651	0.33	0.50	9	0.61	0.49	44	0.280	0.127
demo_art	0.90	0.31	49	0.84	0.37	43	-0.061	0.394	0.44	0.53	9	0.84	0.37	44	0.396	0.009
hc_art	0.81	0.40	47	0.84	0.37	43	0.029	0.726	0.50	0.53	8	0.75	0.44	44	0.250	0.157
right_art	0.71	0.46	48	0.60	0.49	43	-0.104	0.303	0.25	0.46	8	0.75	0.44	44	0.500	0.005
pegov_art	0.72	0.45	47	0.60	0.49	43	-0.119	0.237	0.50	0.53	8	0.73	0.45	44	0.227	0.208
pr_art	0.80	0.40	50	0.77	0.43	43	-0.033	0.707	0.63	0.52	8	0.64	0.49	44	0.011	0.952
ptsat_art	0.96	0.20	49	0.86	0.35	43	-0.099	0.096	1.00	0.00	8	1.00	0.00	44	0.000	
poph_art	0.78	0.42	49	0.79	0.41	43	0.015	0.862	0.63	0.52	8	0.47	0.50	43	-0.160	0.416
SIP	74.79	28.37	51	74.68	26.48	44	-0.115	0.984	36.51	28.67	9	64.29	27.12	44	27.778	0.008
collab_art	0.77	0.42	48	0.77	0.42	44	0.002	0.983	0.44	0.53	9	0.70	0.46	44	0.260	0.138
acad_art	0.77	0.42	48	0.78	0.42	41	0.010	0.915	0.44	0.53	9	0.73	0.45	44	0.283	0.101
vint_art	0.80	0.41	49	0.78	0.42	41	-0.015	0.860	0.63	0.52	8	0.88	0.32	43	0.259	0.067
regn_art	0.67	0.47	49	0.65	0.48	43	-0.022	0.824	0.25	0.46	8	0.63	0.49	43	0.378	0.049
gov_art	0.78	0.42	46	0.83	0.38	42	0.051	0.552	0.38	0.52	8	0.39	0.49	44	0.011	0.953
voltr_art	0.80	0.40	50	0.73	0.45	41	-0.068	0.447	0.38	0.52	8	0.48	0.51	44	0.102	0.602
hint_art	0.94	0.24	48	0.93	0.26	42	-0.009	0.867	0.29	0.49	7	0.76	0.43	42	0.476	0.011
CGM	74.84	29.51	51	59.85	37.92	44	-14.988	0.033	25.93	31.30	9	48.86	41.36	44	22.938	0.123
smsuc_art	0.66	0.48	50	0.59	0.50	44	-0.069	0.495	0.13	0.35	8	0.52	0.51	44	0.398	0.039
smprf_art	0.93	0.26	41	0.89	0.32	35	-0.041	0.543	0.38	0.52	8	0.64	0.49	44	0.261	0.172
smed_art	0.86	0.35	50	0.53	0.50	43	-0.325	<0.0001	0.25	0.46	8	0.48	0.51	44	0.227	0.242
brdsuc_art	0.84	0.37	51	0.65	0.48	43	-0.192	0.031	0.38	0.52	8	0.39	0.49	44	0.011	0.953
brdprf_art	0.58	0.50	50	0.53	0.50	43	-0.045	0.666	0.13	0.35	8	0.48	0.51	44	0.352	0.066
brded_art	0.84	0.37	51	0.66	0.48	41	-0.185	0.039	0.50	0.53	8	0.43	0.50	44	-0.068	0.727
IIDM	80.39	27.85	51	77.73	31.76	44	-2.665	0.664	57.78	25.39	9	75.91	30.98	44	18.131	0.107
prfqal_art	0.96	0.20	50	0.93	0.26	43	-0.030	0.531	0.89	0.33	9	0.91	0.29	44	0.020	0.854
prfacc_art	0.90	0.30	50	0.84	0.37	43	-0.063	0.373	0.78	0.44	9	0.91	0.29	44	0.131	0.266
cpdss_art	0.76	0.43	50	0.70	0.46	44	-0.055	0.549	0.25	0.46	8	0.63	0.49	43	0.378	0.049
cldss_art	0.76	0.43	50	0.68	0.47	44	-0.078	0.403	0.38	0.52	8	0.62	0.49	42	0.244	0.208
ehr_art	0.72	0.45	50	0.77	0.42	44	0.053	0.563	0.75	0.46	8	0.79	0.41	43	0.041	0.802

Table F.2 ANOVA results comparing all hospitals that responded in both 2004 and 2011 to hospitals that responded in only 2004 or only 2011 (*importance*)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	80.23	17.71	51	78.60	19.64	44	-1.630	0.672	61.11	17.68	9	76.55	11.96	43	15.439	0.002
rec_imp	2.90	0.30	51	2.93	0.34	43	0.028	0.669	2.44	0.53	9	2.60	0.54	43	0.160	0.421
clsuc_imp	2.12	0.85	50	2.36	0.76	42	0.237	0.165	1.88	0.64	8	2.53	0.59	43	0.660	0.006
inj_imp	2.26	0.72	50	2.29	0.77	42	0.026	0.870	2.13	0.64	8	2.23	0.65	43	0.108	0.668
lab_imp	2.48	0.61	50	2.35	0.70	40	-0.130	0.351	1.71	0.76	7	1.86	0.75	42	0.143	0.644
PCM	79.90	21.61	51	80.43	23.84	43	0.524	0.911	67.59	30.74	9	80.49	13.91	44	12.900	0.051
innpc_imp	2.67	0.59	49	2.83	0.38	40	0.152	0.166	2.13	0.99	8	2.66	0.61	44	0.534	0.045
inntec_imp	2.10	1.03	49	2.22	0.91	41	0.117	0.570	1.75	0.71	8	2.05	0.81	44	0.295	0.337
adv_imp	2.44	0.73	50	2.48	0.71	42	0.036	0.811	2.63	0.52	8	2.43	0.66	44	-0.193	0.438
infec_imp	2.66	0.52	50	2.67	0.57	42	0.007	0.953	2.63	0.74	8	2.52	0.63	44	-0.102	0.682
FE	78.89	25.42	50	84.60	23.14	44	5.707	0.260	61.73	21.60	9	82.58	14.65	44	20.847	0.001
innop_imp	2.60	0.71	48	2.85	0.36	41	0.249	0.044	2.50	0.53	8	2.64	0.57	44	0.136	0.536
fcpln_imp	2.46	0.80	48	2.60	0.63	40	0.142	0.366	1.56	0.88	9	2.36	0.75	44	0.808	0.006
fund_imp	2.66	0.61	44	2.78	0.42	41	0.121	0.290	2.00	0.76	8	2.43	0.76	44	0.432	0.145
CE	71.65	18.24	51	70.55	20.28	44	-1.101	0.781	55.56	17.05	9	69.98	16.85	44	14.426	0.023
cag_imp	1.90	0.81	51	1.98	0.75	42	0.074	0.649	1.33	0.50	9	1.98	0.71	43	0.643	0.013
demo_imp	2.44	0.71	48	2.60	0.50	40	0.163	0.227	2.11	0.60	9	2.23	0.84	43	0.121	0.683
hc_imp	2.28	0.68	47	2.32	0.76	41	0.040	0.792	1.57	0.53	7	2.11	0.72	44	0.542	0.064
right_imp	2.17	0.63	48	1.95	0.78	40	-0.217	0.154	1.50	0.53	8	2.02	0.90	44	0.523	0.120
pegov_imp	2.11	0.63	47	2.10	0.72	39	-0.004	0.979	1.75	0.89	8	2.00	0.91	44	0.250	0.479
pr_imp	2.33	0.77	49	2.24	0.73	41	-0.083	0.607	2.13	0.83	8	1.98	0.90	44	-0.148	0.669
ptsat_imp	2.56	0.64	50	2.69	0.56	42	0.130	0.308	2.57	0.53	7	2.80	0.46	44	0.224	0.248
poph_imp	2.27	0.73	49	2.39	0.59	41	0.125	0.380	2.13	0.83	8	1.77	0.74	44	-0.352	0.231
SIP	76.47	20.35	51	75.76	21.71	44	-0.713	0.869	59.26	26.63	9	71.54	13.37	44	12.278	0.043
collab_imp	2.08	0.92	50	2.22	0.88	41	0.140	0.466	1.88	0.83	8	2.11	0.87	44	0.239	0.476
acad_imp	2.44	0.74	48	2.41	0.71	41	-0.023	0.882	2.00	0.76	8	2.30	0.79	44	0.295	0.335
vint_imp	2.62	0.61	45	2.68	0.63	37	0.053	0.698	2.63	0.74	8	2.66	0.53	41	0.034	0.879
regn_imp	2.31	0.72	48	2.30	0.88	40	-0.013	0.942	1.71	0.49	7	2.19	0.82	43	0.472	0.149
gov_imp	2.71	0.50	49	2.78	0.47	41	0.066	0.524	1.86	0.69	7	2.00	0.61	44	0.143	0.574
voltr_imp	2.47	0.68	49	2.64	0.58	39	0.172	0.214	2.14	0.38	7	1.91	0.86	44	-0.234	0.484
hint_imp	2.56	0.59	45	2.62	0.63	39	0.060	0.654	2.50	0.76	8	2.19	0.80	42	-0.310	0.319
CGM	71.79	20.03	51	69.07	23.46	44	-2.721	0.543	61.73	25.83	9	72.10	16.84	44	10.368	0.133
smsuc_imp	2.22	0.78	51	2.19	0.88	43	-0.030	0.863	2.25	0.46	8	2.23	0.68	44	-0.023	0.928
smprf_imp	2.22	0.70	51	2.21	0.78	42	-0.001	0.993	1.88	0.64	8	2.41	0.58	44	0.534	0.023
smed_imp	2.24	0.72	50	2.05	0.73	42	-0.192	0.207	1.88	0.35	8	2.09	0.71	44	0.216	0.406
brdsuc_imp	2.29	0.83	51	2.33	0.75	43	0.031	0.849	2.38	0.52	8	2.09	0.74	44	-0.284	0.306
brdprf_imp	1.82	0.84	51	2.00	0.88	42	0.176	0.328	1.88	0.64	8	2.14	0.70	44	0.261	0.332
brded_imp	2.18	0.74	51	2.09	0.68	43	-0.083	0.574	2.25	0.46	8	2.02	0.73	44	-0.227	0.402
IIDM	83.01	21.55	51	79.09	26.65	44	-3.916	0.431	74.81	22.80	9	84.39	12.45	44	9.579	0.078
prfqal_imp	2.67	0.59	49	2.62	0.70	42	-0.054	0.688	2.56	0.53	9	2.66	0.48	44	0.104	0.564
prfacc_imp	2.71	0.50	48	2.63	0.73	41	-0.074	0.575	2.44	0.53	9	2.66	0.48	44	0.215	0.234
cpdss_imp	2.45	0.82	49	2.43	0.93	40	-0.024	0.897	2.00	1.07	8	2.36	0.69	44	0.364	0.213
cldss_imp	2.52	0.74	50	2.44	0.82	39	-0.084	0.612	2.25	0.46	8	2.33	0.61	43	0.076	0.740
ehr_imp	2.56	0.70	50	2.67	0.65	42	0.107	0.456	2.75	0.46	8	2.70	0.55	44	-0.045	0.828

Table F.3 ANOVA results comparing all hospitals that responded in both 2004 and 2011 to hospitals that responded in only 2004 or only 2011 (*challenge*)

Strategic Issues & Domains	2004 Data								2011 Data							
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	53.92	15.61	51	53.55	18.20	44	-0.370	0.915	39.58	14.66	9	45.88	12.35	44	6.297	0.183
rec_ch	3.04	0.60	50	2.95	0.76	42	-0.088	0.541	2.00	0.87	9	2.16	0.96	44	0.159	0.649
clsuc_ch	1.94	0.89	48	1.98	0.91	41	0.038	0.842	1.88	0.83	8	2.09	0.78	43	0.218	0.476
inj_ch	1.84	0.94	49	1.98	1.00	42	0.139	0.496	1.88	0.64	8	1.79	0.83	43	-0.084	0.788
lab_ch	2.10	0.93	50	2.23	1.00	40	0.125	0.542	1.29	1.11	7	1.39	0.81	44	0.101	0.774
PCM	56.37	20.44	51	52.27	19.63	44	-4.100	0.323	35.42	21.42	9	44.03	16.89	44	8.617	0.189
innpc_ch	2.42	0.91	50	2.33	0.84	39	-0.087	0.645	2.00	0.76	8	1.93	0.87	44	-0.068	0.837
inntec_ch	2.32	1.17	50	2.25	0.87	40	-0.070	0.753	1.75	1.28	8	1.89	0.97	44	0.136	0.729
adv_ch	2.08	1.05	50	2.17	0.85	42	0.087	0.668	1.25	1.04	8	1.45	0.87	44	0.205	0.557
infec_ch	2.38	0.85	50	2.29	0.99	42	-0.094	0.626	1.38	0.92	8	1.77	0.89	44	0.398	0.250
FE	59.80	21.00	51	65.91	20.32	44	6.105	0.155	43.52	19.44	9	56.25	17.80	44	12.732	0.060
innop_ch	2.71	1.05	48	3.08	0.66	40	0.367	0.059	2.00	0.93	8	2.41	1.06	44	0.409	0.313
fcpln_ch	2.29	1.06	49	2.56	1.03	41	0.275	0.217	1.50	1.20	8	2.07	1.19	44	0.568	0.220
fund_ch	2.48	0.91	50	2.79	0.77	43	0.311	0.082	2.38	0.92	8	2.27	0.97	44	-0.102	0.784
CE	44.91	15.46	51	44.89	18.17	44	-0.028	0.994	39.24	12.70	9	38.07	15.03	44	-1.168	0.829
cag_ch	1.60	0.83	50	1.68	0.99	41	0.083	0.665	1.22	0.97	9	1.58	1.12	43	0.359	0.375
demo_ch	2.17	1.11	47	2.56	0.79	39	0.394	0.066	2.11	1.05	9	1.58	1.14	43	-0.530	0.205
hc_ch	1.83	0.82	47	1.59	1.02	41	-0.244	0.217	1.57	0.53	7	1.61	1.06	44	0.042	0.919
right_ch	1.70	0.86	47	1.66	1.04	41	-0.044	0.830	1.63	1.06	8	1.07	0.85	44	-0.557	0.106
pegov_ch	1.72	0.93	47	1.61	0.97	41	-0.114	0.576	1.75	1.04	8	1.34	0.91	44	-0.409	0.259
pr_ch	1.92	0.89	49	1.93	0.93	41	0.008	0.965	1.63	1.06	8	1.32	0.88	44	-0.307	0.385
ptsat_ch	2.16	0.87	50	2.36	0.85	42	0.197	0.276	1.57	0.98	7	1.95	0.91	44	0.383	0.312
poph_ch	2.13	1.02	48	2.21	0.86	39	0.080	0.698	2.63	1.30	8	1.80	1.29	44	-0.830	0.100
SIP	41.53	16.33	51	39.94	19.15	44	-1.592	0.663	32.54	19.35	9	30.03	16.36	44	-2.507	0.686
collab_ch	2.04	1.02	49	1.60	1.10	40	-0.441	0.054	1.44	0.88	9	1.16	0.94	44	-0.285	0.406
acad_ch	1.79	0.93	47	2.00	0.99	42	0.213	0.299	1.44	1.13	9	1.09	0.83	44	-0.354	0.279
vint_ch	2.33	0.94	40	2.41	0.78	29	0.089	0.680	2.13	0.64	8	2.23	1.05	40	0.100	0.797
regn_ch	2.53	1.10	47	2.77	1.01	39	0.237	0.305	2.75	1.28	8	2.10	1.03	42	-0.655	0.120
gov_ch	2.73	0.95	49	2.68	1.08	41	-0.052	0.810	1.38	1.06	8	1.53	0.85	43	0.160	0.642
voltr_ch	1.92	0.90	50	1.85	1.12	40	-0.070	0.743	1.13	0.99	8	1.14	0.91	43	0.015	0.968
hint_ch	2.58	0.89	45	2.59	0.91	39	0.012	0.952	2.25	1.49	8	1.98	0.96	41	-0.274	0.505
CGM	38.89	18.74	51	38.54	19.98	44	-0.347	0.931	27.78	20.62	9	26.42	19.75	44	-1.357	0.853
smsuc_ch	1.94	0.87	50	1.74	0.82	43	-0.196	0.268	1.75	1.04	8	1.49	1.03	43	-0.262	0.514
smprf_ch	1.31	1.01	48	1.38	1.08	42	0.068	0.757	0.88	0.83	8	0.77	0.97	43	-0.108	0.771
smed_ch	1.67	0.92	49	1.69	1.00	42	0.017	0.933	1.00	1.20	8	1.19	1.03	43	0.186	0.649
brdsuc_ch	1.78	0.95	50	1.74	0.93	43	-0.036	0.855	1.38	1.06	8	1.19	0.93	43	-0.189	0.608
brdprf_ch	1.38	0.90	50	1.43	1.02	42	0.049	0.809	1.25	1.04	8	0.93	1.01	43	-0.320	0.416
brded_ch	1.55	0.87	49	1.58	1.12	43	0.030	0.884	1.25	1.04	8	0.93	0.91	43	-0.320	0.376
IIDM	63.50	17.18	50	54.20	22.20	44	-9.295	0.025	46.67	19.20	9	47.39	17.47	44	0.720	0.912
prfqal_ch	2.39	0.89	49	2.17	0.96	42	-0.221	0.257	1.33	0.87	9	1.53	0.80	43	0.202	0.500
prfacc_ch	2.51	0.89	49	2.24	0.93	42	-0.272	0.159	1.44	1.01	9	1.56	0.85	43	0.114	0.726
cpdss_ch	2.52	0.92	48	2.46	0.87	37	-0.061	0.756	1.88	0.83	8	1.79	0.97	43	-0.084	0.818
cldss_ch	2.62	0.88	50	2.28	1.06	40	-0.345	0.095	2.38	0.52	8	2.14	0.91	43	-0.235	0.485
ehr_ch	2.86	0.78	50	2.62	0.91	42	-0.241	0.175	3.13	0.83	8	2.67	0.78	43	-0.451	0.143

Table F.4 ANOVA results comparing small community hospitals that responded in both 2004 and 2011 to small community hospitals that responded in only 2004 or only 2011 (*articulation*)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	73.86	27.25	22	50.00	38.73	6	-23.86	0.094	54.17	18.82	6	83.33	30.28	6	29.167	0.073
rec_art	0.95	0.22	20	0.67	0.52	6	-0.283	0.060	1.00	0.00	6	0.83	0.41	6	-0.167	0.341
clsuc_art	0.55	0.51	20	0.33	0.52	6	-0.217	0.372	0.20	0.45	5	0.83	0.41	6	0.633	0.036
inj_art	0.74	0.45	19	0.60	0.55	5	-0.137	0.569	0.67	0.52	6	1.00	0.00	6	0.333	0.145
lab_art	0.79	0.42	19	0.60	0.55	5	-0.189	0.406	0.40	0.55	5	0.67	0.52	6	0.267	0.428
PCM	76.14	31.32	22	41.67	30.28	6	-34.47	0.024	54.17	29.23	6	83.33	20.41	6	29.167	0.073
innpc_art	0.85	0.37	20	0.67	0.52	6	-0.183	0.337	0.80	0.45	5	1.00	0.00	6	0.200	0.297
inntec_art	0.63	0.50	19	0.00	0.00	6	-0.632	0.005	0.20	0.45	5	0.67	0.52	6	0.467	0.148
adv_s_art	0.70	0.47	20	0.33	0.52	6	-0.367	0.114	1.00	0.00	5	0.83	0.41	6	-0.167	0.389
infec_art	0.80	0.41	20	0.67	0.52	6	-0.133	0.516	0.60	0.55	5	0.83	0.41	6	0.233	0.438
FE	86.36	28.47	22	50.00	40.82	6	-36.36	0.018	50.00	27.89	6	83.33	27.89	6	33.333	0.065
innop_art	0.85	0.37	20	0.67	0.52	6	-0.183	0.337	0.60	0.55	5	1.00	0.00	6	0.400	0.104
fcpln_art	0.90	0.31	20	0.50	0.55	6	-0.400	0.029	0.83	0.41	6	0.83	0.41	6	0.000	1.000
fund_art	0.80	0.41	20	0.33	0.52	6	-0.467	0.030	0.20	0.45	5	0.67	0.52	6	0.467	0.148
CE	76.70	23.56	22	50.00	36.23	6	-26.70	0.038	54.17	27.00	6	79.17	12.91	6	25.000	0.068
cag_art	0.63	0.50	19	0.33	0.52	6	-0.298	0.216	0.50	0.55	6	0.67	0.52	6	0.167	0.599
demo_art	0.90	0.31	20	0.33	0.52	6	-0.567	0.003	0.50	0.55	6	1.00	0.00	6	0.500	0.049
hc_art	0.84	0.37	19	0.67	0.52	6	-0.175	0.370	0.60	0.55	5	1.00	0.00	6	0.400	0.104
right_art	0.68	0.48	19	0.67	0.52	6	-0.018	0.939	0.20	0.45	5	0.83	0.41	6	0.633	0.036
pegov_art	0.74	0.45	19	0.50	0.55	6	-0.237	0.298	0.60	0.55	5	0.67	0.52	6	0.067	0.840
pr_art	0.85	0.37	20	0.50	0.55	6	-0.350	0.080	0.80	0.45	5	0.83	0.41	6	0.033	0.900
ptsat_art	0.90	0.31	20	0.67	0.52	6	-0.233	0.178	1.00	0.00	5	1.00	0.00	6	0.000	
poph_art	0.70	0.47	20	0.33	0.52	6	-0.367	0.114	0.80	0.45	5	0.33	0.52	6	-0.467	0.148
SIP	75.32	28.29	22	45.24	33.09	6	-30.09	0.034	47.62	28.09	6	71.43	15.65	6	23.810	0.100
collab_art	0.79	0.42	19	0.33	0.52	6	-0.456	0.038	0.50	0.55	6	0.83	0.41	6	0.333	0.260
acad_art	0.70	0.47	20	0.60	0.55	5	-0.100	0.684	0.67	0.52	6	0.50	0.55	6	-0.167	0.599
vint_art	0.75	0.44	20	0.60	0.55	5	-0.150	0.524	1.00	0.00	5	0.83	0.41	6	-0.167	0.389
regn_art	0.65	0.49	20	0.17	0.41	6	-0.483	0.038	0.40	0.55	5	0.50	0.55	6	0.100	0.770
gov_art	0.83	0.38	18	0.60	0.55	5	-0.233	0.284	0.40	0.55	5	0.83	0.41	6	0.433	0.166
voltr_art	0.80	0.41	20	0.80	0.45	5	0.000	1.000	0.40	0.55	5	0.67	0.52	6	0.267	0.428
hint_art	0.85	0.37	20	0.60	0.55	5	-0.250	0.228	0.40	0.55	5	0.83	0.41	6	0.433	0.166
CGM	75.76	26.59	22	50	39.44	6	-25.76	0.069	27.78	31.03	6	55.56	38.97	6	27.778	0.202
smsuc_art	0.55	0.51	20	0.50	0.55	6	-0.050	0.838	0.00	0.00	5	0.67	0.52	6	0.667	0.019
smprf_art	1.00	0.00	14	0.80	0.45	5	-0.200	0.095	0.40	0.55	5	0.50	0.55	6	0.100	0.770
smed_art	0.85	0.37	20	0.60	0.55	5	-0.250	0.228	0.40	0.55	5	0.50	0.55	6	0.100	0.770
brdsuc_art	0.85	0.37	20	0.50	0.55	6	-0.350	0.080	0.40	0.55	5	0.33	0.52	6	-0.067	0.840
brdprf_art	0.60	0.50	20	0.33	0.52	6	-0.267	0.268	0.20	0.45	5	0.67	0.52	6	0.467	0.148
brded_art	0.95	0.22	20	0.60	0.55	5	-0.350	0.032	0.60	0.55	5	0.67	0.52	6	0.067	0.840
IIDM	76.36	28.71	22	43.33	34.45	6	-33.03	0.024	56.67	23.38	6	66.67	41.31	6	10.000	0.617
prfqal_art	0.90	0.31	20	0.67	0.52	6	-0.233	0.178	0.83	0.41	6	0.83	0.41	6	0.000	1.000
prfacc_art	0.80	0.41	20	0.83	0.41	6	0.033	0.863	0.67	0.52	6	0.83	0.41	6	0.167	0.549
cpdss_art	0.70	0.47	20	0.17	0.41	6	-0.533	0.020	0.20	0.45	5	0.60	0.55	5	0.400	0.242
clsdss_art	0.75	0.44	20	0.17	0.41	6	-0.583	0.008	0.40	0.55	5	0.60	0.55	5	0.200	0.580
ehr_art	0.65	0.49	20	0.33	0.52	6	-0.317	0.182	1.00	0.00	5	0.80	0.45	5	-0.200	0.347

Table F.5 ANOVA results comparing small community hospitals that responded in both 2004 and 2011 to small community hospitals that responded in only 2004 or only 2011 (importance)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	76.89	16.45	22	68.06	27.60	6	-8.838	0.324	62.50	17.28	6	84.72	12.27	6	22.222	0.028
rec_imp	2.85	0.37	20	2.67	0.82	6	-0.183	0.434	2.50	0.55	6	3.00	0.00	6	0.500	0.049
clsuc_imp	1.95	1.00	20	1.60	1.34	5	-0.350	0.518	2.00	0.71	5	2.50	0.84	6	0.500	0.318
inj_imp	2.05	0.83	20	2.50	0.84	6	0.450	0.254	2.00	0.63	6	2.17	0.75	6	0.167	0.687
lab_imp	2.45	0.69	20	2.50	0.58	4	0.050	0.893	1.60	0.55	5	2.50	0.55	6	0.900	0.024
PCM	81.44	20.07	22	70.83	22.82	6	-10.606	0.275	55.56	31.03	6	87.50	11.49	6	31.944	0.040
innpc_imp	2.50	0.76	20	2.67	0.52	6	0.167	0.622	1.80	1.10	5	2.67	0.82	6	0.867	0.166
inntec_imp	2.11	0.99	19	1.80	1.30	5	-0.305	0.571	1.40	0.55	5	2.50	0.55	6	1.100	0.009
adv_imp	2.45	0.69	20	2.00	0.89	6	-0.450	0.201	2.40	0.55	5	2.50	0.84	6	0.100	0.824
infec_imp	2.60	0.60	20	2.33	1.03	6	-0.267	0.428	2.40	0.89	5	2.83	0.41	6	0.433	0.313
FE	81.31	23.10	22	77.78	21.08	6	-3.535	0.738	55.56	22.22	6	90.74	14.77	6	35.185	0.009
innop_imp	2.55	0.69	20	3.00	0.00	6	0.450	0.126	2.20	0.45	5	2.67	0.52	6	0.467	0.148
fcpln_imp	2.30	0.92	20	2.20	0.84	5	-0.100	0.828	1.50	1.05	6	2.83	0.41	6	1.333	0.016
fund_imp	2.58	0.77	19	2.60	0.55	5	0.021	0.955	2.00	0.71	5	2.67	0.52	6	0.667	0.104
CE	78.86	16.53	22	74.31	18.52	6	0.442	0.955	53.47	19.62	6	75.69	22.27	6	22.222	0.097
cag_imp	2.00	0.65	20	2.00	0.63	6	0.000	1.000	1.33	0.52	6	2.17	0.75	6	0.833	0.049
demo_imp	2.55	0.76	20	2.40	0.55	5	-0.150	0.684	2.17	0.41	6	2.50	0.55	6	0.333	0.260
hc_imp	2.21	0.79	19	2.33	0.82	6	0.123	0.744	1.60	0.55	5	2.33	0.82	6	0.733	0.122
right_imp	2.16	0.69	19	2.50	0.55	6	0.342	0.280	1.20	0.45	5	2.33	0.82	6	1.133	0.022
pegov_imp	2.16	0.60	19	2.20	0.84	5	0.042	0.899	2.20	0.84	5	2.33	0.82	6	0.133	0.796
pr_imp	2.30	0.73	20	2.00	0.89	6	-0.300	0.410	2.20	0.84	5	1.83	1.17	6	-0.367	0.573
ptsat_imp	2.45	0.69	20	2.67	0.82	6	0.217	0.521	2.25	0.50	4	2.67	0.52	6	0.417	0.242
poph_imp	2.15	0.75	20	2.50	0.55	6	0.350	0.299	2.20	0.84	5	2.00	0.89	6	-0.200	0.713
SIP	75.76	21.34	22	55.56	31.10	6	-20.202	0.074	57.14	30.57	6	75.40	10.61	6	18.254	0.197
collab_imp	1.95	1.00	20	1.80	1.30	5	-0.150	0.779	1.80	0.84	5	2.50	0.84	6	0.700	0.200
acad_imp	2.37	0.90	19	2.20	0.84	5	-0.168	0.709	2.00	0.71	5	2.50	0.84	6	0.500	0.318
vint_imp	2.35	0.79	17	3.00	0.00	4	0.647	0.123	3.00	0.00	5	3.00	0.00	5	0.000	
regn_imp	2.32	0.58	19	1.60	0.89	5	-0.716	0.039	1.60	0.55	5	1.67	0.82	6	0.067	0.880
gov_imp	2.65	0.59	20	2.50	0.58	4	-0.150	0.645	1.75	0.96	4	2.17	0.98	6	0.417	0.526
voltr_imp	2.50	0.76	20	2.80	0.45	5	0.300	0.411	2.00	0.00	4	2.50	0.55	6	0.500	0.111
hint_imp	2.32	0.67	19	2.00	1.00	3	-0.316	0.483	3.00	0.00	5	2.40	0.55	5	-0.600	0.040
CGM	70.45	21.09	22	72.22	26.76	6	1.767	0.865	59.26	30.56	6	84.26	18.73	6	25.000	0.118
smsuc_imp	2.10	0.91	20	2.00	1.26	6	-0.100	0.831	2.40	0.55	5	2.83	0.41	6	0.433	0.166
smprf_imp	2.00	0.73	20	2.17	0.75	6	0.167	0.629	2.00	0.71	5	2.67	0.52	6	0.667	0.104
smed_imp	2.15	0.75	20	2.17	0.75	6	0.017	0.962	2.00	0.00	5	2.50	0.84	6	0.500	0.218
brdsuc_imp	2.15	0.88	20	2.50	0.55	6	0.350	0.367	2.40	0.55	5	2.33	0.82	6	-0.067	0.880
brdprf_imp	1.75	0.91	20	2.00	1.26	6	0.250	0.594	1.80	0.45	5	2.50	0.55	6	0.700	0.048
brded_imp	2.10	0.64	20	2.17	0.75	6	0.067	0.831	2.20	0.45	5	2.33	0.82	6	0.133	0.753
IIDM	79.09	21.51	22	53.33	28.60	6	-25.758	0.022	70.00	25.21	6	83.33	13.17	6	13.333	0.278
prfqal_imp	2.55	0.69	20	2.17	1.17	6	-0.383	0.320	2.50	0.55	6	2.50	0.55	6	0.000	1.000
prfacc_imp	2.58	0.61	19	2.00	1.26	6	-0.579	0.135	2.33	0.52	6	2.50	0.55	6	0.167	0.599
cpdss_imp	2.21	1.03	19	1.50	1.29	4	-0.711	0.242	1.60	1.14	5	2.33	0.82	6	0.733	0.245
clsdss_imp	2.25	0.91	20	1.50	1.29	4	-0.750	0.173	2.20	0.45	5	2.80	0.45	5	0.600	0.067
ehr_imp	2.30	0.80	20	2.20	1.30	5	-0.100	0.828	3.00	0.00	5	2.83	0.41	6	-0.167	0.389

Table F.6 ANOVA results comparing small community hospitals that responded in both 2004 and 2011 to small community hospitals that responded in only 2004 or only 2011 (challenge)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	52.56	15.51	22	44.79	20.32	6	-7.765	0.318	33.33	8.54	6	57.29	10.01	6	23.958	0.001
rec_ch	3.05	0.69	20	3.00	1.55	6	-0.050	0.909	1.83	0.98	6	3.33	0.52	6	1.500	0.008
clsuc_ch	1.85	1.04	20	1.20	0.84	5	-0.650	0.210	1.40	0.55	5	2.17	0.75	6	0.767	0.091
inj_ch	1.70	0.98	20	2.17	0.98	6	0.467	0.316	1.67	0.52	6	2.17	0.75	6	0.500	0.209
lab_ch	1.90	0.79	20	1.50	0.58	4	-0.400	0.349	0.80	0.84	5	1.50	0.55	6	0.700	0.129
PCM	53.98	20.19	22	37.50	17.68	6	-16.477	0.081	35.42	24.58	6	36.46	7.31	6	1.042	0.923
innpc_ch	2.05	1.05	20	1.67	1.21	6	-0.383	0.455	2.20	0.84	5	1.67	0.52	6	-0.533	0.226
inntec_ch	2.20	1.11	20	1.60	0.89	5	-0.600	0.274	2.00	1.58	5	1.83	0.75	6	-0.167	0.823
adv_s_ch	2.10	1.02	20	1.50	0.84	6	-0.600	0.203	1.20	0.84	5	1.00	0.00	6	-0.200	0.568
infec_ch	2.35	0.93	20	1.50	1.22	6	-0.850	0.081	1.40	1.14	5	1.33	1.03	6	-0.067	0.921
FE	60.23	22.26	22	52.78	13.61	6	-7.450	0.445	41.67	21.73	6	56.94	16.17	6	15.278	0.197
innop_ch	2.60	1.23	20	2.67	1.03	6	0.067	0.905	1.80	0.84	5	2.17	1.33	6	0.367	0.607
fcpln_ch	2.15	1.18	20	2.00	1.22	5	-0.150	0.803	1.33	1.21	6	2.17	0.98	6	0.833	0.220
fund_ch	2.45	1.00	20	2.00	0.89	6	-0.450	0.333	2.60	0.89	5	2.50	1.05	6	-0.100	0.870
CE	43.47	15.37	22	37.50	17.00	6	-5.966	0.417	38.54	14.34	6	45.31	16.62	6	6.771	0.467
cag_ch	1.55	0.76	20	1.67	0.82	6	0.117	0.748	1.33	1.03	6	2.33	1.51	6	1.000	0.209
demo_ch	2.26	1.15	19	2.80	0.45	5	0.537	0.322	2.33	1.03	6	2.17	1.17	6	-0.167	0.799
hc_ch	1.47	0.84	19	1.17	0.75	6	-0.307	0.434	1.60	0.55	5	2.00	1.55	6	0.400	0.599
right_ch	1.33	0.84	18	1.17	0.75	6	-0.167	0.671	1.40	1.14	5	1.50	0.84	6	0.100	0.870
pegov_ch	1.53	0.96	19	1.00	0.63	6	-0.526	0.226	2.20	0.84	5	1.83	0.98	6	-0.367	0.527
pr_ch	1.95	0.89	20	1.17	0.75	6	-0.783	0.062	1.40	1.14	5	1.00	0.89	6	-0.400	0.530
ptsat_ch	2.00	0.92	20	1.67	1.21	6	-0.333	0.475	1.25	0.96	4	1.50	1.05	6	0.250	0.713
poph_ch	2.21	1.08	19	2.20	1.10	5	-0.011	0.985	2.80	1.30	5	2.17	1.47	6	-0.633	0.474
SIP	40.42	17.92	22	30.95	14.40	6	-9.470	0.245	30.36	23.12	6	48.81	23.11	6	18.452	0.197
collab_ch	1.70	1.03	20	1.00	1.73	5	-0.700	0.249	1.33	1.03	6	1.67	1.51	6	0.333	0.664
acad_ch	1.63	0.90	19	0.80	0.45	5	-0.832	0.059	1.33	1.37	6	1.67	1.37	6	0.333	0.682
vint_ch	2.00	1.10	16	2.00	1.00	3	0.000	1.000	2.40	0.55	5	2.60	1.14	5	0.200	0.733
regn_ch	2.67	1.08	18	3.00	0.71	5	0.333	0.526	2.60	1.14	5	2.00	0.89	6	-0.600	0.353
gov_ch	2.50	0.95	20	2.00	1.41	4	-0.500	0.382	1.20	1.30	5	1.50	0.55	6	0.300	0.618
voltr_ch	1.90	1.02	20	1.20	1.10	5	-0.700	0.189	1.20	1.30	5	2.33	0.82	6	1.133	0.112
hint_ch	2.42	0.90	19	2.67	1.15	3	0.246	0.675	2.40	1.52	5	2.20	0.84	5	-0.200	0.803
CGM	41.10	17.27	22	33.33	15.81	6	-7.765	0.330	25.69	22.89	6	47.22	22.62	6	21.528	0.132
smsuc_ch	1.85	0.81	20	1.17	0.75	6	-0.683	0.079	2.00	1.00	5	2.00	0.89	6	0.000	1.000
smprf_ch	1.45	1.00	20	0.67	0.52	6	-0.783	0.080	0.80	0.84	5	1.17	1.17	6	0.367	0.573
smed_ch	1.80	0.95	20	1.33	0.52	6	-0.467	0.265	1.00	1.41	5	1.83	0.98	6	0.833	0.279
brdsuc_ch	1.90	0.91	20	1.83	1.17	6	-0.067	0.884	1.40	1.14	5	2.33	1.21	6	0.933	0.224
brdprf_ch	1.25	0.85	20	1.17	1.47	6	-0.083	0.861	0.80	0.84	5	2.17	0.98	6	1.367	0.037
brded_ch	1.84	0.69	19	1.83	1.17	6	-0.009	0.982	1.40	1.14	5	1.83	0.98	6	0.433	0.515
IIDM	59.32	19.04	22	34.17	20.84	6	-25.152	0.009	46.67	24.01	6	61.67	10.80	6	15.000	0.193
prfqal_ch	2.25	0.91	20	1.50	1.38	6	-0.750	0.129	1.33	0.82	6	1.83	0.75	6	0.500	0.296
prfacc_ch	2.35	0.93	20	1.33	1.51	6	-1.017	0.054	1.50	1.05	6	2.00	0.63	6	0.500	0.341
cpdss_ch	2.33	1.03	18	1.40	0.89	5	-0.933	0.080	1.80	1.10	5	2.67	0.82	6	0.867	0.166
cldss_ch	2.25	1.07	20	1.40	0.89	5	-0.850	0.116	2.60	0.55	5	2.83	0.41	6	0.233	0.438
ehr_ch	2.65	0.99	20	2.00	1.00	5	-0.650	0.202	3.40	0.55	5	3.00	0.63	6	-0.400	0.297

Table F.7 ANOVA results comparing large community hospitals that responded in both 2004 and 2011 to large community hospitals that responded in only 2004 or only 2011 (*articulation*)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	68.27	26.98	26	75.00	29.88	29	6.731	0.387	12.50	17.68	2	65.52	26.23	29	53.017	0.009
rec_art	0.93	0.26	28	0.90	0.31	29	-0.032	0.676	0.00	0.00	2	0.93	0.26	29	0.931	<0.0001
clsuc_art	0.54	0.51	26	0.64	0.49	28	0.104	0.445	0.00	0.00	2	0.55	0.51	29	0.552	0.140
inj_art	0.74	0.45	27	0.83	0.38	29	0.087	0.438	0.50	0.71	2	0.79	0.41	29	0.293	0.354
lab_art	0.63	0.49	27	0.66	0.48	29	0.026	0.845	0.00	0.00	2	0.34	0.48	29	0.345	0.329
PCM	72.12	29.43	26	75.00	32.73	29	2.885	0.734	37.50	17.68	2	75.86	24.53	29	38.362	0.039
innpc_art	1.00	0.00	27	0.86	0.36	28	-0.143	0.042	0.50	0.71	2	0.90	0.31	29	0.397	0.113
inntec_art	0.65	0.49	26	0.69	0.47	29	0.036	0.782	0.00	0.00	2	0.55	0.51	29	0.552	0.140
adv_s_art	0.73	0.45	26	0.75	0.44	28	0.019	0.875	0.00	0.00	2	0.83	0.38	29	0.828	0.006
infec_art	0.74	0.45	27	0.79	0.42	28	0.045	0.701	1.00	0.00	2	0.76	0.44	29	-0.241	0.447
FE	74.36	33.08	26	77.01	32.25	29	2.653	0.765	33.33	0.00	2	67.82	30.19	29	34.483	0.123
innop_art	0.78	0.42	27	0.79	0.42	28	0.008	0.945	1.00	0.00	2	0.93	0.26	29	-0.069	0.712
fcpln_art	0.89	0.32	27	0.93	0.26	28	0.040	0.617	0.00	0.00	2	0.72	0.45	29	0.724	0.035
fund_art	0.70	0.47	27	0.66	0.48	29	-0.049	0.704	0.00	0.00	2	0.38	0.49	29	0.379	0.294
CE	73.56	27.23	26	73.71	24.63	29	0.149	0.983	43.75	44.19	2	71.55	20.57	29	27.802	0.092
cag_art	0.67	0.48	27	0.62	0.49	29	-0.046	0.726	0.00	0.00	2	0.59	0.50	29	0.586	0.114
demo_art	0.88	0.33	26	0.93	0.26	28	0.044	0.586	0.50	0.71	2	0.79	0.41	29	0.293	0.354
hc_art	0.77	0.43	26	0.86	0.36	28	0.088	0.416	0.50	0.71	2	0.69	0.47	29	0.190	0.594
right_art	0.70	0.47	27	0.57	0.50	28	-0.132	0.317	0.00	0.00	2	0.72	0.45	29	0.724	0.035
pegov_art	0.69	0.47	26	0.61	0.50	28	-0.085	0.522	0.50	0.71	2	0.83	0.38	29	0.328	0.272
pr_art	0.74	0.45	27	0.79	0.42	28	0.045	0.701	0.50	0.71	2	0.59	0.50	29	0.086	0.819
ptsat_art	1.00	0.00	26	0.86	0.36	28	-0.143	0.046	1.00	0.00	2	1.00	0.00	29	0.000	
poph_art	0.85	0.37	26	0.86	0.36	28	0.011	0.912	0.50	0.71	2	0.52	0.51	29	0.017	0.964
SIP	71.98	29.55	26	77.34	24.00	29	5.362	0.461	14.29	20.20	2	62.07	28.90	29	47.783	0.030
collab_art	0.73	0.45	26	0.86	0.35	29	0.131	0.232	0.00	0.00	2	0.62	0.49	29	0.621	0.091
acad_art	0.80	0.41	25	0.74	0.45	27	-0.059	0.621	0.00	0.00	2	0.72	0.45	29	0.724	0.035
vint_art	0.81	0.40	26	0.81	0.40	27	0.007	0.948	0.00	0.00	2	0.90	0.31	29	0.897	<0.0001
regn_art	0.65	0.49	26	0.71	0.46	28	0.060	0.640	0.00	0.00	2	0.68	0.48	28	0.679	0.057
gov_art	0.72	0.46	25	0.82	0.39	28	0.101	0.388	0.50	0.71	2	0.31	0.47	29	-0.190	0.594
voltr_art	0.81	0.40	27	0.70	0.47	27	-0.111	0.349	0.50	0.71	2	0.45	0.51	29	-0.052	0.892
hint_art	1.00	0.00	25	0.97	0.19	29	-0.034	0.358	0.00	0.00	1	0.71	0.46	28	0.714	0.139
CGM	71.79	32.92	26	58.05	39.74	29	-13.75	0.171	0.00	0.00	2	48.28	43.72	29	48.276	0.135
smsuc_art	0.70	0.47	27	0.62	0.49	29	-0.083	0.521	0.00	0.00	2	0.45	0.51	29	0.448	0.227
smprf_art	0.92	0.28	24	0.86	0.35	22	-0.053	0.574	0.00	0.00	2	0.62	0.49	29	0.621	0.091
smed_art	0.85	0.36	27	0.48	0.51	29	-0.369	0.003	0.00	0.00	2	0.48	0.51	29	0.483	0.197
brdsuc_art	0.82	0.39	28	0.64	0.49	28	-0.179	0.136	0.00	0.00	2	0.41	0.50	29	0.414	0.260
brdprf_art	0.52	0.51	27	0.50	0.51	28	-0.019	0.893	0.00	0.00	2	0.48	0.51	29	0.483	0.197
brded_art	0.75	0.44	28	0.64	0.49	28	-0.107	0.392	0.00	0.00	2	0.45	0.51	29	0.448	0.227
IIDM	81.54	28.24	26	80.69	29.99	29	-0.849	0.915	70.00	42.43	2	77.24	30.11	29	7.241	0.749
prfqal_art	1.00	0.00	27	0.96	0.19	28	-0.036	0.331	1.00	0.00	2	0.93	0.26	29	-0.069	0.712
prfacc_art	0.96	0.19	27	0.82	0.39	28	-0.142	0.096	1.00	0.00	2	0.93	0.26	29	-0.069	0.712
cpdss_art	0.78	0.42	27	0.76	0.44	29	-0.019	0.868	0.50	0.71	2	0.66	0.48	29	0.155	0.670
cldss_art	0.74	0.45	27	0.72	0.45	29	-0.017	0.891	0.50	0.71	2	0.64	0.49	28	0.143	0.698
ehr_art	0.74	0.45	27	0.83	0.38	29	0.087	0.438	0.50	0.71	2	0.72	0.45	29	0.224	0.516

Table F.8 ANOVA results comparing large community hospitals that responded in both 2004 and 2011 to large community hospitals that responded in only 2004 or only 2011 (importance)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	80.77	18.52	26	79.89	19.61	29	-0.884	0.865	66.67	23.57	2	74.40	12.20	28	7.738	0.415
rec_imp	2.93	0.26	28	2.96	0.19	28	0.036	0.561	2.00	0.00	2	2.57	0.57	28	0.571	0.176
clsuc_imp	2.15	0.72	27	2.50	0.58	28	0.352	0.050	1.50	0.71	2	2.50	0.58	28	1.000	0.026
inj_imp	2.33	0.62	27	2.25	0.80	28	-0.083	0.668	2.50	0.71	2	2.18	0.67	28	-0.321	0.518
lab_imp	2.44	0.58	27	2.30	0.78	27	-0.148	0.429	2.00	1.41	2	1.74	0.76	27	-0.259	0.661
PCM	76.28	23.06	26	80.36	26.28	28	4.075	0.549	87.50	5.89	2	79.31	14.37	29	-8.190	0.435
innpc_imp	2.77	0.43	26	2.84	0.37	25	0.071	0.534	2.50	0.71	2	2.62	0.62	29	0.121	0.794
inntec_imp	2.00	1.07	27	2.22	0.89	27	0.222	0.412	2.00	0.00	2	1.86	0.88	29	-0.138	0.828
adv_imp	2.37	0.79	27	2.56	0.70	27	0.185	0.366	3.00	0.00	2	2.48	0.63	29	-0.517	0.265
infec_imp	2.67	0.48	27	2.78	0.42	27	0.111	0.372	3.00	0.00	2	2.55	0.63	29	-0.448	0.331
FE	74.22	27.73	25	82.38	25.81	29	8.153	0.268	66.67	15.71	2	80.46	15.04	29	13.793	0.220
innop_imp	2.60	0.76	25	2.81	0.40	26	0.208	0.228	3.00	0.00	2	2.62	0.62	29	-0.379	0.403
fcpln_imp	2.52	0.71	25	2.58	0.64	26	0.057	0.766	1.50	0.71	2	2.31	0.81	29	0.810	0.178
fund_imp	2.68	0.48	22	2.78	0.42	27	0.096	0.460	1.50	0.71	2	2.31	0.85	29	0.810	0.200
CE	69.39	20.31	26	68.97	22.34	29	-0.426	0.942	58.33	17.68	2	68.53	17.31	29	10.201	0.427
cag_imp	1.75	0.89	28	2.04	0.81	27	0.287	0.216	1.50	0.71	2	1.93	0.72	28	0.429	0.420
demo_imp	2.31	0.68	26	2.69	0.47	26	0.385	0.022	1.50	0.71	2	2.29	0.90	28	0.786	0.238
hc_imp	2.31	0.62	26	2.35	0.80	26	0.038	0.847	1.50	0.71	2	2.03	0.73	29	0.534	0.325
right_imp	2.15	0.60	27	1.92	0.76	25	-0.228	0.234	2.00	0.00	2	1.93	0.92	29	-0.069	0.918
pegov_imp	2.08	0.69	26	2.04	0.73	25	-0.037	0.854	1.00	0.00	2	1.97	0.94	29	0.966	0.165
pr_imp	2.27	0.83	26	2.27	0.72	26	0.000	1.000	1.50	0.71	2	1.90	0.94	29	0.397	0.565
ptsat_imp	2.59	0.64	27	2.70	0.54	27	0.111	0.493	3.00	0.00	2	2.79	0.49	29	-0.207	0.562
poph_imp	2.31	0.74	26	2.42	0.58	26	0.115	0.532	2.00	1.41	2	1.76	0.74	29	-0.241	0.672
SIP	74.91	19.87	26	77.83	19.60	29	2.924	0.585	52.38	13.47	2	71.10	14.67	29	18.719	0.091
collab_imp	2.07	0.87	27	2.29	0.76	28	0.212	0.342	1.50	0.71	2	1.97	0.94	29	0.466	0.502
acad_imp	2.42	0.64	26	2.29	0.71	28	-0.137	0.462	1.50	0.71	2	2.24	0.83	29	0.741	0.230
vint_imp	2.76	0.44	25	2.56	0.71	25	-0.200	0.237	1.50	0.71	2	2.68	0.48	28	1.179	0.003
regn_imp	2.23	0.82	26	2.30	0.87	27	0.066	0.778	2.00	0.00	1	2.32	0.82	28	0.321	0.703
gov_imp	2.73	0.45	26	2.79	0.50	28	0.055	0.674	2.00	0.00	2	1.90	0.56	29	-0.103	0.798
voltr_imp	2.41	0.64	27	2.58	0.64	26	0.170	0.339	2.00	0.00	2	1.86	0.92	29	-0.138	0.835
hint_imp	2.70	0.47	23	2.78	0.42	27	0.082	0.519	1.50	0.71	2	2.14	0.88	29	0.638	0.324
CGM	70.73	19.47	26	68.01	24.65	29	-2.719	0.654	66.67	23.57	2	70.31	17.83	29	3.640	0.785
smsuc_imp	2.21	0.69	28	2.29	0.76	28	0.071	0.714	2.00	0.00	2	2.03	0.63	29	0.034	0.939
smprf_imp	2.32	0.67	28	2.15	0.86	27	-0.173	0.409	1.50	0.71	2	2.34	0.61	29	0.845	0.071
smed_imp	2.26	0.71	27	2.00	0.68	27	-0.259	0.177	1.50	0.71	2	2.03	0.73	29	0.534	0.325
brdsuc_imp	2.32	0.82	28	2.32	0.77	28	0.000	1.000	2.50	0.71	2	2.03	0.78	29	-0.466	0.419
brdprf_imp	1.82	0.82	28	1.96	0.88	28	0.143	0.532	2.00	1.41	2	2.10	0.77	29	0.103	0.861
brded_imp	2.18	0.82	28	2.11	0.69	28	-0.071	0.725	2.50	0.71	2	2.10	0.72	29	-0.397	0.460
IIDM	84.36	22.15	26	80.92	26.77	29	-3.439	0.608	93.33	9.43	2	83.22	13.41	29	-10.115	0.306
prfqal_imp	2.73	0.53	26	2.70	0.54	27	-0.027	0.855	3.00	0.00	2	2.66	0.48	29	-0.345	0.329
prfacc_imp	2.77	0.43	26	2.73	0.60	26	-0.038	0.792	3.00	0.00	2	2.62	0.49	29	-0.379	0.294
cpdss_imp	2.56	0.64	27	2.52	0.85	27	-0.037	0.857	3.00	0.00	2	2.31	0.71	29	-0.690	0.188
cldss_imp	2.67	0.55	27	2.50	0.76	26	-0.167	0.365	2.50	0.71	2	2.21	0.62	29	-0.293	0.525
ehr_imp	2.70	0.61	27	2.68	0.55	28	-0.025	0.873	2.50	0.71	2	2.69	0.54	29	0.190	0.639

Table F.9 ANOVA results comparing large community hospitals that responded in both 2004 and 2011 to large community hospitals that responded in only 2004 or only 2011 (challenge)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	53.61	15.83	26	53.88	18.56	29	0.274	0.954	62.50	0.00	2	43.75	12.39	29	-18.750	0.044
rec_ch	3.00	0.55	27	2.96	0.52	27	-0.037	0.801	2.50	0.71	2	2.00	0.93	29	-0.500	0.463
clsuc_ch	1.92	0.76	25	2.07	0.87	27	0.154	0.502	2.50	0.71	2	2.14	0.80	28	-0.357	0.547
inj_ch	1.85	0.92	26	2.00	0.96	27	0.154	0.555	2.50	0.71	2	1.68	0.82	28	-0.821	0.180
lab_ch	2.26	0.94	27	2.22	1.12	27	-0.037	0.896	2.50	0.71	2	1.31	0.81	29	-1.190	0.052
PCM	56.49	21.32	26	53.45	20.36	29	-3.042	0.591	40.63	22.10	2	42.24	17.65	29	1.616	0.902
innpc_ch	2.63	0.74	27	2.38	0.71	24	-0.255	0.218	1.50	0.71	2	1.86	0.92	29	0.362	0.590
inntec_ch	2.33	1.27	27	2.35	0.89	26	0.013	0.966	1.50	0.71	2	1.83	1.10	29	0.328	0.685
adv_s_ch	1.96	1.09	27	2.33	0.78	27	0.370	0.158	2.00	1.41	2	1.38	0.90	29	-0.621	0.366
infec_ch	2.37	0.84	27	2.48	0.94	27	0.111	0.648	1.50	0.71	2	1.69	0.85	29	0.190	0.761
FE	58.33	21.08	26	65.23	22.28	29	6.897	0.245	54.17	17.68	2	56.32	18.32	29	2.155	0.873
innop_ch	2.76	0.97	25	3.16	0.62	25	0.400	0.089	3.00	0.00	2	2.41	1.05	29	-0.586	0.445
fcpln_ch	2.38	0.98	26	2.56	1.01	27	0.171	0.536	2.00	1.41	2	2.10	1.35	29	0.103	0.917
fund_ch	2.44	0.89	27	2.82	0.72	28	0.377	0.090	1.50	0.71	2	2.24	1.02	29	0.741	0.325
CE	45.79	16.10	26	45.26	18.91	29	-0.535	0.911	35.94	11.05	2	36.85	14.74	29	0.916	0.932
cag_ch	1.63	0.93	27	1.62	1.02	26	-0.014	0.958	1.50	0.71	2	1.43	1.03	28	-0.071	0.925
demo_ch	2.08	1.13	26	2.64	0.70	25	0.563	0.038	1.00	0.00	2	1.54	1.23	28	0.536	0.550
hc_ch	2.04	0.72	26	1.65	1.13	26	-0.385	0.149	1.50	0.71	2	1.52	1.02	29	0.017	0.982
right_ch	1.89	0.80	27	1.81	1.13	26	-0.081	0.764	1.50	0.71	2	1.03	0.87	29	-0.466	0.465
pegov_ch	1.85	0.92	26	1.62	1.02	26	-0.231	0.398	1.50	0.71	2	1.31	0.97	29	-0.190	0.789
pr_ch	1.88	0.91	26	2.04	0.92	26	0.154	0.546	1.50	0.71	2	1.31	0.89	29	-0.190	0.771
ptsat_ch	2.19	0.83	27	2.56	0.70	27	0.370	0.083	1.50	0.71	2	2.07	0.84	29	0.569	0.361
poph_ch	2.04	1.04	26	2.32	0.80	25	0.282	0.285	1.50	0.71	2	1.69	1.28	29	0.190	0.839
SIP	41.35	15.78	26	38.92	20.79	29	-2.430	0.631	42.86	5.05	2	26.85	13.32	29	-16.010	0.106
collab_ch	2.19	0.98	26	1.70	1.03	27	-0.489	0.083	2.00	0.00	2	1.03	0.87	29	-0.966	0.131
acad_ch	1.84	0.99	25	2.04	0.84	28	0.196	0.439	2.00	0.00	2	1.07	0.75	29	-0.931	0.096
vint_ch	2.57	0.81	21	2.44	0.86	18	-0.127	0.637	1.50	0.71	2	2.30	1.03	27	0.796	0.297
regn_ch	2.38	1.17	26	2.65	1.09	26	0.269	0.395	2.50	2.12	2	2.00	1.09	28	-0.500	0.554
gov_ch	2.92	0.98	26	2.68	1.12	28	-0.245	0.399	1.50	0.71	2	1.34	0.86	29	-0.155	0.805
voltr_ch	1.89	0.85	27	1.77	1.11	26	-0.120	0.660	1.00	0.00	2	0.90	0.86	29	-0.103	0.868
hint_ch	2.70	0.93	23	2.67	0.92	27	-0.029	0.912	1.00	0.00	2	1.86	1.03	29	0.862	0.251
CGM	36.54	20.63	26	36.21	20.60	29	-0.332	0.953	41.67	11.79	2	22.41	17.97	29	-19.253	0.150
smsuc_ch	1.96	0.94	27	1.79	0.83	28	-0.177	0.462	2.00	0.00	2	1.36	1.06	28	-0.643	0.407
smprf_ch	1.15	1.01	26	1.22	1.01	27	0.068	0.806	1.50	0.71	2	0.82	0.98	28	-0.679	0.350
smed_ch	1.58	0.95	26	1.63	1.04	27	0.053	0.848	1.50	0.71	2	1.07	1.05	28	-0.429	0.578
brdsuc_ch	1.70	1.03	27	1.64	0.91	28	-0.061	0.817	2.00	0.00	2	0.96	0.79	28	-1.036	0.080
brdprf_ch	1.44	0.97	27	1.46	0.96	28	0.020	0.940	1.50	0.71	2	0.64	0.87	28	-0.857	0.186
brded_ch	1.33	0.96	27	1.36	1.10	28	0.024	0.932	1.50	0.71	2	0.71	0.85	28	-0.786	0.217
IIDM	65.80	15.72	25	56.03	21.85	29	-9.766	0.069	50.00	0.00	2	45.17	17.50	29	-4.828	0.704
prfqal_ch	2.42	0.90	26	2.22	0.85	27	-0.201	0.407	2.00	0.00	2	1.46	0.79	28	-0.536	0.355
prfacc_ch	2.58	0.90	26	2.30	0.72	27	-0.281	0.217	2.00	0.00	2	1.50	0.88	28	-0.500	0.437
cpdss_ch	2.59	0.89	27	2.67	0.76	24	0.074	0.752	2.00	0.00	2	1.64	0.95	28	-0.357	0.605
cldss_ch	2.85	0.66	27	2.38	1.06	26	-0.467	0.059	2.00	0.00	2	2.07	0.81	28	0.071	0.904
ehr_ch	3.00	0.62	27	2.75	0.80	28	-0.250	0.202	2.00	0.00	2	2.68	0.77	28	0.679	0.232

Table F.10 ANOVA results comparing teaching hospitals that responded in both 2004 and 2011 to teaching hospitals that responded in only 2004 or only 2011 (articulation)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	100.00	0	3	80.56	20.83	9	-19.444	0.149	75.00	0.00	1	69.44	30.05	9	-5.556	0.865
rec_art	1.00	0.00	3	1.00	0.00	9	0.000	.	1.00	0.00	1	0.89	0.33	9	-0.111	0.760
clsuc_art	1.00	0.00	3	0.56	0.53	9	-0.444	0.188	0.00	0.00	1	0.78	0.44	9	0.778	0.133
inj_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	1.00	0.00	1	0.89	0.33	9	-0.111	0.760
lab_art	1.00	0.00	3	0.78	0.44	9	-0.222	0.418	1.00	0.00	1	0.22	0.44	9	-0.778	0.133
PCM	100.00	0	3	88.89	18.16	9	-11.111	0.329	100.00	0.00	1	86.11	18.16	9	-13.889	0.489
innpc_art	1.00	0.00	3	1.00	0.00	9	0.000	.	1.00	0.00	1	0.89	0.33	9	-0.111	0.760
inntec_art	1.00	0.00	3	0.78	0.44	9	-0.222	0.418	1.00	0.00	1	1.00	0.00	9	0.000	.
adv_s_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	1.00	0.00	1	0.78	0.44	9	-0.222	0.645
infec_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	1.00	0.00	1	0.78	0.44	9	-0.222	0.645
FE	100.00	0	3	85.19	33.79	9	-14.815	0.479	100.00	0.00	1	74.07	32.39	9	-25.926	0.469
innop_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	1.00	0.00	1	0.78	0.44	9	-0.222	0.645
fcpln_art	1.00	0.00	3	0.88	0.35	8	-0.125	0.568	1.00	0.00	1	0.89	0.33	9	-0.111	0.760
fund_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	1.00	0.00	1	0.56	0.53	9	-0.444	0.447
CE	83.33	19.09	3	83.33	15.31	9	0.000	1.000	25.00	0.00	1	69.44	15.45	9	44.444	0.026
cag_art	1.00	0.00	3	0.88	0.35	8	-0.125	0.568	0.00	0.00	1	0.67	0.50	9	0.667	0.242
demo_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	0.00	0.00	1	0.89	0.33	9	0.889	0.035
hc_art	1.00	0.00	2	0.89	0.33	9	-0.111	0.662	0.00	0.00	1	0.78	0.44	9	0.778	0.133
right_art	1.00	0.00	2	0.67	0.50	9	-0.333	0.389	1.00	0.00	1	0.78	0.44	9	-0.222	0.645
pegov_art	1.00	0.00	2	0.67	0.50	9	-0.333	0.389	0.00	0.00	1	0.44	0.53	9	0.444	0.447
pr_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	0.00	0.00	1	0.67	0.50	9	0.667	0.242
ptsat_art	1.00	0.00	3	1.00	0.00	9	0.000	.	1.00	0.00	1	1.00	0.00	9	0.000	.
poph_art	0.67	0.58	3	0.89	0.33	9	0.222	0.418	0.00	0.00	1	0.38	0.52	8	0.375	0.516
SIP	95.24	8.25	3	85.71	15.97	9	-9.524	0.356	14.29	0.00	1	66.67	28.57	9	52.381	0.120
collab_art	1.00	0.00	3	0.78	0.44	9	-0.222	0.418	1.00	0.00	1	0.89	0.33	9	-0.111	0.760
acad_art	1.00	0.00	3	1.00	0.00	9	0.000	.	0.00	0.00	1	0.89	0.33	9	0.889	0.035
vint_art	1.00	0.00	3	0.78	0.44	9	-0.222	0.418	0.00	0.00	1	0.88	0.35	8	0.875	0.052
regn_art	1.00	0.00	3	0.78	0.44	9	-0.222	0.418	0.00	0.00	1	0.56	0.53	9	0.556	0.347
gov_art	1.00	0.00	3	1.00	0.00	9	0.000	.	0.00	0.00	1	0.33	0.50	9	0.333	0.545
voltr_art	0.67	0.58	3	0.78	0.44	9	0.111	0.731	0.00	0.00	1	0.44	0.53	9	0.444	0.447
hint_art	1.00	0.00	3	1.00	0.00	8	0.000	.	0.00	0.00	1	0.88	0.35	8	0.875	0.052
CGM	94.44	9.62	3	72.22	31.18	9	-22.222	0.265	66.67	0.00	1	46.30	38.89	9	-20.370	0.633
smsuc_art	1.00	0.00	3	0.56	0.53	9	-0.444	0.188	1.00	0.00	1	0.67	0.50	9	-0.333	0.545
smprf_art	0.67	0.58	3	1.00	0.00	8	0.333	0.104	1.00	0.00	1	0.78	0.44	9	-0.222	0.645
smed_art	1.00	0.00	3	0.67	0.50	9	-0.333	0.290	0.00	0.00	1	0.44	0.53	9	0.444	0.447
brdsuc_art	1.00	0.00	3	0.78	0.44	9	-0.222	0.418	1.00	0.00	1	0.33	0.50	9	-0.667	0.242
brdprf_art	1.00	0.00	3	0.78	0.44	9	-0.222	0.418	0.00	0.00	1	0.33	0.50	9	0.333	0.545
brded_art	1.00	0.00	3	0.75	0.46	8	-0.250	0.389	1.00	0.00	1	0.22	0.44	9	-0.778	0.133
IIDM	100.00	0.00	3	91.11	20.28	9	-8.889	0.479	40.00	0.00	1	77.78	29.06	9	37.778	0.252
prfqal_art	1.00	0.00	3	1.00	0.00	9	0.000	.	1.00	0.00	1	0.89	0.33	9	-0.111	0.760
prfacc_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	1.00	0.00	1	0.89	0.33	9	-0.111	0.760
cpdss_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	0.00	0.00	1	0.56	0.53	9	0.556	0.347
cldss_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	0.00	0.00	1	0.56	0.53	9	0.556	0.347
ehr_art	1.00	0.00	3	0.89	0.33	9	-0.111	0.588	0.00	0.00	1	1.00	0.00	9	1.000	.

Table F.11 ANOVA results comparing teaching hospitals that responded in both 2004 and 2011 to teaching hospitals that responded in only 2004 or only 2011 (importance)

Strategic Issues & Domains	2004 Data								2011 Data							
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	100.00	0.00	3	81.48	12.34	9	-18.519	0.031	41.67	0.00	1	77.78	9.32	9	36.111	0.006
rec_imp	3.00	0.00	3	3.00	0.00	9	0.000		3.00	0.00	1	2.44	0.53	9	-0.556	0.347
clsuc_imp	3.00	0.00	3	2.33	0.71	9	-0.667	0.145	2.00	0.00	1	2.67	0.50	9	0.667	0.242
inj_imp	3.00	0.00	3	2.25	0.71	8	-0.750	0.109				2.44	0.53	9		
lab_imp	3.00	0.00	3	2.44	0.53	9	-0.556	0.108				1.78	0.67	9		
PCM	100.00	0.00	3	87.04	14.50	9	-12.963	0.165	100.00	0.00	1	79.63	13.89	9	-20.370	0.202
innpc_imp	3.00	0.00	3	2.89	0.33	9	-0.111	0.588	3.00	0.00	1	2.78	0.44	9	-0.222	0.645
inntec_imp	3.00	0.00	3	2.44	0.73	9	-0.556	0.229	3.00	0.00	1	2.33	0.50	9	-0.667	0.242
adv Imp	3.00	0.00	3	2.56	0.53	9	-0.444	0.188	3.00	0.00	1	2.22	0.67	9	-0.778	0.301
infec_imp	3.00	0.00	3	2.56	0.53	9	-0.444	0.188	3.00	0.00	1	2.22	0.67	9	-0.778	0.301
FE	100.00	0.00	3	96.30	7.86	9	-3.704	0.448	88.89	0.00	1	83.95	12.56	9	-4.938	0.719
innop_imp	3.00	0.00	3	2.89	0.33	9	-0.111	0.588	3.00	0.00	1	2.67	0.50	9	-0.333	0.545
fcpln_imp	3.00	0.00	3	2.89	0.33	9	-0.111	0.588	2.00	0.00	1	2.22	0.67	9	0.222	0.760
fund_imp	3.00	0.00	3	2.89	0.33	9	-0.111	0.588	3.00	0.00	1	2.67	0.50	9	-0.333	0.545
CE	75.00	12.50	3	73.15	14.89	9	-1.852	0.851	62.50	0.00	1	70.83	11.60	9	8.333	0.515
cag_imp	2.67	0.58	3	1.78	0.67	9	-0.889	0.067	1.00	0.00	1	2.00	0.71	9	1.000	0.217
demo_imp	3.00	0.00	2	2.44	0.53	9	-0.556	0.186	3.00	0.00	1	1.89	0.78	9	-1.111	0.214
hc_imp	2.50	0.71	2	2.22	0.67	9	-0.278	0.609				2.22	0.67	9		
right_imp	2.50	0.71	2	1.67	0.87	9	-0.833	0.241	2.00	0.00	1	2.11	0.93	9	0.111	0.912
pegov_imp	2.00	0.00	2	2.22	0.67	9	0.222	0.662	1.00	0.00	1	1.89	0.93	9	0.889	0.390
pr_imp	3.00	0.00	3	2.33	0.71	9	-0.667	0.145	3.00	0.00	1	2.33	0.50	9	-0.667	0.242
ptsat_imp	3.00	0.00	3	2.67	0.50	9	-0.333	0.290	3.00	0.00	1	2.89	0.33	9	-0.111	0.760
poph_imp	2.67	0.58	3	2.22	0.67	9	-0.444	0.329	2.00	0.00	1	1.67	0.71	9	-0.333	0.667
SIP	95.24	8.25	3	82.54	14.48	9	-12.698	0.188	85.71	0.00	1	70.37	11.11	9	-15.344	0.227
collab_imp	3.00	0.00	3	2.25	1.04	8	-0.750	0.256	3.00	0.00	1	2.33	0.50	9	-0.667	0.242
acad_imp	3.00	0.00	3	3.00	0.00	8	0.000		3.00	0.00	1	2.33	0.71	9	-0.667	0.397
vint_imp	3.00	0.00	3	2.88	0.35	8	-0.125	0.568	3.00	0.00	1	2.38	0.74	8	-0.625	0.454
regn_imp	3.00	0.00	3	2.75	0.71	8	-0.250	0.568	2.00	0.00	1	2.11	0.78	9	0.111	0.896
gov_imp	3.00	0.00	3	2.89	0.33	9	-0.111	0.588	2.00	0.00	1	2.22	0.44	9	0.222	0.645
voltr_imp	3.00	0.00	2	2.75	0.46	8	-0.250	0.486	3.00	0.00	1	1.67	0.71	9	-1.333	0.111
hint_imp	3.00	0.00	3	2.33	0.87	9	-0.667	0.226	2.00	0.00	1	2.25	0.71	8	0.250	0.749
CGM	90.74	6.41	3	70.37	19.25	9	-20.370	0.111	66.67	0.00	1	69.75	7.91	9	3.086	0.721
smsuc_imp	3.00	0.00	3	2.00	1.00	9	-1.000	0.124	2.00	0.00	1	2.44	0.73	9	0.444	0.578
smprf_imp	2.67	0.58	3	2.44	0.53	9	-0.222	0.549	2.00	0.00	1	2.44	0.53	9	0.444	0.447
smed_imp	2.67	0.58	3	2.11	0.93	9	-0.556	0.360	2.00	0.00	1	2.00	0.50	9	0.000	1.000
brdsuc_imp	3.00	0.00	3	2.22	0.83	9	-0.778	0.149	2.00	0.00	1	2.11	0.60	9	0.111	0.865
brdprf_imp	2.33	0.58	3	2.13	0.64	8	-0.208	0.635	2.00	0.00	1	2.00	0.50	9	0.000	1.000
brded_imp	2.67	0.58	3	2.00	0.71	9	-0.667	0.174	2.00	0.00	1	1.56	0.53	9	-0.444	0.447
IIDM	100.00	0.00	3	90.37	12.07	9	-9.630	0.211	66.67	0.00	1	88.89	8.16	9	22.222	0.033
prfqal_imp	3.00	0.00	3	2.67	0.71	9	-0.333	0.448	2.00	0.00	1	2.78	0.44	9	0.778	0.133
prfacc_imp	3.00	0.00	3	2.78	0.44	9	-0.222	0.418	2.00	0.00	1	2.89	0.33	9	0.889	0.035
cpdss_imp	3.00	0.00	3	2.56	0.88	9	-0.444	0.418	2.00	0.00	1	2.56	0.53	9	0.556	0.347
cl dss_imp	3.00	0.00	3	2.67	0.50	9	-0.333	0.290	2.00	0.00	1	2.44	0.53	9	0.444	0.447
ehr_imp	3.00	0.00	3	2.89	0.33	9	-0.111	0.588	2.00	0.00	1	2.67	0.71	9	0.667	0.397

Table F.12 ANOVA results comparing teaching hospitals that responded in both 2004 and 2011 to teaching hospitals that responded in only 2004 or only 2011 (*challenge*)

Strategic Issues & Domains	2004 Data							2011 Data								
	Mean (2004 only)	sd	n	Mean (both)	sd	n	Difference (both-2004)	p-value	Mean (2011 only)	sd	n	Mean (both)	sd	n	Difference (both-2011)	p-value
HRC	66.67	13.01	3	58.33	15.31	9	-8.333	0.420	31.25	0.00	1	45.14	10.26	9	13.889	0.235
rec_ch	3.33	0.58	3	2.89	0.78	9	-0.444	0.392	2.00	0.00	1	1.89	0.78	9	-0.111	0.896
clsuc_ch	2.67	0.58	3	2.11	0.93	9	-0.556	0.360	3.00	0.00	1	1.89	0.78	9	-1.111	0.214
inj_ch	2.67	0.58	3	1.78	1.20	9	-0.889	0.256				1.89	0.93	9		
lab_ch	2.00	1.73	3	2.56	0.53	9	0.556	0.380				1.56	1.01	9		
PCM	72.92	3.61	3	58.33	14.66	9	-14.583	0.129	25.00	0.00	1	54.86	14.91	9	29.861	0.094
innpc_ch	3.00	0.00	3	2.67	0.71	9	-0.333	0.448	2.00	0.00	1	2.33	0.87	9	0.333	0.724
inntec_ch	3.00	0.00	3	2.33	0.71	9	-0.667	0.145	1.00	0.00	1	2.11	0.60	9	1.111	0.117
adv_ch	3.00	0.00	3	2.11	0.93	9	-0.889	0.139	0.00	0.00	1	2.00	0.87	9	2.000	0.060
infec_ch	2.67	0.58	3	2.22	0.83	9	-0.444	0.418	1.00	0.00	1	2.33	0.71	9	1.333	0.111
FE	69.44	9.62	3	76.85	10.02	9	7.407	0.290	33.33	0.00	1	55.56	19.09	9	22.222	0.302
innop_ch	3.00	0.00	3	3.11	0.33	9	0.111	0.588	1.00	0.00	1	2.56	1.01	9	1.556	0.184
fcpln_ch	2.33	1.15	3	2.89	0.93	9	0.556	0.414				1.89	0.78	9		
fund_ch	3.00	0.00	3	3.22	0.44	9	0.222	0.418	3.00	0.00	1	2.22	0.83	9	-0.778	0.402
CE	47.92	14.43	3	48.61	16.91	9	0.694	0.951	50.00	0.00	1	37.15	15.34	9	-12.847	0.450
cag_ch	1.67	0.58	3	1.89	1.05	9	0.222	0.740	0.00	0.00	1	1.56	1.01	9	1.556	0.184
demo_ch	2.50	0.71	2	2.22	1.09	9	-0.278	0.744	3.00	0.00	1	1.33	0.71	9	-1.667	0.056
hc_ch	2.50	0.71	2	1.67	0.87	9	-0.833	0.241				1.67	0.87	9		
right_ch	2.50	0.71	2	1.56	0.88	9	-0.944	0.196	3.00	0.00	1	0.89	0.78	9	-2.111	0.034
pegov_ch	2.00	0.00	2	2.00	0.87	9	0.000	1.000	0.00	0.00	1	1.11	0.60	9	1.111	0.117
pr_ch	2.00	1.00	3	2.11	0.93	9	0.111	0.863	3.00	0.00	1	1.56	0.88	9	-1.444	0.159
ptsat_ch	3.00	0.00	3	2.22	0.83	9	-0.778	0.149	3.00	0.00	1	1.89	1.05	9	-1.111	0.347
poph_ch	2.33	0.58	3	1.89	0.93	9	-0.444	0.461	4.00	0.00	1	1.89	1.27	9	-2.111	0.153
SIP	51.19	5.46	3	49.21	12.97	9	-1.984	0.807	25.00	0.00	1	27.78	13.34	9	2.778	0.848
collab_ch	3.00	0.00	3	1.63	0.92	8	-1.375	0.033	1.00	0.00	1	1.22	0.67	9	0.222	0.760
acad_ch	2.33	0.58	3	2.56	1.13	9	0.222	0.756	1.00	0.00	1	0.78	0.44	9	-0.222	0.645
vint_ch	2.33	0.58	3	2.50	0.53	8	0.167	0.662	2.00	0.00	1	1.75	1.04	8	-0.250	0.826
regn_ch	3.00	0.00	3	3.00	0.93	8	0.000	1.000	4.00	0.00	1	2.50	0.93	8	-1.500	0.170
gov_ch	2.67	0.58	3	3.00	0.71	9	0.333	0.481	2.00	0.00	1	2.25	0.71	8	0.250	0.749
voltr_ch	2.33	0.58	3	2.44	1.01	9	0.111	0.863	1.00	0.00	1	1.13	0.35	8	0.125	0.749
hint_ch	2.67	0.58	3	2.33	0.87	9	-0.333	0.554	4.00	0.00	1	2.29	0.76	7	-1.714	0.078
CGM	43.06	13.39	3	49.54	18.10	9	6.481	0.586	12.50	0.00	1	25.46	16.20	9	12.963	0.469
smsuc_ch	2.33	0.58	3	2.00	0.71	9	-0.333	0.481	0.00	0.00	1	1.56	1.01	9	1.556	0.184
smpf_ch	2.00	1.41	2	2.33	1.00	9	0.333	0.695	0.00	0.00	1	0.33	0.71	9	0.333	0.667
smed_ch	1.67	0.58	3	2.11	1.05	9	0.444	0.511	0.00	0.00	1	1.11	0.93	9	1.111	0.289
brdsuc_ch	1.67	0.58	3	2.00	0.87	9	0.333	0.554	0.00	0.00	1	1.11	0.60	9	1.111	0.117
brdprf_ch	1.67	0.58	3	1.50	0.93	8	-0.167	0.781	3.00	0.00	1	1.00	0.87	9	-2.000	0.060
brded_ch	1.67	0.58	3	2.11	1.05	9	0.444	0.511	0.00	0.00	1	1.00	0.71	9	1.000	0.217
IIDM	75.00	0.00	3	61.67	18.20	9	-13.333	0.247	40.00	0.00	1	45.00	17.85	9	5.000	0.797
prfqal_ch	3.00	0.00	3	2.44	0.88	9	-0.556	0.316	0.00	0.00	1	1.56	0.88	9	1.556	0.133
prfacc_ch	3.00	0.00	3	2.67	0.71	9	-0.333	0.448	0.00	0.00	1	1.44	0.88	9	1.444	0.159
cpdss_ch	3.00	0.00	3	2.50	0.76	8	-0.500	0.297	2.00	0.00	1	1.67	0.87	9	-0.333	0.724
clsdss_ch	3.00	0.00	3	2.44	1.01	9	-0.556	0.380	2.00	0.00	1	1.89	1.27	9	-0.111	0.936
ehr_ch	3.00	0.00	3	2.56	1.13	9	-0.444	0.525	4.00	0.00	1	2.44	0.88	9	-1.556	0.133

Appendix G: Interview guide and questions

ACCOUNTABILITY & ORGANIZATIONAL IMPACT: INTERVIEW QUESTIONS

The focus on accountability has increased in Ontario's health care system. With the introduction of Local Health Integration Networks (LHINs) in 2006 and legislation (*Excellent Care for All Act*, 2010), acute care hospitals face increased external reporting requirements and performance measures. In this environment of change and increased reporting requirements, acute care hospitals may make adjustments to their strategic priorities/initiatives and organizational procedures (e.g., increased alignment of organizational goals with reporting and performance requirements, streamlining data collection, or increased involvement of clinical staff) and may have different ways of coping with external reporting requirements.

These questions are designed to improve our understanding of how acute care hospitals are affected by increased accountability and external reporting requirements as well as to follow-up on the *Acute Care Hospital Strategic Priorities Survey* that your hospital responded to in late 2011. To refresh your memory, you can find a copy of the survey at the following link: <http://www.approachestoaccountability.ca/reports/Stratsurv.pdf>

OPENING:

“Thank you for agreeing to meet with me today.”

“Would it be okay for me to tape this interview?”

CONFIDENTIALITY:

- *Your participation in this interview is completely voluntary and you may choose to stop it at any time.*
- *Your name or any identifying information will not appear in any report or publication of this research unless you give consent or it is otherwise publicly available.*
- *Your interview transcripts and recording will be safely stored on a password protected computer and only research staff will have access to this information.*
- *Confidentiality will be provided to the fullest extent possible by law.*

“I would be happy to send you a transcript of the interview, for you to correct or amend as needed.”

“All questions today are about accountability and reporting requirements and their impact on your organization. Remember, there are no right or wrong answers to any of these questions, I just want to talk with you and learn from your experience. Results from this study may be used to better inform policy decisions in the future.”

QUESTIONS:

1. In general, how has the OVERALL increased focus on accountability since the creation of LHINs in 2006 affected your organization? (Please consider both positive and negative effects, including challenges)
 - a. Considering government, regulators, and other hospital organizations, how is your hospital affected by their varying accountability and reporting requirements? (Positive or negative changes/results that are intended or expected? Unintended or not expected?)

EXAMPLES:

- *Ministry of Health and Long-Term Care (MOHLTC)*
 - *Your Local Health Integration Network (LHIN)*
 - *Excellent Care for All Act (ECFAA)*
 - *WERS*
 - *Others*
- b. Has your hospital responded to the increased external reporting requirements? If so, how.
 - c. Are there specific support areas where you have increased staffing or made other expenditures to deal with increased accountability reporting and actions? Please elaborate.
(**For example:** health records, finance, decision support, etc.)

Accountability is a dynamic process and has continued to expand in its scope; beginning with financial issues and expanding to clinical (patient safety) areas.

2. How has the standardization of measures and reporting requirements for all hospitals affected your organization?
(Please consider both positive and negative effects, including challenges)
3. Have accountability and external reporting requirements been useful for your hospital in any way? If so, in what ways?
For example:
 - Areas of excellence or high performance have been revealed
 - Gaps or areas in need of improvement have been identified from the collection and reporting of required data.
 - Improvements made, innovation created, hospital practice now incorporates reporting requirements, etc.
 - Measurement and reporting is less challenging (more streamlined).
4. In your opinion, has the process of priority setting/choosing strategic initiatives changed at your hospital with the introduction of LHINs, HSAA, and ECFAA? Please elaborate.

Hospital Service Accountability Agreements (HSAA) require you to collect and report specific data to your LHIN. The Excellent Care for All Act (ECFAA) introduced changes to CEO compensation and tied it to hospital performance via the Quality Improvement Plan (QIP).

5. Have HSAA and ECFAA (QIP requirements) affected your hospital differently? Please elaborate.
6. In your opinion, does the change in executive compensation brought in by ECFAA:
 - a. Reinforce hospital accountability requirements as found in the HSAA? Please elaborate.
 - b. Affect your hospital's priorities or organizational goals? Please elaborate.
7. Consider the HSAA and the QIP; for each, what collected information is reported to your hospital's board?
 - a. How is this information used by your organization? (***For example:*** by your Hospital board? Hospital? Senior management team? Clinical teams? External stakeholders?)
8. The results from the fall 2011 survey about the strategic priorities of acute care hospitals showed that the overall (all hospitals combined) ratings of importance and challenge for strategic issues decreased in 2011 when compared to the responses from 2004. How would you explain these results? What do you think is driving this result?
9. Is there anything else you would like to share or comment on that hasn't come up during this interview?

THANK YOU for participating in this interview.

Appendix H: Interview consent

Title: Accountability in Health Care

Investigator: Ms Seija K. Kromm, MA, PhD Candidate.

Thesis Supervisor: Raisa Deber, PhD

Committee Members: G. Ross Baker, PhD and Walter Wodchis, PhD

Funding Source: Canadian Institutes for Health Research (PHSI Grant: PHE-101967) and Alberta Innovates – Health Solutions PhD studentship.

Background and Purpose of Research

The strategic priorities of acute care hospitals and how they have been affected by the current stress on accountability is a topic of interest to policy makers and researchers. Accountability requires that all parties know their roles, responsibilities, and performance expectations. As well, it requires that those designing accountability structures be cognizant of the priorities of individual organizations. In this interview, we are asking about the impact of accountability requirements on your organization.

This study is being conducted by researchers from the University of Toronto. It has been approved by the Health Sciences Research Ethics Board at the University of Toronto. The text below describes this study. Please read this information carefully before you decide if you are willing to participate.

Who is participating?

Stakeholders from acute care hospitals in the Canadian province of Ontario will be participating in this study. This means that many of your colleagues may also be interviewed.

What does the study involve?

You are being asked to answer a few questions during a semi-structured interview to expand on issues related to accountability in health care and strategic priorities of your organization. This interview should take 45-60 minutes to complete.

Contact Information

This research is being conducted by Seija Kromm as part of the requirements for the degree of Doctor of Philosophy at the University of Toronto. This research is being supervised by Raisa Deber, PhD (University of Toronto) and is part of a larger project on approaches to accountability (www.approachestoaccountability.ca). If you have any questions about the study, you may contact Seija Kromm or Raisa Deber at (phone number) or by email at <email address> or <email address>.

You do not waive your legal rights by participating in this study. If you have any questions about your rights as a participant, you may contact the Ethics Review Office of the University of Toronto at 416-946-3273 or ethics.review@utoronto.ca.

Benefits / Risk of the Study

There are no personal benefits or risks to the study, but we anticipate that the results should be helpful to your organization and other decision makers in improving how accountability is being implemented and its impact on acute care hospitals. The questions in the interview are of low sensitivity. If you feel uncomfortable at any time you are free to discontinue participation, either temporarily or permanently.

Confidentiality

The information collected will not be used to identify a particular organization or individual unless express consent is received or the information is already in the public domain. You will have the opportunity to review your interview transcript to ensure that we have correctly captured your views. Your responses will only be used for the purposes of this research study and will not be accessed by anyone outside of the research team. All electronic and paper records of the interviews will be kept in a secure location and will be maintained for 7 years after study completion and then destroyed.

Voluntary Participation / Withdrawal

Participation in this study is completely voluntary. If you choose to participate, you may choose to not answer certain questions or exit the interview at any time without any consequence.

Compensation

You will not receive any compensation for participating in the study.

Publication of Results

The results from this study will be published in academic journals and presented at conferences. They will also be shared with the participants in the study if desired, including through workshops and posts on the study webpage (www.approachestoaccountability.ca).

Funding of Research

This sub-study is being funded in part through a Studentship Award, which was awarded to Ms. Kromm by Alberta Innovates – Health Solutions (funded by the Alberta Heritage Foundation for Medical Research (AHFMR) endowment fund). AI-HS is the major provincial funding agency of health research in Alberta. This research is also one component of a research program about approaches to accountability in health care that is funded by a CIHR-PHSI grant.

Consent

I have read the above information and by signing below I provide my consent to participate in this research study.

 Printed Name

 Signature

 Date

We greatly appreciate your participation in this study.

Appendix I: Interview coding scheme

First level code**	Second level code** (explanation)	Third level code** (explanation)
Indicators (can specify*) <i>Examples (not limited to):</i> *patient satisfaction *ALC *hand hygiene *c.diff *VAP *ED waits *total margin *volume *financial	std (<i>standardization of</i>)	comparison (<i>with others/self</i>)
	Right ones used (<i>interviewee opinion</i>)	imp to public (<i>reason they're right</i>)
	Gaps/missing (specify)	
	New	to organization but in acct documents
	Additional	
	Org specific	
	Already using	
	Alignment	Org goals (<i>indicators align with</i>) Already using (<i>hospital was/is</i>) External (<i>align with requirements</i>)
	More focus on	
	Priority	
	Useful	<i>Specific usefulness or generally useful</i>
	Not useful	
	Definition	<i>definition of measure, or formula used</i>
	Choice of	
	Negotiation	
	Challenging	
	Not challenging	
	Cascading (<i>from LHIN</i>)	
Controllability	Organization can or cannot control	
Other (specify)		
Data	Decision support (<i>not org response</i>)	
	External use (<i>means use by those reported to</i>)	Yes No
	Feedback (<i>from external</i>)	Lag Useful
	Centralized	
	Completeness	
	Communication	
	Quality	
	Analysis	
	Capture	
	Access to	
	Timeliness	<i>Real time vs lag (e.g., weeks, months, etc.)</i>
	Used for public reporting	
ORG-IMPACT	Positive (<i>effect</i>)	Focus, info, data, other (specify)
	Negative (<i>effect, i.e., burden</i>)	Not useful
		Financial
		Time (<i>data, too many measures, etc.</i>)
		Trade off (<i>org has to make</i>)
		Other (<i>focus reduced, resources, etc.</i>)
	Minor (<i>effect</i>)	Already doing
	HR (<i>impact on staffing</i>)	Existing staff
		Additional staff
	Affected by	Standardization (<i>of measures</i>)
Reporting requirements		
External priorities		
Governance	Board	
	Public	
	System	

First level code**	Second level code** (explanation)	Third level code** (explanation)
ENV (environment)	Health system strategy	
	Focus on	
	Changes to	
	Quality	
	Accountability	
	Hospital size	
Production characteristic	Measurability	(their perceptions of measurability)
ORG-RESP (response to what is happening, not potential response, is new)	H-SAA (response to)	Quality
		Financial
		Volumes
	Account drives performance	
	Board OR sr management (indicate which)	Data used (by them, not related to analysis)
		Communicate (e.g., more explanation given to board, talking together, etc.)
	Strategy (changes to strategies or process of setting strategies or prioritization of strategies)	No change
		Who involved (in formulating strategy)
		Increased focus (of strategies in general)
		Align with external (goals/strategies, not indicators)
		Prioritize (org prioritizes certain strategies)
		Other (specify)
	Communication	(within and out of organization)
	HR (staffing)	
	Leadership	(increased role or changes to; internal or external)
	Decision support (the actual department)	
	Data analysis	
	Data capture	Timely
		Increased focus
	Alignment	To external (requirements)
		Btwn departments (internal)
	Permeate (top down)	(cascade requirements DOWN through organization)
	Engagement (bring up & horizontal)	(more/different people involved/consulted, UP)
Collaborate	(with other organizations, includes data sharing)	
P4P or QIP (specify which one)	Unintended/Gaming (indicate whether self or others)	
	Already using	
	increased focus (P4P or QIP provides for org)	
Investment (specify)		
Process change	(changes to infrastructure, staff, tools used, etc.)	
Unintended (not related to QIP or P4P)	Gaming (indicate whether self or others)	
	Focus (diversion from other areas)	
Account(whom) "Accountable to..."	Public (includes "community")	
	Government (includes "MOHLTC")	
	LHIN	
	Quality committee (internal)	
	Board	
	Other (specify)	
Account(what) "Accountable for..."	H-SAA	Reporting requirements
	QIP	
	Quality	
	Integration	
	Financial	
	Indicators	
	Reporting req	

First level code**	Second level code** (<i>explanation</i>)	Third level code** (<i>explanation</i>)
Account(how) “Held accountable by...” Account (<i>Accountability in general</i>)	Financial incentives	
	Public reporting	
	Definition	
	Goals of	
	Negative	
	Positive	
Survey	System control increased	<i>e.g., perception impacted by org framing of issues specific to change in env (LHIN, etc.)</i>
	Framing	
	Env change	
	Exec (<i>executive</i>) change	
	Experience	
	Do not know	
	Other (specify)	
QI-GEN	(<i>Quality improvement, in general</i>)	<i>A general QI code; not necessarily related to accountability, QIP, or other quality codes</i>

** Italicized words in brackets do not need to be used when coding. They are used to explain the code. Further specification can be included when “specify” is in bracket. **Use () after “Account”**.

Appendix J: Indicator definitions

Ambulatory care visits: Total outpatient visits minus emergency department (ED) visits.

90th percentile wait time: the point at which nine out of ten patients received their treatment.

90th percentile emergency room (ER) length of stay (LOS): the point at which nine out of ten admitted patients completed their visit = the time from triage or registration, whichever comes first, to the time the patient leaves the ER.

CDI rate per 1,000 patient days: (Number of patients newly diagnosed with hospital-acquired CDI) / (Number of patient days in that month) X 1,000

Current ratio: The number of times a hospital's short-term obligations can be paid using the hospital's short-term assets. It is calculated as current assets divided by current liabilities.

Emergency room (ER) wait times: 90th percentile ER length of stay for admitted patients.

Falls: Percentage of complex continuing care residents who fell in the last 30 days

Hand hygiene compliance before patient contact: (Number of times that hand hygiene was performed before initial patient contact) / (Number of observed hand hygiene indications for before initial patient contact) X 100

Hospital standardized mortality ratio: (Number of observed deaths) / (Number of expected deaths) X 100

Medication reconciliation at admission: Total number of patients with medications reconciled as a proportion of the total number of patients admitted to the hospital

MRSA: Methicillin-resistant Staphylococcus aureus

Patient satisfaction: Sum of % responding “Definitely,” “Yes,” and “Yes, Definitely” to “Would you recommend this hospital to your friends and family?”

Patient satisfaction: Sum of % responding “Excellent, Very Good and Good” to “Overall, how would you rate the care and services you received at the hospital?”

Patient satisfaction: In-house survey (if available) – % response to a summary question such as the “Willingness of patients to recommend the hospital to friends or family”

Percentage alternate level of care (ALC) days: Total number of inpatient days designated as ALC divided by the total number of inpatient days.

Physical restraints: Number of patients who are physically restrained at least once in the 3 days prior to initial assessment divided by all cases with a full admission assessment.

Pressure ulcers: Percentage of complex continuing care residents with new pressure ulcer in the last 3 months (\geq stage 2)

Rate of central line blood stream infections per 1,000 central line days: (Total number of newly diagnosed CLI cases in the ICU after at least 48 hours of being placed on a central line)/ (Number of central line days in that reporting period) X 1,000

Rate of in-hospital mortality following major surgery: Rate of in-hospital deaths due to all causes occurring within five days of major surgery

Rate of readmission: the number of patients admitted to own facility for an unplanned inpatient readmission, within 30 days from the first admission, relative to the total number of readmissions expected within 30 days.

Readmission within 30 days for selected CMGs to ANY facility: Number of patients with select CMGs readmitted to ANY facility for non-elective inpatient care within 30 days of discharge, compared to the number of expected non-elective readmissions

Surgical Safety Checklist: (Number of times all three phases of the surgical safety checklist was performed) / (Total number of surgeries performed) X 100

Total Margin (consolidated): Percentage by which total corporate (consolidated = all sector codes and fund types) revenues exceed or fall short of total corporate (consolidated) expense, excluding the impact of facility amortization, in a given year.

VAP rate per 1,000 ventilator days: (Total number of newly diagnosed VAP cases in the ICU after at least 48 hours of mechanical ventilation) / (Number of ventilator days in that reporting period) X 1,000

VRE: Vancomycin Resistant Enterococcus

Wait time: The time from the 'decision to treat to time treatment received.' The formula is $WT = (\text{Procedure Date}) - (\text{Decision to Treat Date}) - (\text{Patient Unavailable Days})$.

Appendix K: Detailed ANOVA results

All tables use the following abbreviations:

Strategic Issue Suffixes:

_art = articulation
_imp = importance
_ch = challenge

Strategic Domains:

HRC = Human Resources Cultivation
PCM = Patient Care Management
FE = Financial Efficiency
CE = Consumer Engagement
SIP = Service Integration and Partnerships
CGM = Corporate Governance and Management
IIDM = Improved Information Use for Decision Making

Strategic Issues:

rec = Physician and staff recruitment
clsuc = Clinical leadership and succession planning
inj = Reduction in injury and/or absenteeism
lab = Labour relations
innpc = Innovations in high-quality patient care delivery
inntec = Cultivating innovations in new technology for diagnosis and/or treatment (including pharmaceuticals)
adv = Increasing focus on identification and management of adverse events
infec = Increasing focus on infection control strategies
innop = Innovations to enhance our financial operating position
fcpln = Increasing focus on facility planning
fund = Increasing focus on donations and fundraising efforts
cag = Involving community advisory groups in corporate decision-making
demo = Planning based on changing demographics of your catchment population
hc = Increasing engagement of patients /consumers in health and healthcare issues
right = Increasing engagement of patients /consumers in rights and responsibilities
pegov = Increasing engagement of patients /consumers in program planning and evaluation and/or corporate governance issues
pr = Increasing focus on public relations/marketing
ptsat = Increasing focus on patient satisfaction
poph = Increasing focus on population health
collab = Collaboration with academic and training facilities for human resource planning
acad = Relations with academic institutions affiliated with recognized programs in health related fields
vint = Vertical integration
regn = Increasing focus on regionalization
gov = Increasing focus on government relations
voltr = Increasing focus on volunteer relations
hint = Horizontal Integration
smsuc = Senior management succession planning
smprf = Routine senior management performance appraisals using established criteria
smed = Educational opportunities and resources for senior management
brdsuc = Board member succession planning
brdprf = Routine board member performance appraisals using established criteria
brded = Educational opportunities and resources for board members
prfqal = Increasing focus on performance measurement for improved quality
prfacc = Increasing focus on performance measurement for accountability
cpdss = Implementing corporate decision-support system
clidss = Implementing clinical decision-support system
ehr = Implementing electronic patient health record

Table K.1 Aggregate mean articulation (0 = no, 1 = yes) of strategic issues and domains in hospital corporate documents and ANOVA results comparing 2011 to 2004 data

Strategic Issues & Domains	All Respondents:							Responded in both years:								
	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference (2011-2004)	p-value	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference (2011-2004)	p-value
HRC	65.094	28.31	53	72.632	28.498	95	-7.537	0.124	68.75	27.558	44	72.727	30.413	44	-3.977	0.522
rec_art	0.887	0.32	53	0.916	0.279	95	-0.029	0.566	0.909	0.291	44	0.886	0.321	44	0.023	0.729
clsuc_art	0.558	0.502	52	0.576	0.497	92	-0.018	0.832	0.636	0.487	44	0.581	0.499	43	0.055	0.604
inj_art	0.811	0.395	53	0.783	0.415	92	0.029	0.684	0.841	0.37	44	0.814	0.394	43	0.027	0.743
lab_art	0.365	0.486	52	0.696	0.463	92	-0.330	<0.0001	0.364	0.487	44	0.674	0.474	43	-0.31	0.003
PCM	75	25.476	53	74.474	30.938	95	0.526	0.916	78.977	22.839	44	73.295	32.528	44	5.682	0.346
innpc_art	0.885	0.323	52	0.903	0.297	93	-0.019	0.726	0.909	0.291	44	0.86	0.351	43	0.049	0.483
inntec_art	0.596	0.495	52	0.641	0.482	92	-0.045	0.594	0.659	0.479	44	0.614	0.493	44	0.045	0.662
adv_s_art	0.808	0.398	52	0.728	0.447	92	0.079	0.289	0.818	0.39	44	0.721	0.454	43	0.097	0.286
infec_art	0.769	0.425	52	0.785	0.413	93	-0.016	0.828	0.773	0.424	44	0.791	0.412	43	-0.02	0.842
FE	67.925	30.636	53	78.246	32.532	95	-10.32	0.061	71.212	30.151	44	75	34.570	44	-3.788	0.585
innop_art	0.885	0.323	52	0.806	0.397	93	0.078	0.227	0.909	0.291	44	0.791	0.412	43	0.118	0.124
fcpln_art	0.755	0.434	53	0.880	0.326	92	-0.126	0.05	0.773	0.424	44	0.857	0.354	42	-0.08	0.32
fund_art	0.423	0.499	52	0.713	0.455	94	-0.290	0.001	0.455	0.504	44	0.659	0.479	44	-0.2	0.054
CE	68.16	22.14	53	74.079	25.477	95	-5.919	0.158	72.159	18.651	44	72.443	26.217	44	-0.284	0.953
cag_art	0.566	0.5	53	0.652	0.479	92	-0.086	0.307	0.614	0.493	44	0.628	0.489	43	-0.01	0.892
demo_art	0.774	0.423	53	0.870	0.339	92	-0.096	0.136	0.841	0.37	44	0.837	0.374	43	0.004	0.963
hc_art	0.712	0.457	52	0.822	0.384	90	-0.111	0.126	0.75	0.438	44	0.837	0.374	43	-0.09	0.321
right_art	0.673	0.474	52	0.659	0.477	91	0.014	0.868	0.75	0.438	44	0.605	0.495	43	0.145	0.15
pegov_art	0.692	0.466	52	0.667	0.474	90	0.026	0.755	0.727	0.451	44	0.605	0.495	43	0.123	0.23
pr_art	0.635	0.486	52	0.785	0.413	93	-0.150	0.051	0.636	0.487	44	0.767	0.427	43	-0.13	0.186
ptsat_art	1	0	52	0.913	0.283	92	0.087	0.029	1	0	44	0.86	0.351	43	0.14	0.01
poph_art	0.490	0.469	51	0.783	0.415	92	-0.292	<0.0001	0.465	0.505	43	0.791	0.412	43	-0.33	0.002
SIP	59.569	29.08	53	74.737	27.365	95	-15.17	0.002	64.286	27.123	44	74.675	26.479	44	-10.390	0.073
collab_art	0.660	0.445	53	0.772	0.422	92	-0.111	0.147	0.705	0.462	44	0.773	0.424	44	-0.07	0.472
acad_art	0.679	0.44	53	0.775	0.42	89	-0.096	0.21	0.727	0.451	44	0.78	0.419	41	-0.05	0.575
vint_art	0.843	0.395	51	0.789	0.41	90	0.054	0.435	0.884	0.324	43	0.78	0.419	41	0.103	0.209
regn_art	0.569	0.5	51	0.663	0.475	92	-0.094	0.266	0.628	0.489	43	0.651	0.482	43	-0.02	0.825
gov_art	0.385	0.491	52	0.807	0.397	88	-0.422	<0.0001	0.386	0.493	44	0.833	0.377	42	-0.45	<0.0001
voltr_art	0.462	0.503	52	0.769	0.424	91	-0.308	<0.0001	0.477	0.505	44	0.732	0.449	41	-0.25	0.016
hint_art	0.694	0.466	49	0.933	0.251	90	-0.239	<0.0001	0.762	0.431	42	0.929	0.261	42	-0.17	0.035
CGM	44.969	40.508	53	67.188	34.831	96	-22.22	0.001	48.864	41.359	44	59.848	37.924	44	-10.985	0.198
smsuc_art	0.462	0.503	52	0.628	0.486	94	-0.166	0.053	0.523	0.505	44	0.591	0.497	44	-0.07	0.525
smprf_art	0.596	0.495	52	0.908	0.291	76	-0.312	<0.0001	0.636	0.487	44	0.886	0.323	35	-0.25	0.011
smed_art	0.442	0.502	52	0.710	0.456	93	-0.267	0.001	0.477	0.505	44	0.535	0.505	43	-0.06	0.596
brdsuc_art	0.385	0.491	52	0.755	0.432	94	-0.371	<0.0001	0.386	0.493	44	0.651	0.482	43	-0.26	0.013
brdprf_art	0.423	0.499	52	0.559	0.499	93	-0.136	0.118	0.477	0.505	44	0.535	0.505	43	-0.06	0.596
brded_art	0.442	0.502	52	0.761	0.429	92	-0.319	<0.0001	0.432	0.501	44	0.659	0.48	41	-0.23	0.036
IIDM	72.83	30.658	53	79.158	29.595	95	-6.328	0.22	75.909	30.978	44	77.727	31.760	44	-1.818	0.786
prfqal_art	0.906	0.295	53	0.946	0.227	93	-0.041	0.354	0.909	0.291	44	0.93	0.258	43	-0.02	0.721
prfacc_art	0.887	0.32	53	0.871	0.337	93	0.016	0.782	0.909	0.291	44	0.837	0.374	43	0.072	0.319
cpdss_art	0.569	0.5	51	0.734	0.444	94	-0.165	0.042	0.628	0.489	43	0.705	0.462	44	-0.08	0.454
clsdss_art	0.58	0.499	50	0.723	0.45	94	-0.143	0.082	0.619	0.492	42	0.682	0.471	44	-0.06	0.547
ehr_art	0.784	0.415	51	0.745	0.438	94	0.040	0.597	0.791	0.412	43	0.773	0.424	44	0.018	0.842

Table K.2 Aggregate results for the mean importance (Likert scale from 0 to 3) of strategic issues and domains to organization's strategic direction over the next five years and ANOVA results comparing 2011 data to 2004 data

Strategic Issues & Domains	All Respondents:								Responded in both years:							
	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference (2011-2004)	p-value	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference (2011-2004)	p-value
HRC	73.878	14.199	52	79.474	18.547	95	-5.595	0.06	76.550	11.960	43	78.598	19.638	44	-2.048	0.56
rec_imp	2.577	0.537	52	2.915	0.317	94	-0.338	<0.0001	2.605	0.541	43	2.93	0.338	43	-0.33	0.001
clsuc_imp	2.431	0.64	51	2.228	0.813	92	0.203	0.126	2.535	0.592	43	2.357	0.759	42	0.178	0.231
inj_imp	2.216	0.642	51	2.272	0.743	92	-0.056	0.651	2.233	0.649	43	2.286	0.774	42	-0.05	0.732
lab_imp	1.837	0.746	49	2.422	0.653	90	-0.585	<0.0001	1.857	0.751	42	2.35	0.7	40	-0.49	0.003
PCM	78.302	18.15	53	80.142	22.537	94	-1.84	0.612	80.492	13.915	44	80.426	23.841	43	0.066	0.987
innpc_imp	2.577	0.696	52	2.742	0.512	89	-0.165	0.11	2.659	0.608	44	2.825	0.385	40	-0.17	0.143
inntec_imp	2	0.792	52	2.156	0.97	90	-0.156	0.328	2.045	0.806	44	2.22	0.909	41	-0.17	0.352
adv_s_imp	2.462	0.641	52	2.457	0.717	92	0.005	0.967	2.432	0.661	44	2.476	0.707	42	-0.04	0.764
infec_imp	2.538	0.641	52	2.663	0.54	92	-0.125	0.216	2.523	0.628	44	2.667	0.57	42	-0.14	0.27
FE	79.036	17.657	53	81.56	24.417	94	-2.525	0.51	82.576	14.654	44	84.596	23.136	44	-2.020	0.626
innop_imp	2.615	0.565	52	2.719	0.584	89	-0.104	0.305	2.636	0.574	44	2.854	0.358	41	-0.22	0.041
fcpln_imp	2.226	0.824	53	2.523	0.727	88	-0.296	0.027	2.364	0.75	44	2.6	0.632	40	-0.24	0.124
fund_imp	2.365	0.768	52	2.718	0.526	85	-0.352	0.002	2.432	0.759	44	2.78	0.419	41	-0.35	0.011
CE	67.531	17.59	53	71.14	19.116	95	-3.609	0.259	69.981	16.849	44	70.549	20.281	44	-0.568	0.887
cag_imp	1.865	0.715	52	1.935	0.777	93	-0.070	0.593	1.977	0.707	43	1.976	0.749	42	0.001	0.997
demo_imp	2.212	0.8	52	2.511	0.625	88	-0.300	0.015	2.233	0.841	43	2.6	0.496	40	-0.37	0.019
hc_imp	2.039	0.72	51	2.295	0.714	88	-0.256	0.044	2.114	0.722	44	2.317	0.756	41	-0.2	0.208
right_imp	1.942	0.873	52	2.068	0.708	88	-0.126	0.353	2.023	0.902	44	1.95	0.783	40	0.073	0.695
pegov_imp	1.962	0.907	52	2.105	0.669	86	-0.143	0.29	2	0.915	44	2.103	0.718	39	-0.1	0.575
pr_imp	2	0.886	52	2.289	0.753	90	-0.289	0.041	1.977	0.902	44	2.244	0.734	41	-0.27	0.14
ptsat_imp	2.765	0.473	51	2.620	0.608	92	0.145	0.143	2.795	0.462	44	2.69	0.563	42	0.105	0.346
poph_imp	1.827	0.76	52	2.322	0.668	90	-0.495	<0.0001	1.773	0.743	44	2.39	0.586	41	-0.62	<0.0001
SIP	69.452	16.691	53	76.14	20.878	95	-6.688	0.047	71.537	13.370	44	75.758	21.708	44	-4.221	0.275
collab_imp	2.077	0.86	52	2.143	0.901	91	-0.066	0.669	2.114	0.868	44	2.22	0.881	41	-0.11	0.578
acad_imp	2.25	0.789	52	2.427	0.721	89	-0.177	0.177	2.295	0.795	44	2.415	0.706	41	-0.12	0.468
vint_imp	2.653	0.561	49	2.646	0.616	82	0.007	0.95	2.659	0.53	41	2.676	0.626	37	-0.02	0.896
regn_imp	2.12	0.799	50	2.307	0.793	88	-0.187	0.187	2.186	0.824	43	2.3	0.883	40	-0.11	0.545
gov_imp	1.980	0.616	51	2.744	0.487	90	-0.764	<0.0001	2	0.61	44	2.78	0.475	41	-0.78	<0.0001
voltr_imp	1.941	0.81	51	2.545	0.642	88	-0.604	<0.0001	1.909	0.858	44	2.641	0.584	39	-0.73	<0.0001
hint_imp	2.24	0.797	50	2.583	0.605	84	-0.343	0.006	2.19	0.804	42	2.615	0.633	39	-0.42	0.01
CGM	70.335	18.775	53	70.526	21.609	95	-0.191	0.957	72.096	16.838	44	69.066	23.460	44	3.030	0.488
smsuc_imp	2.231	0.645	52	2.202	0.824	94	0.029	0.829	2.227	0.677	44	2.186	0.88	43	0.041	0.807
smpf_imp	2.327	0.617	52	2.215	0.735	93	0.112	0.354	2.409	0.583	44	2.214	0.782	42	0.195	0.193
smed_imp	2.058	0.669	52	2.152	0.725	92	-0.094	0.442	2.091	0.709	44	2.048	0.731	42	0.043	0.781
brdsuc_imp	2.135	0.715	52	2.309	0.79	94	-0.174	0.19	2.091	0.741	44	2.326	0.747	43	-0.23	0.145
brdprf_imp	2.096	0.693	52	1.903	0.861	93	0.193	0.168	2.136	0.702	44	2	0.883	42	0.136	0.429
brded_imp	2.058	0.698	52	2.138	0.712	94	-0.081	0.511	2.023	0.731	44	2.093	0.684	43	-0.07	0.645
IIDM	82.767	14.875	53	81.193	23.997	95	1.5743	0.666	84.394	12.447	44	79.091	26.651	44	5.303	0.235
prfqal_imp	2.642	0.484	53	2.648	0.639	91	-0.007	0.946	2.659	0.479	44	2.619	0.697	42	0.04	0.756
prfacc_imp	2.623	0.489	53	2.674	0.617	89	-0.052	0.605	2.659	0.479	44	2.634	0.733	41	0.025	0.852
cpdss_imp	2.308	0.755	52	2.438	0.865	89	-0.131	0.367	2.364	0.685	44	2.425	0.931	40	-0.06	0.73
cldss_imp	2.314	0.583	51	2.483	0.77	89	-0.169	0.175	2.326	0.606	43	2.436	0.821	39	-0.11	0.488
ehr_imp	2.712	0.536	52	2.609	0.679	92	0.103	0.349	2.705	0.553	44	2.667	0.65	42	0.038	0.771

Table K.3 Aggregate mean ratings of how *challenging* (Likert scale from 0 to 4) issues and domains will be to the organization's long-term sustainability and ANOVA results comparing 2011 data to 2004 data

Strategic Issues & Domains	All Respondents:								Responded in both years:							
	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference (2011-2004)	p-value	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference in Means (2011-2004)	p-value
HRC	44.811	12.84	53	53.75	16.771	95	-8.939	0.001	45.881	12.350	44	53.551	18.204	44	-7.670	0.023
rec_ch	2.132	0.941	53	3	0.679	92	-0.868	<0.0001	2.159	0.963	44	2.952	0.764	42	-0.79	<0.0001
clsuc_ch	2.059	0.785	51	1.955	0.891	89	0.104	0.49	2.093	0.781	43	1.976	0.908	41	0.117	0.526
inj_ch	1.804	0.8	51	1.901	0.967	91	-0.097	0.543	1.791	0.833	43	1.976	1	42	-0.19	0.355
lab_ch	1.373	0.848	51	2.156	0.959	90	-0.783	<0.0001	1.386	0.813	44	2.225	1	40	-0.84	<0.0001
PCM	42.571	17.807	53	54.474	20.07	95	-11.9	<0.0001	44.034	16.887	44	52.273	19.630	44	-8.239	0.038
innpc_ch	1.942	0.85	52	2.382	0.873	89	-0.440	0.004	1.932	0.873	44	2.333	0.838	39	-0.4	0.036
inntec_ch	1.865	1.01	52	2.289	1.041	90	-0.424	0.02	1.886	0.97	44	2.25	0.87	40	-0.36	0.075
adv_s_ch	1.423	0.893	52	2.120	0.959	92	-0.696	<0.0001	1.455	0.875	44	2.167	0.853	42	-0.71	<0.0001
infec_ch	1.712	0.893	52	2.337	0.917	92	-0.625	<0.0001	1.773	0.886	44	2.286	0.995	42	-0.51	0.013
FE	54.088	18.535	53	62.632	20.802	95	-8.544	0.014	56.250	17.803	44	65.909	20.319	44	-9.659	0.02
innop_ch	2.346	1.046	52	2.875	0.907	88	-0.529	0.002	2.409	1.064	44	3.075	0.656	40	-0.67	0.001
fcpln_ch	1.981	1.196	52	2.411	1.048	90	-0.430	0.027	2.068	1.189	44	2.561	1.026	41	-0.49	0.045
fund_ch	2.288	0.957	52	2.624	0.859	93	-0.335	0.032	2.273	0.973	44	2.791	0.773	43	-0.52	0.007
CE	38.267	14.553	53	44.901	16.68	95	-6.635	0.017	38.068	15.029	44	44.886	18.173	44	-6.818	0.058
cag_ch	1.519	1.093	52	1.637	0.901	91	-0.118	0.487	1.581	1.118	43	1.683	0.986	41	-0.1	0.661
demo_ch	1.673	1.133	52	2.349	0.991	86	-0.676	<0.0001	1.581	1.139	43	2.564	0.788	39	-0.98	<0.0001
hc_ch	1.608	1.002	51	1.716	0.922	88	-0.108	0.52	1.614	1.061	44	1.585	1.024	41	0.028	0.901
right_ch	1.154	0.894	52	1.682	0.941	88	-0.528	0.001	1.068	0.846	44	1.659	1.039	41	-0.59	0.005
pegov_ch	1.404	0.934	52	1.670	0.943	88	-0.267	0.107	1.341	0.914	44	1.61	0.972	41	-0.27	0.192
pr_ch	1.365	0.908	52	1.922	0.902	90	-0.557	0.001	1.318	0.883	44	1.927	0.932	41	-0.61	0.003
ptsat_ch	1.902	0.922	51	2.25	0.86	92	-0.348	0.025	1.955	0.914	44	2.357	0.85	42	-0.4	0.038
pop_h_ch	1.923	1.311	52	2.161	0.951	87	-0.238	0.219	1.795	1.286	44	2.205	0.864	39	-0.41	0.097
SIP	30.458	16.731	53	40.789	17.617	95	-10.33	0.001	30.032	16.363	44	39.935	19.152	44	-9.903	0.011
collab_ch	1.208	0.927	53	1.843	1.076	89	-0.635	<0.0001	1.159	0.939	44	1.6	1.105	40	-0.44	0.051
acad_ch	1.151	0.886	53	1.888	0.959	89	-0.737	<0.0001	1.091	0.83	44	2	0.988	42	-0.91	<0.0001
vint_ch	2.208	0.988	48	2.362	0.874	69	-0.154	0.376	2.225	1.05	40	2.414	0.78	29	-0.19	0.416
regn_ch	2.2	1.088	50	2.640	1.062	86	-0.440	0.023	2.095	1.031	42	2.769	1.012	39	-0.67	0.004
gov_ch	1.510	0.88	51	2.711	1.008	90	-1.201	<0.0001	1.535	0.855	43	2.683	1.083	41	-1.15	<0.0001
voltr_ch	1.137	0.917	51	1.889	0.999	90	-0.752	<0.0001	1.14	0.915	43	1.85	1.122	40	-0.71	0.002
hint_ch	2.020	1.051	49	2.583	0.895	84	-0.563	0.001	1.976	0.961	41	2.59	0.91	39	-0.61	0.004
CGM	26.651	19.702	53	38.728	19.218	95	-12.08	<0.0001	26.420	19.748	44	38.542	19.975	44	-12.121	0.005
smsuc_ch	1.529	1.027	51	1.849	0.846	93	-0.320	0.046	1.488	1.032	43	1.744	0.819	43	-0.26	0.207
smprf_ch	0.784	0.945	51	1.344	1.04	90	-0.560	0.002	0.767	0.972	43	1.381	1.081	42	-0.61	0.007
smed_ch	1.157	1.046	51	1.681	0.953	91	-0.524	0.003	1.186	1.029	43	1.69	1	42	-0.5	0.024
brdsuc_ch	1.216	0.945	51	1.763	0.937	93	-0.548	0.001	1.186	0.932	43	1.744	0.928	43	-0.56	0.007
brdprf_ch	0.980	1.01	51	1.402	0.95	92	-0.422	0.014	0.93	1.009	43	1.429	1.016	42	-0.5	0.026
brded_ch	0.980	0.927	51	1.565	0.987	92	-0.585	0.001	0.93	0.91	43	1.581	1.118	43	-0.65	0.004
IIDM	47.264	17.584	53	59.149	20.129	94	-11.88	<0.0001	47.386	17.471	44	54.205	22.203	44	-6.818	0.113
prfqal_ch	1.5	0.804	52	2.286	0.922	91	-0.786	<0.0001	1.535	0.797	43	2.167	0.961	42	-0.63	0.001
prfacc_ch	1.538	0.874	52	2.385	0.916	91	-0.846	<0.0001	1.558	0.854	43	2.238	0.932	42	-0.68	0.001
cpdss_ch	1.804	0.939	51	2.494	0.895	85	-0.690	<0.0001	1.791	0.965	43	2.459	0.869	37	-0.67	0.002
clsdss_ch	2.176	0.865	51	2.467	0.974	90	-0.290	0.079	2.14	0.915	43	2.275	1.062	40	-0.14	0.534
ehr_ch	2.745	0.796	51	2.75	0.847	92	-0.005	0.973	2.674	0.778	43	2.619	0.909	42	0.055	0.764

Table K.4 Differences over time of small community hospitals' *articulation* of strategic issues and domains (all 2011 respondents and those that responded in both years)

Strategic Issues & Domains	All 2011 Responses			Responded both survey years (2004 and 2011)							
	Mean (2011)	sd	n	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference	p-value
HRC	68.75	28.45	12	83.33	30.28	6	50	38.73	6	33.333	0.128
rec_art	0.917	0.289	12	0.833	0.408	6	0.667	0.516	6	0.167	0.549
clsuc_art	0.545	0.522	11	0.833	0.408	6	0.333	0.516	6	0.5	0.092
inj_art	0.833	0.389	12	1	0	6	0.6	0.548	5	0.4	0.104
lab_art	0.545	0.522	11	0.667	0.516	6	0.6	0.548	5	0.067	0.84
PCM	68.75	28.45	12	83.33	20.41	6	41.67	30.28	6	41.667	0.019
innpc_art	0.909	0.302	11	1	0	6	0.667	0.516	6	0.333	0.145
inntec_art	0.455	0.522	11	0.667	0.516	6	0	0	6	0.667	0.01
advn_art	0.909	0.302	11	0.833	0.408	6	0.333	0.516	6	0.5	0.092
infec_art	0.727	0.467	11	0.833	0.408	6	0.667	0.516	6	0.167	0.549
FE	66.67	31.78	12	83.33	27.89	6	50	40.82	6	33.333	0.13
innop_art	0.818	0.405	11	1	0	6	0.667	0.516	6	0.333	0.145
fcpln_art	0.833	0.389	12	0.833	0.408	6	0.5	0.548	6	0.333	0.26
fund_art	0.455	0.522	11	0.667	0.516	6	0.333	0.516	6	0.333	0.29
CE	66.67	24.03	12	79.17	12.91	6	50	36.23	6	29.167	0.093
cag_art	0.583	0.515	12	0.667	0.516	6	0.333	0.516	6	0.333	0.29
demo_art	0.75	0.452	12	1	0	6	0.333	0.516	6	0.667	0.01
hc_art	0.818	0.405	11	1	0	6	0.667	0.516	6	0.333	0.145
right_art	0.545	0.522	11	0.833	0.408	6	0.667	0.516	6	0.167	0.549
pegov_art	0.636	0.505	11	0.667	0.516	6	0.5	0.548	6	0.167	0.599
pr_art	0.818	0.405	11	0.833	0.408	6	0.5	0.548	6	0.333	0.26
ptsat_art	1	0	11	1	0	6	0.667	0.516	6	0.333	0.145
poph_art	0.545	0.522	11	0.333	0.516	6	0.333	0.516	6	0	1
SIP	59.52	24.99	12	71.43	15.65	6	71.43	15.65	6	45.24	33.09
collab_art	0.667	0.492	12	0.833	0.408	6	0.333	0.516	6	0.5	0.092
acad_art	0.583	0.515	12	0.5	0.548	6	0.6	0.548	5	-0.1	0.77
vint_art	0.909	0.302	11	0.833	0.408	6	0.6	0.548	5	0.233	0.438
regn_art	0.455	0.522	11	0.5	0.548	6	0.167	0.408	6	0.333	0.26
gov_art	0.636	0.505	11	0.833	0.408	6	0.6	0.548	5	0.233	0.438
voltr_art	0.545	0.522	11	0.667	0.516	6	0.8	0.447	5	-0.13	0.662
hint_art	0.636	0.505	11	0.833	0.408	6	0.6	0.548	5	0.233	0.438
CGM	41.67	36.58	12	55.56	38.97	6	50	39.44	6	5.556	0.811
smsuc_art	0.364	0.505	11	0.667	0.516	6	0.5	0.548	6	0.167	0.599
smprf_art	0.455	0.522	11	0.5	0.548	6	0.8	0.447	5	-0.3	0.353
smed_art	0.455	0.522	11	0.5	0.548	6	0.6	0.548	5	-0.1	0.77
brdsuc_art	0.364	0.505	11	0.333	0.516	6	0.5	0.548	6	-0.17	0.599
brdprf_art	0.455	0.522	11	0.667	0.516	6	0.333	0.516	6	0.333	0.29
brded_art	0.636	0.505	11	0.667	0.516	6	0.6	0.548	5	0.067	0.84
IDM	61.67	32.43	12	66.67	41.31	6	43.33	34.45	6	23.333	0.313
prfqal_art	0.833	0.389	12	0.833	0.408	6	0.667	0.516	6	0.167	0.549
prfacc_art	0.75	0.452	12	0.833	0.408	6	0.833	0.408	6	0	1
cpdss_art	0.4	0.516	10	0.6	0.548	5	0.167	0.408	6	0.433	0.166
cldss_art	0.5	0.527	10	0.6	0.548	5	0.167	0.408	6	0.433	0.166
ehr_art	0.9	0.316	10	0.8	0.447	5	0.333	0.516	6	0.467	0.148

Table K.5 Differences over time of small community hospitals' rating of *importance* of strategic issues and domains (all 2011 respondents and those responding in both years)

Strategic Issues & Domains	All 2011 Responses			Responded both survey years (2004 and 2011)							
	Mean (2011)	sd	n	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference	p-value
HRC	73.61	18.41	12	84.72	12.27	6	68.06	27.6	6	16.667	0.206
rec_imp	2.75	0.452	12	3	0	6	2.667	0.816	6	0.333	0.341
clsuc_imp	2.273	0.786	11	2.5	0.837	6	1.6	1.342	5	0.9	0.206
inj_imp	2.083	0.669	12	2.167	0.753	6	2.5	0.837	6	-0.33	0.485
lab_imp	2.091	0.701	11	2.5	0.548	6	2.5	0.577	4	0	1
PCM	71.53	27.86	12	87.5	11.49	6	70.83	22.82	6	16.667	0.141
innpc_imp	2.273	1.009	11	2.667	0.816	6	2.667	0.516	6	0	1
inntec_imp	2	0.775	11	2.5	0.548	6	1.8	1.304	5	0.7	0.259
advs_imp	2.455	0.688	11	2.5	0.837	6	2	0.894	6	0.5	0.341
infec_imp	2.636	0.674	11	2.833	0.408	6	2.333	1.033	6	0.5	0.296
FE	73.15	25.71	12	90.74	14.77	6	77.78	21.08	6	12.963	0.246
innop_imp	2.455	0.522	11	2.667	0.516	6	3	0	6	-0.33	0.145
fcpln_imp	2.167	1.03	12	2.833	0.408	6	2.2	0.837	5	0.633	0.134
fund_imp	2.364	0.674	11	2.667	0.516	6	2.6	0.548	5	0.067	0.84
CE	64.58	23.13	12	75.69	22.27	6	74.31	18.52	6	1.389	0.909
cag_imp	1.75	0.754	12	2.167	0.753	6	2	0.632	6	0.167	0.687
demo_imp	2.333	0.492	12	2.5	0.548	6	2.4	0.548	5	0.1	0.77
hc_imp	2	0.775	11	2.333	0.816	6	2.333	0.816	6	0	1
right_imp	1.818	0.874	11	2.333	0.816	6	2.5	0.548	6	-0.17	0.687
pegov_imp	2.273	0.786	11	2.333	0.816	6	2.2	0.837	5	0.133	0.796
pr_imp	2	1	11	1.833	1.169	6	2	0.894	6	-0.17	0.787
ptsat_imp	2.5	0.527	10	2.667	0.516	6	2.667	0.816	6	0	1
poph_imp	2.091	0.831	11	2	0.894	6	2.5	0.548	6	-0.5	0.27
SIP	66.27	23.81	12	75.4	10.61	6	55.56	31.1	6	19.841	0.17
collab_imp	2.182	0.874	11	2.5	0.837	6	1.8	1.304	5	0.7	0.308
acad_imp	2.273	0.786	11	2.5	0.837	6	2.2	0.837	5	0.3	0.568
vint_imp	3	0	10	3	0	5	3	0	4	0	
regn_imp	1.636	0.674	11	1.667	0.816	6	1.6	0.894	5	0.067	0.9
gov_imp	2	0.943	10	2.167	0.983	6	2.5	0.577	4	-0.33	0.562
voltr_imp	2.3	0.483	10	2.5	0.548	6	2.8	0.447	5	-0.3	0.353
hint_imp	2.7	0.483	10	2.4	0.548	5	2	1	3	0.4	0.482
CGM	71.76	27.47	12	84.26	18.73	6	72.22	26.76	6	12.037	0.388
smsuc_imp	2.636	0.505	11	2.833	0.408	6	2	1.265	6	0.833	0.156
smprf_imp	2.364	0.674	11	2.667	0.516	6	2.167	0.753	6	0.5	0.209
smed_imp	2.273	0.67	11	2.5	0.837	6	2.167	0.753	6	0.333	0.485
brdsuc_imp	2.364	0.674	11	2.333	0.816	6	2.5	0.548	6	-0.17	0.687
brdprf_imp	2.182	0.603	11	2.5	0.548	6	2	1.265	6	0.5	0.395
brded_imp	2.273	0.647	11	2.333	0.816	6	2.167	0.753	6	0.167	0.721
IIDM	76.67	20.40	12	83.33	13.17	6	53.33	28.6	6	30	0.042
prfqal_imp	2.5	0.522	12	2.5	0.548	6	2.167	1.169	6	0.333	0.541
prfacc_imp	2.417	0.515	12	2.5	0.548	6	2	1.265	6	0.5	0.395
cpdss_imp	2	1	11	2.333	0.816	6	1.5	1.291	4	0.833	0.242
cidss_imp	2.5	0.527	10	2.8	0.447	5	1.5	1.291	4	1.3	0.071
ehr_imp	2.909	0.302	11	2.833	0.408	6	2.2	1.304	5	0.633	0.285

Table K.6 Differences over time of small community hospitals' rating of *challenge* of strategic issues and domains (all 2011 respondents and those responding in both years)

Strategic Issues & Domains	All 2011 Responses			Responded both survey years (2004 and 2011)							
	Mean (2011)	sd	n	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference	p-value
HRC	45.31	15.34	12	57.29	10.01	6	44.79	20.32	6	12.5	0.206
rec_ch	2.583	1.084	12	3.333	0.516	6	3	1.549	6	0.333	0.628
clsuc_ch	1.818	0.751	11	2.167	0.753	6	1.2	0.837	5	0.967	0.074
inj_ch	1.917	0.669	12	2.167	0.753	6	2.167	0.983	6	0	1
lab_ch	1.182	0.751	11	1.5	0.548	6	1.5	0.577	4	0	1
PCM	35.94	17.30	12	36.46	7.307	6	37.5	17.68	6	-1.042	0.897
innpc_ch	1.909	0.701	11	1.667	0.516	6	1.667	1.211	6	0	1
inntec_ch	1.909	1.136	11	1.833	0.753	6	1.6	0.894	5	0.233	0.649
adv_s_ch	1.091	0.539	11	1	0	6	1.5	0.837	6	-0.5	0.174
infec_ch	1.364	1.027	11	1.333	1.033	6	1.5	1.225	6	-0.17	0.804
FE	49.31	19.93	12	56.94	16.17	6	52.78	13.61	6	4.1667	0.64
innop_ch	2	1.095	11	2.167	1.329	6	2.667	1.033	6	-0.5	0.484
fcpln_ch	1.75	1.138	12	2.167	0.983	6	2	1.225	5	0.167	0.808
fund_ch	2.545	0.934	11	2.5	1.049	6	2	0.894	6	0.5	0.395
CE	41.93	15.22	12	45.31	16.62	6	37.5	17	6	7.8125	0.44
cag_ch	1.833	1.337	12	2.333	1.506	6	1.667	0.816	6	0.667	0.363
demo_ch	2.25	1.055	12	2.167	1.169	6	2.8	0.447	5	-0.63	0.285
hc_ch	1.818	1.168	11	2	1.549	6	1.167	0.753	6	0.833	0.263
right_ch	1.455	0.934	11	1.5	0.837	6	1.167	0.753	6	0.333	0.485
pegov_ch	2	0.894	11	1.833	0.983	6	1	0.632	6	0.833	0.111
pr_ch	1.182	0.982	11	1	0.894	6	1.167	0.753	6	-0.17	0.734
ptsat_ch	1.4	0.966	10	1.5	1.049	6	1.667	1.211	6	-0.17	0.804
pop_h_ch	2.455	1.368	11	2.167	1.472	6	2.2	1.095	5	-0.03	0.968
SIP	39.58	24.05	12	48.81	23.11	6	30.95	14.4	6	17.857	0.139
collab_ch	1.5	1.243	12	1.667	1.506	6	1	1.732	5	0.667	0.511
acad_ch	1.5	1.314	12	1.667	1.366	6	0.8	0.447	5	0.867	0.21
vint_ch	2.5	0.85	10	2.6	1.14	5	2	1	3	0.6	0.482
regn_ch	2.273	1.009	11	2	0.894	6	3	0.707	5	-1	0.074
gov_ch	1.364	0.924	11	1.5	0.548	6	2	1.414	4	-0.5	0.447
voltr_ch	1.818	1.168	11	2.333	0.816	6	1.2	1.095	5	1.133	0.08
hint_ch	2.3	1.16	10	2.2	0.837	5	2.667	1.155	3	-0.47	0.528
CGM	36.46	24.43	12	47.22	22.62	6	33.33	15.81	6	13.889	0.246
smsuc_ch	2	0.894	11	2	0.894	6	1.167	0.753	6	0.833	0.111
smpf_ch	1	1	11	1.167	1.169	6	0.667	0.516	6	0.5	0.36
smed_ch	1.455	1.214	11	1.833	0.983	6	1.333	0.516	6	0.5	0.296
brdsuc_ch	1.909	1.221	11	2.333	1.211	6	1.833	1.169	6	0.5	0.484
brdprf_ch	1.545	1.128	11	2.167	0.983	6	1.167	1.472	6	1	0.197
brded_ch	1.636	1.027	11	1.833	0.983	6	1.833	1.169	6	0	1
IIDM	54.17	19.40	12	61.67	10.8	6	34.17	20.84	6	27.5	0.017
prfqal_ch	1.583	0.793	12	1.833	0.753	6	1.5	1.378	6	0.333	0.614
prfacc_ch	1.75	0.866	12	2	0.632	6	1.333	1.506	6	0.667	0.341
cpdss_ch	2.273	1.009	11	2.667	0.816	6	1.4	0.894	5	1.267	0.036
cidss_ch	2.727	0.467	11	2.833	0.408	6	1.4	0.894	5	1.433	0.006
ehr_ch	3.182	0.603	11	3	0.632	6	2	1	5	1	0.074

Table K.7 Differences over time of large community hospitals' articulation of strategic issues and domains (all 2011 respondents and those that responded in both years)

Strategic Issues & Domains	All 2011 Responses			Responded both survey years (2004 and 2011)							
	Mean (2011)	sd	n	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference	p-value
HRC	62.10	28.77	31	65.52	26.23	29	75	29.88	29	-9.483	0.204
rec_art	0.871	0.341	31	0.931	0.258	29	0.897	0.31	29	0.034	0.647
clsuc_art	0.516	0.508	31	0.552	0.506	29	0.643	0.488	28	-0.09	0.492
inj_art	0.774	0.425	31	0.793	0.412	29	0.828	0.384	29	-0.03	0.743
lab_art	0.323	0.475	31	0.345	0.484	29	0.655	0.484	29	-0.31	0.018
PCM	73.39	25.77	31	75.86	24.53	29	75	32.73	29	0.8621	0.91
innpc_art	0.871	0.341	31	0.897	0.31	29	0.857	0.356	28	0.039	0.657
inntec_art	0.516	0.508	31	0.552	0.506	29	0.69	0.471	29	-0.14	0.287
adv_s_art	0.774	0.425	31	0.828	0.384	29	0.75	0.441	28	0.078	0.481
infec_art	0.774	0.425	31	0.759	0.435	29	0.786	0.418	28	-0.03	0.812
FE	65.59	30.41	31	67.82	30.19	29	77.01	32.25	29	-9.195	0.267
innop_art	0.935	0.25	31	0.931	0.258	29	0.786	0.418	28	0.145	0.118
fcpln_art	0.677	0.475	31	0.724	0.455	29	0.929	0.262	28	-0.2	0.043
fund_art	0.355	0.486	31	0.379	0.494	29	0.655	0.484	29	-0.28	0.036
CE	69.76	22.54	31	71.55	20.57	29	73.71	24.63	29	-2.155	0.719
cag_art	0.548	0.506	31	0.586	0.501	29	0.621	0.494	29	-0.03	0.793
demo_art	0.774	0.425	31	0.793	0.412	29	0.929	0.262	28	-0.14	0.146
hc_art	0.677	0.475	31	0.69	0.471	29	0.857	0.356	28	-0.17	0.137
right_art	0.677	0.475	31	0.724	0.455	29	0.571	0.504	28	0.153	0.235
pegov_art	0.806	0.402	31	0.828	0.384	29	0.607	0.497	28	0.22	0.066
pr_art	0.581	0.502	31	0.586	0.501	29	0.786	0.418	28	-0.2	0.109
ptsat_art	1	0	31	1	0	29	0.857	0.356	28	0.143	0.035
poph_art	0.516	0.508	31	0.517	0.509	29	0.857	0.356	28	-0.34	0.005
SIP	58.99	30.58	31	62.07	28.9	29	77.34	24	29	-15.27	0.033
collab_art	0.581	0.502	31	0.621	0.494	29	0.862	0.351	29	-0.24	0.036
acad_art	0.677	0.475	31	0.724	0.455	29	0.741	0.447	27	-0.02	0.891
vint_art	0.839	0.374	31	0.897	0.31	29	0.815	0.396	27	0.082	0.392
regn_art	0.633	0.49	30	0.679	0.476	28	0.714	0.46	28	-0.04	0.776
gov_art	0.323	0.475	31	0.31	0.471	29	0.821	0.39	28	-0.51	<0.0001
voltr_art	0.452	0.506	31	0.448	0.506	29	0.704	0.465	27	-0.26	0.055
hint_art	0.69	0.471	29	0.714	0.46	28	0.966	0.186	29	-0.25	0.009
CGM	45.16	43.93	31	48.28	43.72	29	58.05	39.75	29	-9.77	0.377
smsuc_art	0.419	0.502	31	0.448	0.506	29	0.621	0.494	29	-0.17	0.195
smprf_art	0.581	0.502	31	0.621	0.494	29	0.864	0.351	22	-0.24	0.056
smed_art	0.452	0.506	31	0.483	0.509	29	0.483	0.509	29	0	1
brdsuc_art	0.387	0.495	31	0.414	0.501	29	0.643	0.488	28	-0.23	0.086
brdprf_art	0.452	0.506	31	0.483	0.509	29	0.5	0.509	28	-0.02	0.899
brded_art	0.419	0.502	31	0.448	0.506	29	0.643	0.488	28	-0.19	0.145
IIDM	76.77	30.15	31	77.24	30.11	29	80.69	29.99	29	-3.448	0.664
prfqal_art	0.935	0.25	31	0.931	0.258	29	0.964	0.189	28	-0.03	0.582
prfacc_art	0.935	0.25	31	0.931	0.258	29	0.821	0.39	28	0.11	0.215
cpdss_art	0.645	0.486	31	0.655	0.484	29	0.759	0.435	29	-0.1	0.396
cidss_art	0.633	0.49	30	0.643	0.488	28	0.724	0.455	29	-0.08	0.518
ehr_art	0.71	0.461	31	0.724	0.455	29	0.828	0.384	29	-0.1	0.354

Table K.8 Differences over time of large community hospitals' rating of *importance* of strategic issues and domains (all 2011 respondents and those responding in both years)

Strategic Issues & Domains	All 2011 Responses			Responded both survey years (2004 and 2011)							
	Mean (2011)	sd	n	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference	p-value
HRC	73.89	12.71	30	74.4	12.2	28	79.89	19.61	29	-5.48	0.212
rec_imp	2.533	0.571	30	2.571	0.573	28	2.964	0.189	28	-0.39	0.001
clsuc_imp	2.433	0.626	30	2.5	0.577	28	2.5	0.577	28	0	1
inj_imp	2.2	0.664	30	2.179	0.67	28	2.25	0.799	28	-0.07	0.718
lab_imp	1.759	0.786	29	1.741	0.764	27	2.296	0.775	27	-0.56	0.011
PCM	79.84	14.07	31	79.31	14.37	29	80.36	26.28	28	-1.047	0.852
innpc_imp	2.613	0.615	31	2.621	0.622	29	2.84	0.374	25	-0.22	0.13
inntec_imp	1.871	0.846	31	1.862	0.875	29	2.222	0.892	27	-0.36	0.133
adv_imp	2.516	0.626	31	2.483	0.634	29	2.556	2.556	27	-0.07	0.684
infec_imp	2.581	0.62	31	2.552	0.632	29	2.778	0.424	27	-0.23	0.124
FE	79.57	15.21	31	80.46	15.04	29	82.38	25.81	29	-1.916	0.731
innop_imp	2.645	0.608	31	2.621	0.622	29	2.808	0.402	26	-0.19	0.197
fcpln_imp	2.258	0.815	31	2.31	0.806	29	2.577	0.643	26	-0.27	0.184
fund_imp	2.258	0.855	31	2.31	0.85	29	2.778	0.424	27	-0.47	0.013
CE	67.88	17.22	31	68.53	17.31	29	68.97	22.34	29	-0.431	0.935
cag_imp	1.9	0.712	30	1.929	0.716	28	2.037	0.808	27	-0.11	0.6
demo_imp	2.233	0.898	30	2.286	0.897	28	2.692	0.471	26	-0.41	0.044
hc_imp	2	0.73	31	2.034	0.731	29	2.346	0.797	26	-0.31	0.136
right_imp	1.935	0.892	31	1.931	0.923	29	1.92	0.759	25	0.011	0.962
pegov_imp	1.903	0.944	31	1.966	0.944	29	2.04	0.735	25	-0.07	0.751
pr_imp	1.871	0.922	31	1.897	0.939	29	2.269	0.724	26	-0.37	0.108
ptsat_imp	2.806	0.477	31	2.793	0.491	29	2.704	0.542	27	0.089	0.52
poph_imp	1.774	0.762	31	1.759	0.739	29	2.423	0.578	26	-0.66	0.001
SIP	69.89	15.13	31	71.1	14.67	29	77.83	19.6	29	-6.732	0.144
collab_imp	1.935	0.929	31	1.966	0.944	29	2.286	0.763	28	-0.32	0.166
acad_imp	2.194	0.833	31	2.241	0.83	29	2.286	0.713	28	-0.04	0.83
vint_imp	2.6	0.563	30	2.679	0.476	28	2.56	0.712	25	0.119	0.475
regn_imp	2.31	0.806	29	2.321	0.819	28	2.296	0.869	27	0.025	0.912
gov_imp	1.903	0.539	31	1.897	0.557	29	2.786	0.499	28	-0.89	<0.0001
voltr_imp	1.871	0.885	31	1.862	0.915	29	2.577	0.643	26	-0.71	0.002
hint_imp	2.097	0.87	31	2.138	0.875	29	2.778	0.424	27	-0.64	0.001
CGM	70.07	17.78	31	70.31	17.83	29	68.01	24.65	29	2.2989	0.686
smsuc_imp	2.032	0.605	31	2.034	0.626	29	2.286	0.763	28	-0.25	0.179
smprf_imp	2.29	0.643	31	2.345	0.614	29	2.148	0.864	27	0.197	0.328
smed_imp	2	0.73	31	2.034	0.731	29	2	0.679	27	0.034	0.856
brdsuc_imp	2.065	0.772	31	2.034	0.778	29	2.321	0.772	28	-0.29	0.168
brdprf_imp	2.097	0.79	31	2.103	0.772	29	1.964	0.881	28	0.139	0.528
brded_imp	2.129	0.718	31	2.103	0.724	29	2.107	0.685	28	-0	0.984
IIDM	83.87	13.31	31	83.22	13.41	29	80.92	26.77	29	2.2989	0.681
prfqal_imp	2.677	0.475	31	2.655	0.484	29	2.704	0.542	27	-0.05	0.725
prfacc_imp	2.645	0.486	31	2.621	0.494	29	2.731	0.604	26	-0.11	0.461
cpdss_imp	2.355	0.709	31	2.31	0.712	29	2.519	0.849	27	-0.21	0.323
cidss_imp	2.226	0.617	31	2.207	0.62	29	2.5	0.762	26	-0.29	0.122
ehr_imp	2.677	0.541	31	2.69	0.541	29	2.679	0.548	28	0.011	0.939

Table K.9 Differences over time of large community hospitals' rating of *challenge* of strategic issues and domains (all 2011 respondents and those responding in both years)

Strategic Issues & Domains	All 2011 Responses			Responded both survey years (2004 and 2011)							
	Mean (2011)	sd	n	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference	p-value
HRC	44.96	12.85	31	43.75	12.39	29	53.88	18.56	29	-10.13	0.018
rec_ch	2.032	0.912	31	2	0.926	29	2.963	0.518	27	-0.96	<0.0001
clsuc_ch	2.167	0.791	30	2.143	0.803	28	2.074	0.874	27	0.069	0.762
inj_ch	1.733	0.828	30	1.679	0.819	28	2	0.961	27	-0.32	0.187
lab_ch	1.387	0.844	31	1.31	0.806	29	2.222	1.121	27	-0.91	0.001
PCM	42.14	17.53	31	42.24	17.65	29	53.45	20.36	29	-11.21	0.029
innpc_ch	1.839	0.898	31	1.862	0.915	29	2.375	0.711	24	-0.51	0.029
inntec_ch	1.806	1.078	31	1.828	1.104	29	2.346	0.892	26	-0.52	0.063
adv_s_ch	1.419	0.923	31	1.379	0.903	29	2.333	0.784	27	-0.95	<0.0001
infec_ch	1.677	0.832	31	1.69	0.85	29	2.481	0.935	27	-0.79	0.002
FE	56.18	18.00	31	56.32	18.32	29	65.23	22.28	29	-8.908	0.102
innop_ch	2.452	1.028	31	2.414	1.053	29	3.16	0.624	25	-0.75	0.003
fcpln_ch	2.097	1.326	31	2.103	1.345	29	2.556	1.013	27	-0.45	0.164
fund_ch	2.194	1.014	31	2.241	1.023	29	2.821	0.723	28	-0.58	0.017
CE	36.79	14.38	31	36.85	14.74	29	45.26	18.91	29	-8.405	0.064
cag_ch	1.433	1.006	30	1.429	1.034	28	1.615	1.023	26	-0.19	0.508
demo_ch	1.5	1.196	30	1.536	1.232	28	2.64	0.7	25	-1.1	<0.0001
hc_ch	1.516	0.996	31	1.517	1.022	29	1.654	1.129	26	-0.14	0.64
right_ch	1.065	0.854	31	1.034	0.865	29	1.808	1.132	26	-0.77	0.006
pegov_ch	1.323	0.945	31	1.31	0.967	29	1.615	1.023	26	-0.31	0.261
pr_ch	1.323	0.871	31	1.31	0.891	29	2.038	0.916	26	-0.73	0.004
ptsat_ch	2.032	0.836	31	2.069	0.842	29	2.556	0.698	27	-0.49	0.023
poph_ch	1.677	1.249	31	1.69	1.285	29	2.32	0.802	25	-0.63	0.039
SIP	27.88	13.50	31	26.85	13.32	29	38.92	20.79	29	-12.07	0.011
collab_ch	1.097	0.87	31	1.034	0.865	29	1.704	1.031	27	-0.67	0.011
acad_ch	1.129	0.763	31	1.069	0.753	29	2.036	0.838	28	-0.97	<0.0001
vint_ch	2.241	1.023	29	2.296	1.031	27	2.444	0.856	18	-0.15	0.617
regn_ch	2.033	1.129	30	2	1.089	28	2.654	1.093	26	-0.65	0.032
gov_ch	1.355	0.839	31	1.345	0.857	29	2.679	1.124	28	-1.33	<0.0001
voltr_ch	0.903	0.831	31	0.897	0.86	29	1.769	1.107	26	-0.87	0.002
hint_ch	1.806	1.014	31	1.862	1.026	29	2.667	0.92	27	-0.8	0.003
CGM	23.66	18.14	31	22.41	17.97	29	36.21	20.6	29	-13.79	0.009
smsuc_ch	1.4	1.037	30	1.357	1.062	28	1.786	0.833	28	-0.43	0.099
smprf_ch	0.867	0.973	30	0.821	0.983	28	1.222	1.013	27	-0.4	0.142
smed_ch	1.1	1.029	30	1.071	1.052	28	1.63	1.043	27	-0.56	0.053
brdsuc_ch	1.033	0.809	30	0.964	0.793	28	1.643	0.911	28	-0.68	0.004
brdprf_ch	0.7	0.877	30	0.643	0.87	28	1.464	0.962	28	-0.82	0.001
brded_ch	0.767	0.858	30	0.714	0.854	28	1.357	1.096	28	-0.64	0.018
IIDM	45.48	16.95	31	45.17	17.5	29	56.03	21.85	29	-10.86	0.041
prfqal_ch	1.5	0.777	30	1.464	0.793	28	2.222	0.847	27	-0.76	0.001
prfacc_ch	1.533	0.86	30	1.5	0.882	28	2.296	0.724	27	-0.8	0.001
cpdss_ch	1.667	0.922	30	1.643	0.951	28	2.667	0.761	24	-1.02	<0.0001
cidss_ch	2.067	0.785	30	2.071	0.813	28	2.385	1.061	26	-0.31	0.227
ehr_ch	2.633	0.765	30	2.679	0.772	28	2.75	0.799	28	-0.07	0.735

Table K.10 Differences over time of teaching hospitals' *articulation* of strategic issues and domains (all 2011 respondents and those that responded in both years)

Strategic Issues & Domains	All 2011 Responses			Responded both survey years (2004 and 2011)							
	Mean (2011)	sd	n	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference	p-value
HRC	70.00	28.38	10	69.44	30.05	9	80.56	20.83	9	-11.11	0.375
rec_art	0.9	0.316	10	0.889	0.333	9	1	0	9	-0.111	0.332
clsuc_art	0.7	0.483	10	0.778	0.441	9	0.556	0.527	9	0.222	0.346
inj_art	0.9	0.316	10	0.889	0.333	9	0.889	0.333	9	0	1
lab_art	0.3	0.483	10	0.222	0.441	9	0.778	0.441	9	-0.556	0.017
PCM	87.50	17.68	10	86.11	18.16	9	88.89	18.16	9	-2.778	0.75
innpc_art	0.9	0.316	10	0.889	0.333	9	1	0	9	-0.111	0.332
inntec_art	1	0	10	1	0	9	0.778	0.441	9	0.222	0.15
adv_s_art	0.8	0.422	10	0.778	0.441	9	0.889	0.333	9	-0.111	0.555
infec_art	0.8	0.422	10	0.778	0.441	9	0.889	0.333	9	-0.111	0.555
FE	76.67	31.62	10	74.07	32.39	9	85.19	33.79	9	-11.11	0.487
innop_art	0.8	0.422	10	0.778	0.441	9	0.889	0.333	9	-0.111	0.555
fcpln_art	0.9	0.316	10	0.889	0.333	9	0.875	0.354	8	0.014	0.935
fund_art	0.6	0.516	10	0.556	0.527	9	0.889	0.333	9	-0.333	0.128
CE	65.00	20.24	10	69.44	15.45	9	83.33	15.31	9	-13.89	0.073
cag_art	0.6	0.516	10	0.667	0.5	9	0.875	0.354	8	-0.208	0.343
demo_art	0.8	0.422	10	0.889	0.333	9	0.889	0.333	9	0	1
hc_art	0.7	0.483	10	0.778	0.441	9	0.889	0.333	9	-0.111	0.555
right_art	0.8	0.422	10	0.778	0.441	9	0.667	0.5	9	0.111	0.624
pegov_art	0.4	0.516	10	0.444	0.527	9	0.667	0.5	9	-0.222	0.372
pr_art	0.6	0.516	10	0.667	0.5	9	0.889	0.333	9	-0.222	0.284
ptsat_art	1	0	10	1	0	9	1	0	9	0	
poph_art	0.333	0.5	9	0.375	0.518	8	0.889	0.333	9	-0.514	0.026
SIP	61.43	31.62	10	66.67	28.57	9	85.71	15.97	9	-19.05	0.1
collab_art	0.9	0.316	10	0.889	0.333	9	0.778	0.441	9	0.111	0.555
acad_art	0.8	0.422	10	0.889	0.333	9	1	0	9	-0.111	0.332
vint_art	0.778	0.441	9	0.875	0.354	8	0.778	0.441	9	0.097	0.626
regn_art	0.5	0.527	10	0.556	0.527	9	0.778	0.441	9	-0.222	0.346
gov_art	0.3	0.483	10	0.333	0.5	9	1	0	9	-0.667	0.001
voltr_art	0.4	0.516	10	0.444	0.527	9	0.778	0.441	9	-0.333	0.165
hint_art	0.778	0.441	9	0.875	0.354	8	1	0	8	-0.125	0.334
CGM	48.33	37.23	10	46.3	38.89	9	72.22	31.18	9	-25.93	0.138
smsuc_art	0.7	0.483	10	0.667	0.5	9	0.556	0.527	9	0.111	0.653
smpf_art	0.8	0.422	10	0.778	0.441	9	1	0	8	-0.222	0.176
smed_art	0.4	0.516	10	0.444	0.527	9	0.667	0.5	9	-0.222	0.372
brdsuc_art	0.4	0.516	10	0.333	0.5	9	0.778	0.441	9	-0.444	0.063
brdprf_art	0.3	0.483	10	0.333	0.5	9	0.778	0.441	9	-0.444	0.063
brded_art	0.3	0.483	10	0.222	0.441	9	0.75	0.463	8	-0.528	0.029
IIDM	74.00	29.89	10	77.78	29.06	9	91.11	20.28	9	-13.33	0.276
prfqal_art	0.9	0.316	10	0.889	0.333	9	1	0	9	-0.111	0.332
prfacc_art	0.9	0.316	10	0.889	0.333	9	0.889	0.333	9	0	1
cpdss_art	0.5	0.527	10	0.556	0.527	9	0.889	0.333	9	-0.333	0.128
cidss_art	0.5	0.527	10	0.556	0.527	9	0.889	0.333	9	-0.333	0.128
ehr_art	0.9	0.316	10	1	0	9	0.889	0.333	9	0.111	0.332

Table K.11 Differences over time of teaching hospitals' rating of *importance* of strategic issues and domains (all 2011 respondents and those responding in both years)

Strategic Issues & Domains	All 2011 Responses			Responded both survey years (2004 and 2011)							
	Mean (2011)	sd	n	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference	p-value
HRC	74.17	14.41	10	77.78	9.317	9	81.48	12.34	9	-3.704	0.483
rec_imp	2.5	0.527	10	2.444	0.527	9	3	0	9	-0.556	0.006
clsuc_imp	2.6	0.516	10	2.667	0.5	9	2.333	0.707	9	0.333	0.265
inj_imp	2.444	0.527	9	2.444	0.527	9	2.25	0.707	8	0.194	0.527
lab_imp	1.778	0.667	9	1.778	0.667	9	2.444	0.527	9	-0.667	0.032
PCM	81.67	14.59	10	79.63	13.89	9	87.04	14.5	9	-7.407	0.285
innpc_imp	2.8	0.422	10	2.778	0.441	9	2.889	0.333	9	-0.111	0.555
inntec_imp	2.4	0.516	10	2.333	0.5	9	2.444	0.726	9	-0.111	0.71
adv_s_imp	2.3	0.675	10	2.222	0.667	9	2.556	0.527	9	-0.333	0.257
infec_imp	2.3	0.675	10	2.222	0.667	9	2.556	0.527	9	-0.333	0.257
FE	84.44	11.94	10	83.95	12.56	9	96.3	7.857	9	-12.35	0.024
innop_imp	2.7	0.483	10	2.667	0.5	9	2.889	0.333	9	-0.222	0.284
fcpln_imp	2.2	0.632	10	2.222	0.667	9	2.889	0.333	9	-0.667	0.016
fund_imp	2.7	0.483	10	2.667	0.5	9	2.889	0.333	9	-0.222	0.284
CE	70.00	11.25	10	70.83	11.6	9	73.15	14.89	9	-2.315	0.718
cag_imp	1.9	0.738	10	2	0.707	9	1.778	0.667	9	0.222	0.503
demo_imp	2	0.816	10	1.889	0.782	9	2.444	0.527	9	-0.556	0.096
hc_imp	2.222	0.667	9	2.222	0.667	9	2.222	0.667	9	0	1
right_imp	2.1	0.876	10	2.111	0.928	9	1.667	0.866	9	0.444	0.309
pegov_imp	1.8	0.919	10	1.889	0.928	9	2.222	0.667	9	-0.333	0.394
pr_imp	2.4	0.516	10	2.333	0.5	9	2.333	0.707	9	0	1
ptsat_imp	2.9	0.316	10	2.889	0.333	9	2.667	0.5	9	0.222	0.284
pop_h_imp	1.7	0.675	10	1.667	0.707	9	2.222	0.667	9	-0.556	0.106
SIP	71.90	11.54	10	70.37	11.11	9	82.54	14.48	9	-12.17	0.063
collab_imp	2.4	0.516	10	2.333	0.5	9	2.25	1.035	8	0.083	0.832
acad_imp	2.4	0.699	10	2.333	0.707	9	3	0	8	-0.667	0.018
vint_imp	2.444	0.726	9	2.375	0.744	8	2.875	0.354	8	-0.5	0.108
regn_imp	2.1	0.738	10	2.111	0.782	9	2.75	0.707	8	-0.639	0.099
gov_imp	2.2	0.422	10	2.222	0.441	9	2.889	0.333	9	-0.667	0.002
voltr_imp	1.8	0.789	10	1.667	0.707	9	2.75	0.463	8	-1.083	0.002
hint_imp	2.222	0.667	9	2.25	0.707	8	2.333	0.866	9	-0.083	0.832
CGM	69.44	7.52	10	69.75	7.911	9	70.37	19.25	9	-0.617	0.93
smsuc_imp	2.4	0.699	10	2.444	0.726	9	2	1	9	0.444	0.297
smprf_imp	2.4	0.516	10	2.444	0.527	9	2.444	0.527	9	0	1
smed_imp	2	0.471	10	2	0.5	9	2.111	0.928	9	-0.111	0.756
brdsuc_imp	2.1	0.568	10	2.111	0.601	9	2.222	0.833	9	-0.111	0.75
brdprf_imp	2	0.471	10	2	0.5	9	2.125	0.641	8	-0.125	0.658
brded_imp	1.6	0.516	10	1.556	0.527	9	2	0.707	9	-0.444	0.15
IIDM	86.67	10.42	10	88.89	8.165	9	90.37	12.07	9	-1.481	0.764
prfqal_imp	2.7	0.483	10	2.778	0.441	9	2.667	0.707	9	0.111	0.694
prfacc_imp	2.8	0.422	10	2.889	0.333	9	2.778	0.441	9	0.111	0.555
cpdss_imp	2.5	0.527	10	2.556	0.527	9	2.556	0.882	9	0	1
cidss_imp	2.4	0.516	10	2.444	0.527	9	2.667	0.5	9	-0.222	0.372
ehr_imp	2.6	0.699	10	2.667	0.707	9	2.889	0.333	9	-0.222	0.406

Table K.12 Differences over time of teaching hospitals' rating of *challenge* of strategic issues and domains (all 2011 respondents and those responding in both years)

Strategic Issues & Domains	All 2011 Responses			Responded both survey years (2004 and 2011)							
	Mean (2011)	sd	n	Mean (2011)	sd	n	Mean (2004)	sd	n	Difference	p-value
HRC	43.75	10.62	10	45.14	10.26	9	58.33	15.31	9	-13.19	0.047
rec_ch	1.9	0.738	10	1.889	0.782	9	2.889	0.782	9	-1	0.015
clsuc_ch	2	0.816	10	1.889	0.782	9	2.111	0.928	9	-0.222	0.59
inj_ch	1.889	0.928	9	1.889	0.928	9	1.778	1.202	9	0.111	0.829
lab_ch	1.556	1.014	9	1.556	1.014	9	2.556	0.527	9	-1	0.018
PCM	51.88	16.94	10	54.86	14.91	9	58.33	14.66	9	-3.472	0.625
innpc_ch	2.3	0.823	10	2.333	0.866	9	2.667	0.707	9	-0.333	0.384
inntec_ch	2	0.667	10	2.111	0.601	9	2.333	0.707	9	-0.222	0.483
adv_s_ch	1.8	1.033	10	2	0.866	9	2.111	0.928	9	-0.111	0.796
infec_ch	2.2	0.789	10	2.333	0.707	9	2.222	0.833	9	0.111	0.764
FE	53.33	19.33	10	55.56	19.09	9	76.85	10.02	9	-21.3	0.009
innop_ch	2.4	1.075	10	2.556	1.014	9	3.111	0.333	9	-0.556	0.138
fcpln_ch	1.889	0.782	9	1.889	0.782	9	2.889	0.928	9	-1	0.025
fund_ch	2.3	0.823	10	2.222	0.833	9	3.222	0.441	9	-1	0.006
CE	38.44	15.03	10	37.15	15.34	9	48.61	16.91	9	-11.46	0.152
cag_ch	1.4	1.075	10	1.556	1.014	9	1.889	1.054	9	-0.333	0.504
demo_ch	1.5	0.85	10	1.333	0.707	9	2.222	1.093	9	-0.889	0.057
hc_ch	1.667	0.866	9	1.667	0.866	9	1.667	0.866	9	0	1
right_ch	1.1	0.994	10	0.889	0.782	9	1.556	0.882	9	-0.667	0.109
pegov_ch	1	0.667	10	1.111	0.601	9	2	0.866	9	-0.889	0.022
pr_ch	1.7	0.949	10	1.556	0.882	9	2.111	0.928	9	-0.556	0.211
ptsat_ch	2	1.054	10	1.889	1.054	9	2.222	0.833	9	-0.333	0.468
pop_h_ch	2.1	1.37	10	1.889	1.269	9	1.889	0.928	9	0	1
SIP	27.50	12.60	10	27.78	13.34	9	49.21	12.97	9	-21.43	0.003
collab_ch	1.2	0.632	10	1.222	0.667	9	1.625	0.916	8	-0.403	0.312
acad_ch	0.8	0.422	10	0.778	0.441	9	2.556	1.13	9	-1.778	<0.0001
vint_ch	1.778	0.972	9	1.75	1.035	8	2.5	0.535	8	-0.75	0.09
regn_ch	2.667	1	9	2.5	0.926	8	3	0.926	8	-0.5	0.298
gov_ch	2.222	0.667	9	2.25	0.707	8	3	0.707	9	-0.75	0.045
voltr_ch	1.111	0.333	9	1.125	0.354	8	2.444	1.014	9	-1.319	0.003
hint_ch	2.5	0.926	8	2.286	0.756	7	2.333	0.866	9	-0.048	0.91
CGM	24.17	15.81	10	25.46	16.2	9	49.54	18.1	9	-24.07	0.009
smsuc_ch	1.4	1.075	10	1.556	1.014	9	2	0.707	9	-0.444	0.297
smpf_ch	0.3	0.675	10	0.333	0.707	9	2.333	1	9	-2	<0.0001
smed_ch	1	0.943	10	1.111	0.928	9	2.111	1.054	9	-1	0.048
brdsuc_ch	1	0.667	10	1.111	0.601	9	2	0.866	9	-0.889	0.022
brdprf_ch	1.2	1.033	10	1	0.866	9	1.5	0.926	8	-0.5	0.268
brded_ch	0.9	0.738	10	1	0.707	9	2.111	1.054	9	-1.111	0.018
IIDM	44.50	16.91	10	45	17.85	9	61.67	18.2	9	-16.67	0.068
prfqal_ch	1.4	0.966	10	1.556	0.882	9	2.444	0.882	9	-0.889	0.048
prfacc_ch	1.3	0.949	10	1.444	0.882	9	2.667	0.707	9	-1.222	0.005
cpdss_ch	1.7	0.823	10	1.667	0.866	9	2.5	0.756	8	-0.833	0.053
cidss_ch	1.9	1.197	10	1.889	1.269	9	2.444	1.014	9	-0.556	0.32
ehr_ch	2.6	0.966	10	2.444	0.882	9	2.556	1.13	9	-0.111	0.819

Table K.13 ANOVA results using 2004 data comparing hospitals by type on their mean articulation of strategic issues and domains (hospitals that responded in both 2004 and 2011)

Strategic Issues & Domains	SC Mean	sd	n	LC Mean	sd	n	T Mean	sd	n	LC-SC	p value	T-SC	p value	T-LC	p value
HRC	50.00	38.73	6	75.00	29.88	29	80.56	20.83	9	25.00	0.201	30.56	0.171	5.56	1
rec_art	0.667	0.516	6	0.897	0.31	29	1	0	9	0.23	0.328	0.333	0.15	0.103	1
clsuc_art	0.333	0.516	6	0.643	0.488	29	0.556	0.527	9	0.31	0.528	0.222	1	-0.09	1
inj_art	0.6	0.548	6	0.828	0.384	29	0.889	0.333	9	0.228	0.722	0.289	0.59	0.061	1
lab_art	0.6	0.548	6	0.655	0.484	29	0.778	0.441	9	0.055	1	0.178	1	0.123	1
PCM	41.67	30.28	6	75.00	32.73	29	88.89	18.16	9	33.33	0.054	47.22	0.015	13.89	0.702
innpc_art	0.667	0.516	6	0.857	0.356	29	1	0	9	0.19	0.681	0.333	0.223	0.143	0.859
inntec_art	0	0	6	0.69	0.471	29	0.778	0.441	9	0.69	0.003	0.778	0.005	0.088	1
advs_art	0.333	0.516	6	0.75	0.441	29	0.889	0.333	9	0.417	0.115	0.556	0.058	0.139	1
infec_art	0.667	0.516	6	0.786	0.418	29	0.889	0.333	9	0.119	1	0.222	0.952	0.103	1
FE	50.00	40.82	6	77.01	32.25	29	85.19	33.79	9	27.01	0.244	35.19	0.163	8.17	1
innop_art	0.667	0.516	6	0.786	0.418	29	0.889	0.333	9	0.119	1	0.222	0.952	0.103	1
fcpln_art	0.5	0.548	6	0.929	0.262	29	0.875	0.354	9	0.429	0.019	0.375	0.125	-0.05	1
fund_art	0.333	0.516	6	0.655	0.484	29	0.889	0.333	9	0.322	0.386	0.556	0.082	0.234	0.578
CE	50.00	36.23	6	73.71	24.63	29	83.33	15.31	9	23.71	0.12	33.33	0.045	9.63	0.951
cag_art	0.333	0.516	6	0.621	0.494	29	0.875	0.354	9	0.287	0.556	0.542	0.123	0.254	0.564
demo_art	0.333	0.516	6	0.929	0.262	29	0.889	0.333	9	0.595	0.001	0.556	0.006	-0.04	1
hc_art	0.667	0.516	6	0.857	0.356	29	0.889	0.333	9	0.19	0.8	0.222	0.806	0.032	1
right_art	0.667	0.516	6	0.571	0.504	29	0.667	0.5	9	-0.1	1	0	1	0.095	1
pegov_art	0.5	0.548	6	0.607	0.497	29	0.667	0.5	9	0.107	1	0.167	1	0.06	1
pr_art	0.5	0.548	6	0.786	0.418	29	0.889	0.333	9	0.286	0.419	0.389	0.263	0.103	1
ptsat_art	0.667	0.516	6	0.857	0.356	29	1	0	9	0.19	0.681	0.333	0.223	0.143	0.859
poph_art	0.333	0.516	6	0.857	0.356	29	0.889	0.333	8	0.524	0.011	0.556	0.023	0.032	1
SIP	45.24	33.09	6	77.34	24.00	29	85.71	15.97	9	32.10	0.014	40.48	0.008	8.37	1
collab_art	0.333	0.516	6	0.862	0.351	29	0.778	0.441	9	0.529	0.014	0.444	0.114	-0.08	1
acad_art	0.6	0.548	6	0.741	0.447	29	1	0	9	0.141	1	0.4	0.265	0.259	0.326
vint_art	0.6	0.548	6	0.815	0.396	29	0.778	0.441	8	0.215	0.914	0.178	1	-0.04	1
regn_art	0.167	0.408	6	0.714	0.46	28	0.778	0.441	9	0.548	0.03	0.611	0.041	0.063	1
gov_art	0.6	0.548	6	0.821	0.39	29	1	0	9	0.221	0.671	0.4	0.177	0.179	0.642
voltr_art	0.8	0.447	6	0.704	0.465	29	0.778	0.441	9	-0.1	1	-0.02	1	0.074	1
hint_art	0.6	0.548	6	0.966	0.186	28	1	0	8	0.366	0.008	0.4	0.015	0.034	1
CGM	50.00	39.44	6	58.05	39.75	29	72.22	31.18	9	8.05	1	22.22	0.828	14.18	1
smsuc_art	0.5	0.548	6	0.621	0.494	29	0.556	0.527	9	0.121	1	0.056	1	-0.07	1
smprf_art	0.8	0.447	6	0.864	0.351	29	1	0	9	0.064	1	0.2	0.868	0.136	0.954
smed_art	0.6	0.548	6	0.483	0.509	29	0.667	0.5	9	-0.12	1	0.067	1	0.184	1
brdsuc_art	0.5	0.548	6	0.643	0.488	29	0.778	0.441	9	0.143	1	0.278	0.857	0.135	1
brdprf_art	0.3333	0.516	6	0.5	0.509	29	0.778	0.441	9	0.167	1	0.444	0.293	0.278	0.458
brded_art	0.6	0.548	6	0.643	0.488	29	0.75	0.463	9	0.043	1	0.15	1	0.107	1
IIDM	43.33	34.45	6	80.69	29.99	29	91.11	20.28	9	37.36	0.019	47.78	0.01	10.42	1
prfqal_art	0.667	0.516	6	0.964	0.189	29	1	0	9	0.298	0.026	0.333	0.035	0.036	1
prfacc_art	0.833	0.408	6	0.821	0.39	29	0.889	0.333	9	-0.01	1	0.056	1	0.067	1
cpdss_art	0.167	0.408	5	0.759	0.435	29	0.889	0.333	9	0.592	0.008	0.722	0.006	0.13	1
cldss_art	0.167	0.408	5	0.724	0.455	28	0.889	0.333	9	0.557	0.018	0.722	0.008	0.165	0.957
ehr_art	0.333	0.516	5	0.828	0.384	29	0.889	0.333	9	0.494	0.023	0.556	0.032	0.061	1

Table K.14 ANOVA results using 2011 data comparing hospitals by type on their mean articulation of strategic issues and domains (hospitals that responded in both 2004 and 2011)

Strategic Issues & Domains	SC Mean	sd	n	LC Mean	sd	n	T Mean	sd	n	LC-SC	p value	T-SC	p value	T-LC	p value
HRC	83.33	30.28	6	65.52	26.23	29	69.44	30.05	9	-17.82	0.47	-13.89	1	3.93	1
rec_art	0.833	0.408	6	0.931	0.258	29	0.889	0.333	9	0.098	1	0.056	1	-0.042	1
clsuc_art	0.833	0.408	6	0.552	0.506	29	0.778	0.441	9	-0.282	0.602	-0.056	1	0.226	0.681
inj_art	1	0	6	0.793	0.412	29	0.889	0.333	9	-0.207	0.663	-0.111	1	0.096	1
lab_art	0.667	0.516	6	0.345	0.484	29	0.222	0.441	9	-0.322	0.427	-0.444	0.259	-0.123	1
PCM	83.33	20.41	6	75.86	24.53	29	86.11	18.16	9	-7.47	1	2.78	1	10.25	0.745
innpc_art	1	0	6	0.897	0.31	29	0.889	0.333	9	-0.103	1	-0.111	1	-0.008	1
inntec_art	0.667	0.516	6	0.552	0.506	29	1	0	9	-0.115	1	0.333	0.517	0.448	0.041
advs_art	0.833	0.408	6	0.828	0.384	29	0.778	0.441	9	-0.006	1	-0.056	1	-0.050	1
infec_art	0.833	0.408	6	0.759	0.435	29	0.778	0.441	9	-0.075	1	-0.056	1	0.019	1
FE	83.33	27.89	6	67.82	30.19	29	74.07	32.39	9	-15.52	0.783	-9.26	1	6.26	1
innop_art	1	0	6	0.931	0.258	29	0.778	0.441	9	-0.069	1	-0.222	0.455	-0.153	0.515
fcpln_art	0.833	0.408	6	0.724	0.455	29	0.889	0.333	9	-0.109	1	0.056	1	0.165	0.957
fund_art	0.667	0.516	6	0.379	0.494	29	0.556	0.527	9	-0.287	0.63	-0.111	1	0.176	1
CE	79.17	12.91	6	71.55	20.57	29	69.44	15.45	9	-7.61	1	-9.72	1	-2.11	1
cag_art	0.667	0.516	6	0.586	0.501	29	0.667	0.5	9	-0.080	1	0	1	0.080	1
demo_art	1	0	6	0.793	0.412	29	0.889	0.333	9	-0.207	0.663	-0.111	1	0.096	1
hc_art	1	0	6	0.690	0.471	29	0.778	0.441	9	-0.310	0.358	-0.222	1	0.088	1
right_art	0.833	0.408	6	0.724	0.455	29	0.778	0.441	9	-0.109	1	-0.056	1	0.054	1
pegov_art	0.667	0.516	6	0.828	0.384	29	0.444	0.527	9	0.161	1	-0.222	1	-0.383	0.077
pr_art	0.833	0.408	6	0.586	0.501	29	0.667	0.5	9	-0.247	0.804	-0.167	1	0.080	1
ptsat_art	1	0	6	1	0	29	1	0	9	0		0		0	
poph_art	0.333	0.516	6	0.517	0.509	29	0.375	0.518	8	0.184	1	0.042	1	-0.142	1
SIP	71.43	15.65	6	62.07	28.90	29	66.67	28.57	9	-9.36	1	-4.76	1	4.60	1
collab_art	0.833	0.408	6	0.621	0.494	29	0.889	0.333	9	-0.213	0.916	0.056	1	0.268	0.394
acad_art	0.5	0.548	6	0.724	0.455	29	0.889	0.333	9	0.224	0.809	0.389	0.319	0.165	1
vint_art	0.833	0.408	6	0.897	0.31	29	0.875	0.354	8	0.063	1	0.042	1	-0.021	1
regn_art	0.5	0.527	6	0.679	0.476	28	0.556	0.548	9	0.179	1	0.056	1	-0.123	1
gov_art	0.833	0.408	6	0.310	0.471	29	0.333	0.5	9	-0.523	0.052	-0.5	0.15	0.023	1
voltr_art	0.667	0.516	6	0.448	0.506	29	0.444	0.527	9	-0.218	1	-0.222	1	-0.004	1
hint_art	0.833	0.354	6	0.714	0.46	28	0.875	0.408	8	-0.119	1	0.042	1	0.161	1
CGM	55.56	38.97	6	48.28	43.72	29	46.30	38.89	9	-7.28	1	-9.26	1	-1.98	1
smsuc_art	0.667	0.5	6	0.448	0.506	29	0.667	0.516	9	-0.218	1	0	1	0.218	0.794
smprf_art	0.5	0.441	6	0.621	0.494	29	0.778	0.548	9	0.121	1	0.278	0.868	0.157	1
smed_art	0.5	0.527	6	0.483	0.509	29	0.444	0.548	9	-0.017	1	-0.056	1	-0.038	1
brdsuc_art	0.333	0.516	6	0.414	0.501	29	0.333	0.5	9	0.080	1	0	1	-0.080	1
brdprf_art	0.667	0.516	6	0.483	0.509	29	0.333	0.5	9	-0.184	1	-0.333	0.66	-0.149	1
brded_art	0.667	0.516	6	0.448	0.506	29	0.222	0.441	9	-0.218	0.994	-0.444	0.289	-0.226	0.716
IIDM	66.67	41.31	6	77.24	30.11	29	77.78	29.06	9	10.57	1	11.11	1	0.54	1
prfqal_art	0.833	0.408	6	0.931	0.258	29	0.889	0.333	9	0.098	1	0.056	1	-0.042	1
prfacc_art	0.833	0.408	6	0.931	0.258	29	0.889	0.333	9	0.098	1	0.056	1	-0.042	1
cpdss_art	0.6	0.548	5	0.655	0.484	29	0.556	0.527	9	0.055	1	-0.044	1	-0.100	1
cldss_art	0.6	0.527	5	0.643	0.488	28	0.556	0.548	9	0.043	1	-0.044	1	-0.087	1
ehr_art	0.8	0.447	5	0.724	0.455	29	1	0	9	-0.076	1	0.2	1	0.276	0.248

Table K.15 ANOVA results using 2004 data comparing hospitals by type on their mean rating of importance of strategic issues and domains (hospitals that responded in both 2004 and 2011)

Strategic Issues & Domains	SC Mean	sd	n	LC Mean	sd	n	T Mean	sd	n	LC-SC	p value	T-SC	p value	T-LC	p value
HRC	68.06	27.60	6	79.89	19.61	29	81.48	12.34	9	11.83	0.559	13.43	0.605	1.60	1
rec_imp	2.667	0.816	6	2.964	0.189	28	3	0	9	0.298	0.151	0.333	0.182	0.036	1
clsuc_imp	1.6	1.342	6	2.5	0.577	28	2.333	0.707	9	0.9	0.042	0.733	0.226	-0.17	1
inj_imp	2.5	0.837	6	2.25	0.799	28	2.25	0.707	9	-0.25	1	-0.25	1	0	1
lab_imp	2.5	0.577	6	2.296	0.775	27	2.444	0.527	9	-0.2	1	-0.06	1	0.148	1
PCM	70.83	22.82	6	93.10	16.38	29	87.04	14.50	9	9.52	1	16.20	0.619	6.68	1
innpc_imp	2.667	0.516	6	2.84	0.374	29	2.889	0.333	9	0.173	0.998	0.222	0.854	0.049	1
inntec_imp	1.8	1.304	6	2.222	0.892	29	2.444	0.726	9	0.422	1	0.644	0.64	0.222	1
advs_imp	2	0.894	6	2.556	0.698	29	2.556	0.527	9	0.556	0.254	0.556	0.414	0	1
infec_imp	2.333	1.033	6	2.778	0.424	29	2.556	0.527	9	0.444	0.259	0.222	1	-0.22	0.926
FE	77.78	21.08	6	82.38	25.81	29	96.30	7.86	9	4.60	1	18.52	0.394	13.92	0.353
innop_imp	3	0	6	2.808	0.402	29	2.889	0.333	9	-0.19	0.737	-0.11	1	0.081	1
fcpln_imp	2.2	0.837	6	2.577	0.643	29	2.889	0.333	9	0.377	0.654	0.689	0.157	0.312	0.595
fund_imp	2.6	0.548	6	2.778	0.424	29	2.889	0.333	9	0.178	1	0.289	0.681	0.111	1
CE	74.31	18.52	6	68.97	22.34	29	73.15	14.89	9	-5.34	1	-1.16	1	4.18	1
cag_imp	2	0.632	6	2.037	0.808	28	1.778	0.667	9	0.037	1	-0.22	1	-0.26	1
demo_imp	2.4	0.548	6	2.692	0.471	28	2.444	0.527	9	0.292	0.695	0.044	1	-0.25	0.603
hc_imp	2.333	0.816	6	2.346	0.797	29	2.222	0.667	9	0.013	1	-0.11	1	-0.12	1
right_imp	2.5	0.548	6	1.92	0.759	29	1.667	0.866	9	-0.58	0.304	-0.83	0.133	-0.25	1
pegov_imp	2.2	0.837	6	2.04	0.735	29	2.222	0.667	9	-0.16	1	0.022	1	0.182	1
pr_imp	2	0.894	6	2.269	0.724	29	2.333	0.707	9	0.269	1	0.333	1	0.064	1
ptsat_imp	2.667	0.816	6	2.704	0.542	29	2.667	0.5	9	0.037	1	0	1	-0.04	1
poph_imp	2.5	0.548	6	2.423	0.578	29	2.222	0.667	9	-0.08	1	-0.28	1	-0.2	1
SIP	55.56	31.10	6	77.83	19.60	29	82.54	14.48	9	22.28	0.06	26.98	0.05	4.71	1
collab_imp	1.8	1.304	6	2.286	0.763	29	2.25	1.035	9	0.486	0.802	0.45	1	-0.04	1
acad_imp	2.2	0.837	6	2.286	0.713	29	3	0	9	0.086	1	0.8	0.119	0.714	0.031
vint_imp	3	0	5	2.56	0.712	28	2.875	0.354	8	-0.44	0.587	-0.13	1	0.315	0.657
regn_imp	1.6	0.894	6	2.296	0.869	28	2.75	0.707	9	0.696	0.295	1.15	0.066	0.454	0.569
gov_imp	2.5	0.577	6	2.786	0.499	29	2.889	0.333	9	0.286	0.805	0.389	0.545	0.103	1
voltr_imp	2.8	0.447	6	2.577	0.643	29	2.75	0.463	9	-0.22	1	-0.05	1	0.173	1
hint_imp	2	1	5	2.778	0.424	29	2.333	0.866	8	0.778	0.114	0.333	1	-0.44	0.178
CGM	72.22	26.76	6	68.01	24.65	29	70.37	19.25	9	-4.21	1	-1.85	1	2.36	1
smsuc_imp	2	1.265	6	2.286	0.763	29	2	1	9	0.286	1	0	1	-0.29	1
smprf_imp	2.167	0.753	6	2.148	0.864	29	2.444	0.527	9	-0.02	1	0.278	1	0.296	1
smed_imp	2.167	0.753	6	2	0.679	29	2.111	0.928	9	-0.17	1	-0.06	1	0.111	1
brdsuc_imp	2.5	0.548	6	2.321	0.772	29	2.222	0.833	9	-0.18	1	-0.28	1	-0.1	1
brdprf_imp	2	1.265	6	1.964	0.881	29	2.125	0.641	9	-0.04	1	0.125	1	0.161	1
brded_imp	2.167	0.753	6	2.107	0.685	29	2	0.707	9	-0.06	1	-0.17	1	-0.11	1
IIDM	53.33	28.60	6	80.92	26.77	29	90.37	12.07	9	27.59	0.053	37.04	0.022	9.45	0.974
prfqal_imp	2.167	1.169	6	2.704	0.542	29	2.667	0.707	9	0.537	0.275	0.5	0.527	-0.04	1
prfacc_imp	2	1.265	6	2.731	0.604	29	2.778	0.441	9	0.731	0.081	0.778	0.126	0.047	1
cpdss_imp	1.5	1.291	6	2.519	0.849	29	2.556	0.882	9	1.019	0.124	1.056	0.176	0.037	1
cldss_imp	1.5	1.291	5	2.5	0.762	29	2.667	0.5	9	1	0.064	1.167	0.05	0.167	1
ehr_imp	2.2	1.304	6	2.679	0.548	29	2.889	0.333	9	0.479	0.388	0.689	0.179	0.21	1

Table K.16 ANOVA results using 2011 data comparing hospitals by type on their mean rating of importance of strategic issues and domains (hospitals that responded both 2004 and 2011)

Strategic Issues & Domains	SC Mean	sd	n	LC Mean	sd	n	T Mean	sd	n	LC-SC	p value	T-SC	p value	T-LC	p value
HRC	84.72	12.27	6	74.40	12.20	28	77.78	9.32	9	-10.32	0.17	-6.94	0.799	3.37	1
rec_imp	3	0	6	2.571	0.573	28	2.444	0.527	9	-0.429	0.233	-0.556	0.156	-0.127	1
clsuc_imp	2.5	0.837	6	2.5	0.577	28	2.667	0.5	9	0	1	0.167	1	0.167	1
inj_imp	2.167	0.753	6	2.179	0.67	28	2.444	0.527	9	0.012	1	0.278	1	0.266	0.887
lab_imp	2.5	0.548	6	1.741	0.764	27	1.778	0.667	9	-0.759	0.074	-0.722	0.194	0.037	1
PCM	87.50	11.49	6	79.31	14.37	29	79.63	13.89	9	-8.19	0.594	-7.87	0.872	0.32	1
innpc_imp	2.667	0.816	6	2.621	0.622	29	2.778	0.441	9	-0.046	1	0.111	1	0.157	1
inntec_imp	2.5	0.548	6	1.862	0.875	29	2.333	0.5	9	-0.638	0.227	-0.167	1	0.471	0.363
advs_imp	2.5	0.837	6	2.483	0.634	29	2.222	0.667	9	-0.017	1	-0.278	1	-0.261	0.938
infec_imp	2.833	0.408	6	2.552	0.632	29	2.222	0.667	9	-0.282	0.942	-0.611	0.201	-0.330	0.506
FE	90.74	14.77	6	80.46	15.04	29	83.95	12.56	9	-10.28	0.369	-6.79	1	3.49	1
innop_imp	2.667	0.516	6	2.621	0.622	29	2.667	0.5	9	-0.046	1	0	1	0.046	1
fcpln_imp	2.833	0.408	6	2.310	0.806	29	2.222	0.667	9	-0.523	0.372	-0.611	0.378	-0.088	1
fund_imp	2.667	0.516	6	2.310	0.85	29	2.667	0.5	9	-0.356	0.902	0	1	0.356	0.674
CE	75.69	22.27	6	68.53	17.31	29	70.83	11.60	9	-7.16	1	-4.86	1	2.30	1
cag_imp	2.167	0.753	6	1.929	0.716	28	2	0.707	9	-0.238	1	-0.167	1	0.071	1
demo_imp	2.5	0.548	6	2.286	0.897	28	1.889	0.782	9	-0.214	1	-0.611	0.523	-0.397	0.672
hc_imp	2.333	0.816	6	2.034	0.731	29	2.222	0.667	9	-0.299	1	-0.111	1	0.188	1
right_imp	2.333	0.816	6	1.931	0.923	29	2.111	0.928	9	-0.402	0.993	-0.222	1	0.180	1
pegov_imp	2.333	0.816	6	1.965	0.944	29	1.889	0.928	9	-0.368	1	-0.444	1	-0.077	1
pr_imp	1.833	1.169	6	1.897	0.939	29	2.333	0.5	9	0.063	1	0.5	0.901	0.437	0.638
ptsat_imp	2.667	0.516	6	2.793	0.491	29	2.889	0.333	9	0.126	1	0.222	1	0.096	1
poph_imp	2	0.894	6	1.759	0.739	29	1.667	0.707	9	-0.241	1	-0.333	1	-0.092	1
SIP	75.40	10.61	6	71.10	14.67	29	70.37	11.11	9	-4.30	1	-5.03	1	-0.73	1
collab_imp	2.5	0.837	6	1.966	0.944	29	2.333	0.5	9	-0.534	0.523	-0.167	1	0.368	0.81
acad_imp	2.5	0.837	6	2.241	0.83	29	2.333	0.707	9	-0.259	1	-0.167	1	0.092	1
vint_imp	3	0	5	2.679	0.476	28	2.375	0.744	8	-0.321	0.613	-0.625	0.117	-0.304	0.443
regn_imp	1.667	0.816	6	2.321	0.819	28	2.111	0.782	9	0.655	0.241	0.444	0.915	-0.210	1
gov_imp	2.167	0.983	6	1.897	0.557	29	2.222	0.441	9	-0.270	0.979	0.056	1	0.326	0.501
voltr_imp	2.5	0.548	6	1.862	0.915	29	1.667	0.707	9	-0.638	0.294	-0.833	0.201	-0.195	1
hint_imp	2.4	0.548	5	2.138	0.875	29	2.25	0.707	8	-0.262	1	-0.15	1	0.112	1
CGM	84.26	18.73	6	70.31	17.83	29	69.75	7.91	9	-13.95	0.199	-14.51	0.309	-0.55	1
smsuc_imp	2.833	0.408	6	2.034	0.626	29	2.444	0.726	9	-0.799	0.02	-0.389	0.734	0.410	0.28
smprf_imp	2.667	0.516	6	2.345	0.614	29	2.444	0.527	9	-0.322	0.685	-0.222	1	0.100	1
smed_imp	2.5	0.837	6	2.034	0.731	29	2	0.5	9	-0.466	0.448	-0.5	0.56	-0.034	1
brdsuc_imp	2.333	0.816	6	2.034	0.778	29	2.111	0.601	9	-0.299	1	-0.222	1	0.077	1
brdprf_imp	2.5	0.548	6	2.103	0.772	29	2	0.5	9	-0.397	0.644	-0.5	0.551	-0.103	1
brded_imp	2.333	0.816	6	2.103	0.724	29	1.556	0.527	9	-0.230	1	-0.778	0.126	-0.548	0.142
IIDM	83.33	13.17	6	83.22	13.41	29	88.89	8.16	9	-0.11	1	5.56	1	5.67	0.727
prfqal_imp	2.5	0.548	6	2.655	0.484	29	2.778	0.441	9	0.155	1	0.278	0.848	0.123	1
prfacc_imp	2.5	0.548	6	2.621	0.494	29	2.889	0.333	9	0.121	1	0.389	0.382	0.268	0.438
cpdss_imp	2.333	0.816	6	2.310	0.712	29	2.556	0.527	9	-0.023	1	0.222	1	0.245	1
cldss_imp	2.8	0.447	6	2.207	0.62	29	2.444	0.527	9	-0.593	0.13	-0.356	0.852	0.238	0.886
ehr_imp	2.833	0.408	6	2.690	0.541	29	2.667	0.707	9	-0.144	1	-0.167	1	-0.0230	1

Table K.17 ANOVA results using 2004 data comparing hospitals by type on their mean rating of *challenge* of strategic issues and domains (hospitals that responded in both 2004 and 2011)

Strategic Issues & Domains	SC Mean	sd	n	LC Mean	sd	n	T Mean	sd	n	LC-SC	p value	T-SC	p value	T-LC	p value
HRC	44.79	20.32	6	53.88	18.56	29	58.33	15.31	9	9.09	0.816	13.54	0.497	4.45	1
rec_ch	3	1.549	6	2.963	0.518	29	2.889	0.782	9	-0.04	1	-0.11	1	-0.07	1
clsuc_ch	1.2	0.837	6	2.074	0.874	28	2.111	0.928	9	0.874	0.146	0.911	0.215	0.037	1
inj_ch	2.167	0.983	6	2	0.961	28	1.778	1.202	9	-0.17	1	-0.39	1	-0.22	1
lab_ch	1.5	0.577	6	2.222	1.121	29	2.556	0.527	9	0.722	0.538	1.056	0.248	0.333	1
PCM	37.50	17.68	6	53.45	20.36	29	58.33	14.66	9	15.95	0.208	20.83	0.133	4.89	1
innpc_ch	1.667	1.211	6	2.375	0.711	29	2.667	0.707	9	0.708	0.179	1	0.069	0.292	1
inntec_ch	1.6	0.894	6	2.346	0.892	29	2.333	0.707	9	0.746	0.247	0.733	0.399	-0.01	1
advs_ch	1.5	0.837	6	2.333	0.784	29	2.111	0.928	9	0.833	0.092	0.611	0.5	-0.22	1
infec_ch	1.5	1.225	6	2.481	0.935	29	2.222	0.833	9	0.981	0.086	0.722	0.482	-0.26	1
FE	52.78	13.61	6	65.23	22.28	29	76.85	10.02	9	12.45	0.488	24.07	0.073	11.62	0.379
innop_ch	2.667	1.033	6	3.16	0.624	29	3.111	0.333	9	0.493	0.309	0.444	0.605	-0.05	1
fcpln_ch	2	1.225	6	2.556	1.013	29	2.889	0.928	9	0.556	0.811	0.889	0.38	0.333	1
fund_ch	2	0.894	6	2.821	0.723	29	3.222	0.441	9	0.821	0.039	1.222	0.006	0.401	0.431
CE	37.50	17.00	6	45.26	18.91	29	48.61	16.91	9	7.76	1	11.11	0.769	3.35	1
cag_ch	1.667	0.816	6	1.615	1.023	28	1.889	1.054	9	-0.05	1	0.222	1	0.274	1
demo_ch	2.8	0.447	6	2.64	0.7	28	2.222	1.093	9	-0.16	1	-0.58	0.584	-0.42	0.536
hc_ch	1.167	0.753	6	1.654	1.129	29	1.667	0.866	9	0.487	0.916	0.5	1	0.013	1
right_ch	1.167	0.753	6	1.808	1.132	29	1.556	0.882	9	0.641	0.545	0.389	1	-0.25	1
pegov_ch	1	0.632	6	1.615	1.023	29	2	0.866	9	0.615	0.48	1	0.158	0.385	0.902
pr_ch	1.167	0.753	6	2.038	0.916	29	2.111	0.928	9	0.872	0.116	0.944	0.16	0.073	1
ptsat_ch	1.667	1.211	6	2.556	0.698	29	2.222	0.833	9	0.889	0.059	0.556	0.601	-0.33	0.874
poph_ch	2.2	1.095	6	2.32	0.802	29	1.889	0.928	9	0.12	1	-0.31	1	-0.43	0.629
SIP	30.95	14.40	6	38.92	20.79	29	49.21	12.97	9	7.96	1	18.25	0.218	10.29	0.477
collab_ch	1	1.732	6	1.704	1.031	29	1.625	0.916	9	0.704	0.602	0.625	0.988	-0.08	1
acad_ch	0.8	0.447	6	2.036	0.838	29	2.556	1.13	9	1.236	0.018	1.756	0.003	0.52	0.39
vint_ch	2	1	5	2.444	0.856	27	2.5	0.535	8	0.444	0.4444	0.5	1	0.056	1
regn_ch	3	0.707	6	2.654	1.093	28	3	0.926	8	-0.35	1	0	1	0.346	1
gov_ch	2	1.414	6	2.679	1.124	29	3	0.707	8	0.679	0.738	1	0.392	0.321	1
voltr_ch	1.2	1.095	6	1.769	1.107	29	2.444	1.014	8	0.569	0.87	1.244	0.141	0.675	0.349
hint_ch	2.667	1.155	5	2.667	0.92	29	2.333	0.866	7	0	1	-0.33	1	-0.33	1
CGM	33.33	15.81	6	36.21	20.60	29	49.54	18.10	9	2.87	1	16.20	0.373	13.33	0.246
smsuc_ch	1.167	0.753	6	1.786	0.833	28	2	0.707	9	0.619	0.278	0.833	0.164	0.214	1
smprf_ch	0.667	0.516	6	1.222	1.013	28	2.333	1	9	0.556	0.623	1.667	0.006	1.111	0.014
smed_ch	1.333	0.516	6	1.63	1.043	28	2.111	1.054	9	0.296	1	0.778	0.437	0.481	0.647
brdsuc_ch	1.833	1.169	6	1.643	0.911	28	2	0.866	9	-0.19	1	0.167	1	0.357	0.98
brdprf_ch	1.167	1.472	6	1.464	0.962	28	1.5	0.926	9	0.298	1	0.333	1	0.036	1
brded_ch	1.833	1.169	6	1.357	1.096	28	2.111	1.054	9	-0.48	1	0.278	1	0.754	0.241
IIDM	34.17	20.84	6	56.03	21.85	29	61.67	18.20	9	21.87	0.077	27.50	0.052	5.63	1
prfqal_ch	1.5	1.378	6	2.222	0.847	28	2.444	0.882	9	0.722	0.289	0.944	0.191	0.222	1
prfacc_ch	1.333	1.506	6	2.296	0.724	28	2.667	0.707	9	0.963	0.053	1.333	0.017	0.37	0.813
cpdss_ch	1.4	0.894	6	2.667	0.761	28	2.5	0.756	9	1.267	0.007	1.1	0.054	-0.17	1
clidss_ch	1.4	0.894	6	2.385	1.061	28	2.444	1.014	9	0.985	0.177	1.044	0.235	0.06	1
ehr_ch	2	1	6	2.75	0.799	28	2.556	1.13	9	0.75	0.28	0.556	0.823	-0.19	1

Table K.18 ANOVA results using 2011 data comparing hospitals by type on their mean rating of *challenge* of strategic issues and domains (hospitals that responded both 2004 and 2011)

Strategic Issues & Domains	SC Mean	sd	n	LC Mean	sd	n	T Mean	sd	n	LC-SC	p value	T-SC	p value	T-LC	p value
HRC	57.29	10.01	6	43.75	12.39	29	45.14	10.26	9	-13.54	0.041	-12.15	0.168	1.39	1
rec_ch	3.333	0.516	6	2	0.926	29	1.889	0.782	9	-1.333	0.004	-1.444	0.008	-0.111	1
clsuc_ch	2.167	0.753	6	2.143	0.803	28	1.889	0.782	9	-0.024	1	-0.278	1	-0.254	1
inj_ch	2.167	0.753	6	1.679	0.819	28	1.889	0.928	9	-0.488	0.602	-0.278	1	0.21	1
lab_ch	1.5	0.548	6	1.31	0.806	29	1.556	1.014	9	-0.19	1	0.056	1	0.245	1
PCM	36.46	7.31	6	42.24	17.65	29	54.86	14.91	9	5.78	1	18.40	0.111	18.40	0.143
innpc_ch	1.667	0.516	6	1.862	0.915	29	2.333	0.866	9	0.195	1	0.667	0.456	0.471	0.485
inntec_ch	1.833	0.753	6	1.828	1.104	29	2.111	0.601	9	-0.006	1	0.278	1	0.284	1
adv_ch	1	0	6	1.379	0.903	29	2	0.866	9	0.379	0.957	1	1	0.621	0.178
infec_ch	1.333	1.033	6	1.69	0.85	29	2.333	0.707	9	0.356	1	1	0.093	0.644	0.161
FE	56.94	16.17	6	56.32	18.32	29	55.56	19.09	9	-0.62	1	-1.39	1	-1.39	1
innop_ch	2.167	1.329	6	2.414	1.053	29	2.556	1.014	9	0.247	1	0.389	1	0.142	1
fcpln_ch	2.167	0.983	6	2.103	1.345	29	1.889	0.782	9	-0.063	1	-0.278	1	-0.215	1
fund_ch	2.5	1.049	6	2.241	1.023	29	2.222	0.833	9	-0.259	1	-0.278	1	-0.019	1
CE	45.31	16.62	6	36.85	14.74	29	37.15	15.34	9	-8.46	0.656	-8.16	0.934	-8.16	1
cag_ch	2.333	1.506	6	1.429	1.034	28	1.556	1.014	9	-0.905	0.225	-0.778	0.562	0.127	1
demo_ch	2.167	1.169	6	1.536	1.232	28	1.333	0.707	9	-0.631	0.675	-0.833	0.517	-0.202	1
hc_ch	2	1.549	6	1.517	1.022	29	1.667	0.866	9	-0.483	0.966	-0.333	1	0.149	1
right_ch	1.5	0.837	6	1.034	0.865	29	0.889	0.782	9	-0.466	0.681	-0.611	0.534	-0.146	1
pegov_ch	1.833	0.983	6	1.31	0.967	29	1.111	0.601	9	-0.523	0.621	-0.722	0.419	-0.199	1
pr_ch	1	0.894	6	1.31	0.891	29	1.556	0.882	9	0.31	1	0.556	0.728	0.245	1
ptsat_ch	1.5	1.049	6	2.069	0.842	29	1.889	1.054	9	0.569	0.518	0.389	1	-0.18	1
poph_ch	2.167	1.472	6	1.69	1.285	29	1.889	1.269	9	-0.477	1	-0.278	1	0.199	1
SIP	48.81	23.11	6	26.85	13.32	29	27.78	13.34	9	-21.96	0.006	-21.03	0.031	-21.03	1
collab_ch	1.667	1.506	6	1.034	0.865	29	1.222	0.667	9	-0.632	0.418	-0.444	1	0.188	1
acad_ch	1.667	1.366	6	1.069	0.753	29	0.778	0.441	9	-0.598	0.32	-0.889	0.129	-0.291	1
vint_ch	2.6	1.14	5	2.296	1.031	27	1.75	1.035	8	-0.304	1	-0.85	0.485	-0.546	0.605
regn_ch	2	0.894	6	2	1.089	28	2.5	0.926	8	0	1	0.5	1	0.5	0.71
gov_ch	1.5	0.548	6	1.345	0.857	29	2.25	0.707	8	-0.155	1	0.75	0.27	0.905	0.021
voltr_ch	2.333	0.816	6	0.897	0.86	29	1.125	0.354	8	-1.437	0.001	-1.208	0.021	0.228	1
hint_ch	2.2	0.837	5	1.862	1.026	29	2.286	0.756	7	-0.338	1	0.086	1	0.424	0.917
CGM	47.22	22.62	6	22.41	17.97	29	25.46	16.20	9	-24.81	0.013	-21.76	0.088	-21.76	1
smsuc_ch	2	0.894	6	1.357	1.062	28	1.556	1.014	9	-0.643	0.522	-0.444	1	0.198	1
smpf_ch	1.167	1.169	6	0.821	0.983	28	0.333	0.707	9	-0.345	1	-0.833	0.323	-0.488	0.578
smed_ch	1.833	0.983	6	1.071	1.052	28	1.111	0.928	9	-0.762	0.314	-0.722	0.56	0.04	1
brdsuc_ch	2.333	1.211	6	0.964	0.793	28	1.111	0.601	9	-1.369	0.002	-1.222	0.023	0.147	1
brdprf_ch	2.167	0.983	6	0.643	0.87	28	1	0.866	9	-1.524	0.001	-1.167	0.049	0.357	0.894
brded_ch	1.833	0.983	6	0.714	0.854	28	1	0.707	9	-1.119	0.016	-0.833	0.206	0.286	1
IIDM	61.67	10.80	6	45.17	17.50	29	45.00	17.85	9	-16.49	0.106	-16.67	0.205	-16.67	1
prfqal_ch	1.556	0.882	6	1.464	0.793	28	1.833	0.753	9	-0.369	0.946	-0.278	1	0.091	1
prfacc_ch	1.444	0.882	6	1.5	0.882	28	2	0.632	9	-0.5	0.603	-0.556	0.674	-0.056	1
cpdss_ch	1.667	0.866	6	1.643	0.951	28	2.667	0.816	9	-1.024	0.053	-1	0.136	0.024	1
cldss_ch	1.889	1.269	5	2.071	0.813	28	2.833	0.408	9	-0.762	0.192	-0.944	0.151	-0.183	1
ehr_ch	2.444	0.882	6	2.679	0.772	28	3	0.632	9	-0.321	1	-0.556	0.552	-0.234	1