Medical Dominance and the Governance of Quality: Strategic Adaptations to Performance Measurement and Feedback in Orthopaedic Surgery

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Abstract

Background: This thesis investigates how orthopaedic surgeons interpret, adapt, and respond to continuous quality improvement (CQI) systems in everyday practice, using the Adverse Event Performance Measurement and Feedback (AE-PMF) tool as a case example. Drawing on sociological theories of medical dominance, evidence-based medicine (EBM), and audit and feedback, it explores how data-driven accountability mechanisms are received, negotiated, and reshaped within the professional norms, institutional contexts, and collegial dynamics of surgical care. **Methods:** A qualitative case study was conducted in a single orthopaedic surgery division in Ontario. Data collection included semi-structured interviews with surgeons and clinical leaders, along with analysis of institutional documents related to CQI. Thematic analysis was used to examine how participants engaged with CQI practices, particularly the implementation and perceived utility of the AE-PMF tool. **Results:** Surgeons did not passively adopt CQI tools but strategically reframed them to preserve clinical authority. They engaged selectively with quality initiatives—developing localized protocols, leveraging collegial networks, and navigating audit systems in ways that aligned with professional judgment. Collegiality served as a key mechanism of internal accountability, while transparency efforts, intended to promote oversight, often reinforced existing hierarchies. Adverse events were not objectively reported but socially constructed through peer negotiation, reputation management, and contextual discretion. **Discussion:** The findings demonstrate that audit and feedback tools like AE-PMF are not neutral instruments, but sociopolitical artefacts embedded in professional power dynamics. CQI systems both challenge and sustain medical dominance—limiting autonomy in some cases while enabling its strategic preservation in others. This study contributes to the sociology of health care by showing how performance measurement is shaped by cultural norms, professional discretion, and peer governance. **Conclusion:** To be effective, CQI systems must move beyond compliance-based models and account for the interpretive, relational, and institutional realities of clinical work. Tools like AE-PMF should foster reflective learning and shared accountability rather than symbolic oversight. Recognizing surgeons as active agents in defining and enacting quality is essential for building contextually meaningful and sustainable CQI frameworks.

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Chapter 1: Introduction

The ground-breaking report *To Err is Human* by the Institute of Medicine revolutionized perceptions of patient safety and health care quality, highlighting the significant consequences of medical errors within health care organizations (Institute of Medicine, 2000). In the Canadian context, the role of adverse events (AEs) as key indicators of patient safety has been emphasized by the Canadian Patient Safety Institute, with 51% of such events occurring during surgical care delivery (Baker et al., 2004). The economic and clinical impact of AEs (De Vries et al., 2008) has prompted national efforts to enhance surgical safety and quality (Nelson et al., 2016; Urbach et al., 2014).

Research estimates that total health care expenditure in Canada will reach $219.1 billion (Canadian Institute for Health Information, 2018), with orthopaedic care accounting for roughly 12% of acute care costs (Beaulé et al., 2016). In response to rising expenditures, the province of Ontario introduced health system funding reform in 2012. This reform, with its emphasis on quality-based procedures and standardized bundle payments, aims to enhance health care quality and patient safety while reducing costs (Beaulé et al., 2016).

Efforts to reduce post-operative AEs, coupled with changes in surgical funding structures, have prompted heightened interest in the use of performance indicators for evaluating clinical continuous quality improvement (CQI) strategies (Endalamaw et al., 2024). Among these, performance measurement and feedback (PMF) has emerged as a central focus (Foy et al., 2005). For example, a recent study by Idris et al. (2025) proposed a PMF framework for emergency medicine, highlighting the role of performance indicators in supporting data-driven CQI initiatives for enhancing acute care delivery. However, PMF systems face significant barriers, including cultural resistance and epistemological concerns (Glenngård & Anell, 2021; Ivers et al., 2025). Resistance to evidence-based medicine (EBM) tools like PMF often stems from their perceived threat to clinical autonomy and the devaluation of clinical skills (Alsadaan &

Ramadan, 2025; Goldenberg, 2012; Lambert, 2006). Longstanding control over esoteric knowledge—which has legitimized the autonomy and dominance of the medical profession (Freidson, 1986; Timmermans & Oh, 2010)—is increasingly challenged by externally imposed governance measures such as CQI and PMF, thereby unsettling established professional hierarchies (Mykhalovskiy & Weir, 2004).

In summary, the "CQI shift" in surgery can be viewed as a strategic response to evolving health system funding reforms. While such initiatives appear to reduce clinical variability and enhance overall quality of care, a more nuanced analysis is needed to examine how these interventions and classification frameworks are interpreted within surgical settings, as well as the unintended impacts they may have on clinical autonomy and decision-making.

Scope and Significance of the Study

The advent of health system reform has placed CQI at the forefront for surgical practice. As demands for accountability and transparency increase (Austin et al., 2016), previously informal quality improvement efforts are increasingly being codified and standardized (Braithwaite et al., 2014). This shift in performance oversight—particularly as data become subject to scrutiny by broader, non-clinical audiences—poses a challenge to the longstanding control surgeons held over medical knowledge and decision-making (Marshall et al., 2000).

The integration of CQI through standardized surgical care delivery, while not a new concept, continues to generate debate within the surgical community. Since the introduction of clinical practice guidelines in the 1960s, the inclusion of evidence in surgical practice has been contentious, with discussions often centred around the technical and practical challenges of evidence-based surgery (Garas et al., 2012; Gordon & Cameron, 2000). Sociological critiques of EBM demonstrate how these tools often overlook the nuances of surgical culture—a culture deeply informed by surgeons' daily interactions with patients,

colleagues, and the health care system (Berg, 1997; Lupton, 2014; Timmermans & Berg, 2003). These cultural dynamics significantly influence how surgeons engage with and respond to initiatives aimed at standardizing care.

Resistance to standardization efforts within surgical care is rarely limited to logistical or practical concerns; rather, it often reflects a deeper, more intricate tension. Surgeons frequently perceive these efforts as a challenge to their professional autonomy and dominance (Brown et al., 2004; Mykhalovskiy & Weir, 2004). These perceptions are crucial for unpacking the complex relationship between medical practitioners and EBM frameworks. However, much of the existing sociological literature tends to address medical dominance in EBM superficially, failing to delve into the underlying, often obscured, sources of conflict.

This thesis aims to address this gap in the literature by examining the nuanced ways orthopaedic surgeons respond to standardization efforts. It aims to uncover the deeper sources of conflict and resistance, looking beyond the technical and practical limitations of evidence-based surgery. In doing so, this study offers a more holistic understanding of how surgical dominance intersects with the mounting pressures introduced by CQI. It argues that orthopaedic surgeons employ adaptive strategies and workarounds to reshape standardization systems in ways that reflect their professional values and priorities. These modifications in turn influence the degree to which CQI initiatives are implemented and adopted within surgical practice. By exploring these dynamics, this thesis sheds light on the ongoing negotiation between preserving surgical autonomy and adapting to evolving demands around health care quality and safety.

Continuous Quality Improvement and Medical Dominance as the Framework for this Thesis

This thesis draws on the intersecting literature of medical dominance and EBM to frame an analysis of orthopaedic surgeons' engagement with CQI. The conceptual foundation integrates perspectives from the

sociology of surgery (Goldman et al., 2015, 2016; Jin et al., 2012; Kitto et al., 2015; Kitto & Grant, 2014; Knafl & Burkett, 1975), behavioural psychology (Britton & Di Napoli, 2020; Goffman, 1959; Haas & Shaffir, 1977, 1987; Himidan & Kim, 2015; McLuhan, 2020), and science and technology studies (Knaapen, 2014; Timmermans & Berg, 2003; Timmermans & Epstein, 2010; Timmermans & Kolker, 2004; Timmermans & Mauck, 2005), providing a multidisciplinary lens through which to examine the erosion of clinical autonomy and the intensification of CQI pressures in surgery.

Medical dominance refers to the longstanding authority of physicians, particularly surgeons, over clinical decision-making and the broader health care division of labour (Coburn, 2020). This dominance is sustained through control of specialized, esoteric knowledge, enabling substantial professional autonomy and self-regulation (Elston & Gabe, 2016). However, challenges to this authority have emerged with the rise of allied health occupations (Willis, 1989), health system reform (Coburn, 1993a; Ontario Ministry of Health and Long-Term Care, 2018), and institutionalized EBM (Goldenberg, 2012; Kitto et al., 2007). Together, these shifts have led to a degree of proletarianization—with CQI being the most recent threat to medical dominance.

Evidence-based medicine and CQI initiatives are designed to standardize care through empirically validated protocols, emphasizing transparency, accountability, and measurable improvements in patient outcomes (Institute of Medicine, 2000). Tools such as adverse event—performance measurement and feedback (AE-PMF) systems, however, have elicited resistance within the surgical community (Elchamaa et al., 2022), as they are often viewed as undermining professional discretion and clinical expertise. The expanding reach of these initiatives has increased scrutiny of surgeons' judgment, directly confronting the traditional autonomy that has historically defined the medical profession.

By engaging medical dominance as a theoretical framework, this study explores how orthopaedic surgeons in an Ontario hospital respond to the shifting power dynamics introduced by CQI. It examines

the adaptive strategies and subtle resistance mechanisms through which surgeons influence, negotiate, and occasionally reshape standardization efforts. In doing so, the thesis seeks to provide a deeper understanding of the evolving interplay between professional autonomy, oversight mechanisms, and organizational constraints.

Outline of the Research Questions

The central research question that this thesis addresses is: ***How does continuous quality improvement, through the use of data-driven adverse event performance measurement and feedback, serve as a challenge to medical dominance?***

To explore this central research question, the following sub-questions will be addressed:

1. What are the attitudes, values, and beliefs of orthopaedic surgeons regarding the use of data-driven performance measurement and feedback systems?
2. In what ways do orthopaedic surgeons resist, comply, or workaround classification systems and performance metrics?
3. To what extent do organizational culture and leadership within the hospital influence the acceptance or resistance of performance measurement and CQI initiatives?
4. How do orthopaedic surgeons perceive the balance between preserving professional autonomy and improving patient safety through the implementation of CQI efforts and PMF systems?

By addressing these research questions, this thesis aims to contribute to the understanding of the complex relationship between CQI initiatives, such as PMF systems, and the manifestations of medical dominance within the field of orthopaedic surgery. Furthermore, this study seeks to provide insights into the potential challenges and opportunities for enhancing the quality of surgical care while respecting the autonomy

and professional expertise of surgeons. Ultimately, this research aims to inform policymakers, health care administrators, and practitioners about the implications of implementing data-driven performance measurement systems in surgical practice and how to foster a collaborative environment that promotes quality improvement while respecting the unique aspects of the surgical profession.

Chapter Outline

Chapter 1: introduces the research problem, research question, background, and theoretical framework of medical dominance and EBM in the context of CQI initiatives within orthopaedic surgery.

Chapter 2: provides a theoretical and conceptual overview of the rise and fall of medical dominance, sociological medical/surgical perspectives of EBM, and the challenges posed by the introduction of CQI initiatives in orthopaedic surgery.

Chapter 3: outlines the methodological approach utilized in this thesis, detailing the research design, data collection, and data analysis methods employed to explore the research questions and objectives.

Chapter 4: presents findings on how surgeons reinterpret CQI mandates to maintain clinical autonomy, often developing localized protocols and employing adaptive strategies.

Chapter 5: examines how collegial norms and mentorship shape engagement with AE reporting and feedback, revealing how error is negotiated and performance data selectively employed.

Chapter 6: synthesizes key findings, outlines implications for CQI practice and theory, discusses limitations, and concludes with recommendations for future research and policy.

Chapter 2: Conceptual and Theoretical Overview

Introduction

This thesis traces the relationship between surgical culture and the implementation and adoption of a data-driven performance measurement and feedback (PMF) tool within an Ontario division of orthopaedic surgery. The medical dominance paradigm (Coburn, 2015a) is presented as the theoretical framework for examining the imbrication of classification systems and continuous quality improvement (CQI) in governing the relationships between the surgeon, the hospital, and the State. The purpose of this chapter is to demonstrate the overall conceptual utility of medical dominance as a theoretical frame for an in-depth study of perceptions and practices of adverse event reporting and quality improvement in orthopaedic surgery. Drawing on the works of notable sociologists such as David Coburn (Coburn, 1988, 1993b, 1999, 2006, 2015b), Evan Willis (Willis, 1988, 1989, 2006a), Eliot Freidson (Freidson, 1970c, 1984), and Andrew Abbott (Abbott, 1988), this background chapter aims to provide an overview of the emergence, evolution, and subsequent decline of medical dominance over time.

The chapter focuses on professional dominance within Canada, specifically the Province of Ontario, and the challenges that have influenced the medical profession's power, autonomy, and authority across various dimensions of time and space. By exploring the origins and mechanisms of medical dominance, alongside the social, economic, and political transformations within health care and society, this chapter presents an anthology of challenges to medical dominance. In light of the increasing public and political pressure that has fueled a growing demand for safety and quality in health care delivery (Institute of Medicine, 2000), this thesis contends that continuous quality improvement has emerged as the most contemporary and significant challenge to medical dominance.

Medical Dominance: Theoretical and Conceptual Overview

The history of medicine is not only a narrative of progress but also a story of social and economic struggles over the emergence of new power structures, markets, and belief systems (Starr, 1982). As the archetype for understanding power and authority dynamics among professions, medicine has been extensively studied through the theory of professional (medical) dominance (Waring, 2014). The theory of professional dominance can be traced back to the early works of Eliot Freidson (Freidson, 1970a, 1984, 1986, 1988) and has been instrumental in analyzing health care delivery control in globalized countries like the United States, Canada, and Australia (Kemp, 2007). Freidson argues that medical dominance stems from the profession's ability to develop specialized knowledge and define scientific acceptability (Freidson, 1970b, p. 135). Freidson also contends that ethicality and expertise are central to medical dominance; expertise legitimizes control over work content, while ethicality warrants trust in overseeing the terms of work (Freidson, 1970a). By maintaining ethical standards and regulatory frameworks, the medical profession secures its monopoly over health care provision and self-regulation (Wynia et al., 2014).

Australian sociologist Evan Willis echoes Freidson's emphasis on autonomy and expertise, highlighting the role of esoteric knowledge in advancing professional power and dominance (Coburn & Willis, 2000; Willis, 2006). By stressing the distinctive quality of medical knowledge, the profession establishes social distance between clinicians and patients, preventing the routinization of clinical practice (Hafferty & Castellani, 2010). The establishment of professional schools and credentialing further differentiates medicine from allied health occupations (Buerhaus et al., 2015; Wolinsky, 1993), while also shielding the medical profession from competition, intervention, evaluation, and direction by others (Willis, 1989).

Michel Foucault's concept of power-knowledge dynamics adds another layer to understanding medical dominance. Foucault asserts that knowledge tied to power assumes authority and shapes reality through

its application (Foucault, 1979). He viewed power as producing "domains and objects of ritual truth," where individuals or institutions with power can influence entire networks and practices (Foucault, 1979). By underscoring the enigmatic nature of their work, medical professionals evade scrutiny and evaluation from other health occupations. As a result, the medical profession's mastery of esoteric knowledge allows it to dominate other health occupations by controlling definitions, practices, and jurisdiction within health care (Feyereisen et al., 2021). This dominance is further reinforced through hierarchical structures and the supervision of allied health professionals—such as nurses—consolidating medicine's authority within the health care division of labour (Bourgeault & Mulvale, 2006).

Andrew Abbott's work on professional jurisdiction offers insights into how professions establish and defend their domains of expertise (Abbott, 1988). By delineating jurisdictional boundaries, the medical profession secures its authority over specific tasks and knowledge areas (Abbott, 1988). Physicians, as the ultimate experts in health matters, wield significant decision-making power in defining "medicine" and constructing illness as a social state (Bhugra, 2014). Medicalization, the sociocultural process of framing non-medical issues as medical problems (Ballard & Elston, 2005), is a key strategy in this regard. By defining what constitutes health and illness, medical professionals act as gatekeepers to health care, influencing medical organizations to adopt definitions and treatments endorsed by their professional expertise (Correia, 2017).

While gaining autonomy can be largely driven by a profession's efforts, its actual conferral relies on critical interactions between political and economic powers and occupational representation (Freidson, 1970c). Autonomy, as a 'granted legal process', is facilitated by professional schools and cannot be solely achieved by the occupation itself (Wolinsky, 1993). Instead, autonomy can only be granted when the public recognizes the profession; if society is convinced of the profession's extensive collectivity and service orientation, autonomy is more likely to be granted and supported (Wolinsky, 1993). Once autonomy is

granted, the profession becomes responsible for self-regulation, self-management, and providing its own quality controls (Khaliq et al., 2010).

The State also plays a critical role in shaping medical dominance. According to Evan Willis, State patronage reinforces the profession's role in managing health and labour power (Willis, 1988). The State can be understood as the "institutions of government providing the administrative, legislative, and judicial vehicles for the actual exercise of public authority" (Frenk, 1990). David Coburn (1993) emphasizes the interactive relationship between the State and the medical profession, with the State legitimizing the profession's authority while simultaneously influencing its practices (Coburn, 2006). Additionally, while representative organizations like the Canadian Medical Association play a crucial role in maintaining medical control over health care, the State significantly influences these organizations. These professional organizations are subject to not only internal struggles concerning the profession's future but also to intervention and management by external powers like the State (Coburn, 2006). Consequently, the State and the medical profession maintain a permeable, rather than static, relationship.

Licensure further solidifies medical dominance by granting legal monopolies over specific medical tasks, effectively preventing free competition from other occupations (Freidson, 1970b, p. 147). For instance, in North America, medicine is practically the only occupation permitted to "cut" the human body or prescribe medication, with other occupations allowed to 'touch' the body but not physically or chemically infiltrate it (Freidson, 1970c). Such jurisdictional control, combined with the mechanisms of medicalization and State patronage, sustains the profession's autonomy and authority within the health care division of labour.

The concept of medical dominance provides a robust framework for understanding the complex power dynamics within the health care system. By examining autonomy, esoteric knowledge, jurisdiction, and

the interplay with State structures, we gain deeper insight into the enduring influence of the medical profession within the sociopolitical and economic landscape of health care.

The Rise and Decline of Medical Dominance in Canada — A Brief Overview

Understanding medical dominance requires contextualizing its evolution within specific political, social, and historical frameworks. To understand medical dominance in Canada—particularly in Ontario—this overview draws on the work of David Coburn (Coburn, 1988, 1993a, 1993b, 2006; Coburn et al., 1983) and considers how medicine rose to prominence in Canada before beginning its gradual decline.

From the mid-nineteenth century until the First World War, Canadian physicians consolidated their dominance by marginalizing "irregular" practitioners (e.g., homeopaths) and unifying "regular" clinicians through licensure (Coburn et al., 1983). Efforts to codify the medical profession's monopoly over health care began as early as 1795, eventually culminating in the passing of self-regulatory licensing legislation in Upper Canada in 1865 (revised 1869) and the formation of the College of Physicians and Surgeons of Ontario (Coburn et al., 1983). At this historical juncture, Canadian physicians finally succeeded in gaining a health care monopoly, while the influence of non-clinicians began to wane. Furthermore, the discovery of germ theory alongside advances in surgery, anaesthesia, antiseptics, and public health measures further bolstered medicine's authority, enabling physicians to control both the standards of practice of other health occupations by the end of the First World War (Coburn et al., 1983).

The 1930s and 1940s were characterized by social unrest in Canada and introduced pressures that began to erode this dominance. Major events including the Great Depression and the Second World War intensified calls for health care reform, placing medicine in closer contact with government and state bureaucracies (Coburn, 1993a, 2006). Although the profession wielded considerable influence—often

described as its own 'private government' (Taylor, 1960)—it faced mounting demands for universal access in the postwar era (Coburn, 1993a).

By the 1960s, government-sponsored medical insurance (Medicare) posed a significant challenge. In Saskatchewan, despite significant opposition culminating in a twenty-day physicians' strike, a Provincial medical plan was introduced in 1962 (Coburn et al., 1983; Martin et al., 2018). By 1971, every Province across Canada had adopted state-sponsored health care (Martin et al., 2018), and physicians were unable to prevent the banning of extra-billing and user fees. According to Coburn (2006), state-sponsored health insurance signalled the beginning of the decline in medical dominance. Increased government oversight through fee-for-service arrangements allowed tracking of physicians' work and income (Li et al., 2014), while efficiency-driven organizational reforms curtailed medical autonomy in hospitals through economic, organizational, and technical alienation (Flood & Haugan, 2010; Litvak & Bisognano, 2011). Over time, these changes altered the balance of power in Canadian health care, constraining the profession's long-established autonomy and influence.

Threats to Medical Dominance

From the mid-1970s onward, scholarship began to challenge Freidson's theory of professional dominance, offering alternative frameworks to explain changes in medicine's social position (Elston & Gabe, 2016; Coburn, 1988; Haug, 1975, 1988; McKinlay & Arches, 1985; Tousijn, 2002). These critiques often reflect broader shifts in how health and health care are conceptualized and delivered, including the evolving nature of the patient-physician relationship (Epstein et al., 2005; Kaba & Sooriakumaran, 2007; Laine & Davidoff, 1996; Montague et al., 2017; Roter, 2000), the emergence of alternative therapies and practitioners (Broom & Tovey, 2007; Coulter & Willis, 2004; Gort & Coburn, 1988; Saks, 2013), the rise of evidence-based medicine and standardized care guidelines (LaGrone et al., 2018; Timmermans & Epstein, 2010; Timmermans & Kolker, 2004), and a growing emphasis on quality improvement (Committee on the

Quality of Health Care in America, 2001; Institute of Medicine, 2000; Rihari-Thomas et al., 2017). Among these forces, the State's increasing involvement in health care financing and organization stands out as a significant threat to the longstanding power and autonomy of the medical profession (Epstein et al., 2005; Kaba & Sooriakumaran, 2007; Laine & Davidoff, 1996; Montague et al., 2017; Roter, 2000).

State Involvement in the Provision of Health and Health Services

The relationship between medicine and the State offers critical insights into the evolving landscape of medical dominance. Scholars have long recognized that the State, as the ultimate source of authority in modern society, both enables and constrains professional power (Freidson, 1970c). In Canada, the introduction of State-sponsored health care in 1971 significantly expanded government involvement in health care financing and administration. Although Medicare primarily addressed issues of cost and access, its implementation altered the profession's landscape by imposing constraints on clinical decision-making and income generation (Coburn et al., 1983, 1988; McKinlay & Arches, 1985).

By the mid-1970s, changes in the political economy of Canadian health care—such as debates over extra billing and the enactment of Ontario's Bill 94—made it clear that physicians could no longer operate free from State oversight (Butt & Dufin, 2018; Heiber & Deber, 2006; Martin et al., 2018). Organized medical resistance, including a 25-day physician strike in Ontario, ultimately failed, marking a turning point in the profession's ability to unilaterally shape its working conditions (Coburn, 2020; Thompson & Salmon, 2006).

As government health plans assumed greater administrative authority, physicians faced new limits on their clinical and organizational privileges. Income and workloads became more transparent and subject to negotiation, while hospital management shifted to professional administrators who introduced managerial strategies aimed at cost-efficiency rather than purely clinical priorities (Coburn et al., 1983;

Elston, 1991). Over time, this erosion of physician-centred control represented a transfer of authority from the private to the public sphere.

The notion of "countervailing powers" (Light, 2000; Light et al., 1995) is particularly useful in understanding these developments. Rather than seeing medical dominance as static or inevitable, the countervailing powers perspective recognizes that professional authority emerges from and is sustained by ongoing struggles between multiple stakeholders—patients, administrators, the State, and other health professionals. As the State assumed greater responsibility for health care financing and management, it effectively acted as a countermobilizing force, challenging and recalibrating the balance of power that once favored medicine (Coburn, 1993b; Willis, 2006).

With this dynamic interplay, the State's involvement does not aim to dismantle medicine altogether. Instead, by imposing fee restrictions, regulating payment mechanisms, and encouraging the growth of allied health professions, the State gradually reduced medicine's unilateral control over health care delivery (Bourgeault, 2017; Johnson, 1995). This strategic intervention opened space for other actors—such as nurses, physician assistants, and administrators—to assert their professional interests, further undermining the concentrated power of physicians. As Light et al. (1995) contend, one party's dominance naturally provokes responses from others, leading to shifts in the balance of power rather than outright destruction of any single group's influence.

In sum, the State's increased role in organizing and financing health care in Canada exemplifies how countervailing forces reshape professional authority. By expanding beyond its initial function as a grantor of legal privileges, the State has become an active player with distinct interests. This continual reconfiguration of boundaries between the State and the medical profession demonstrates that medical dominance is neither fixed nor absolute. Instead, it is subject to renegotiation, with the countervailing

powers perspective offering a framework to understand how and why new threats to medical dominance continue to emerge.

Health System Funding Reform and Quality-Based Procedures in Ontario

The State's involvement in financing health care has long constrained clinical autonomy in Canada through set fee schedules, the elimination of extra-billing, and reductions in physician incomes. More recently, in Ontario, these financial and regulatory pressures have coalesced into a transformative shift in how health care—particularly surgical care—is funded and organized. In 2012, as part of Ontario's Action Plan for Healthcare, the province introduced Health System Funding Reform (HSFR) with the goal of improving care quality while reducing costs (Ontario Ministry of Health and Long-Term Care, 2018). At that time, Ontario's health care expenditures accounted for nearly forty-two cents of every tax dollar, and projections indicated that, without change, health care could consume up to seventy percent of the provincial budget by 2025 (Beaulé et al., 2016). Under HSFR, the province of Ontario implemented Quality-Based Procedures (QBPs) as a mechanism to reward care that improves patient outcomes while containing overall health care spending (Bozic et al., 2014).

Unlike traditional block funding, where hospitals receive a single lump-sum allotment each year, QBPs employ a patient-based funding model that supports a patient's entire care journey across all providers (Collier, 2008). Under QBP-based funding, hospitals are reimbursed according to the type and volume of procedures performed (e.g., hip and knee replacements), thereby tying funding more directly to the services delivered (Baxter et al., 2016). The Ontario Ministry of Health and Long-Term Care developed "price X volume" allocations intended to incentivize high-quality, evidence-based care (Ontario Ministry of Health and Long-Term Care, 2018). To guide this process, the Ministry assembled expert advisory panels composed of clinicians, scientists, and patients to produce clinical handbooks outlining best practices and

standards for each QBP (Ontario Ministry of Health and Long-Term Care, 2019). Through these handbooks, the Ministry promotes evidence-based care delivery and standardization, thereby introducing a structured framework for clinical decision-making (Ontario Ministry of Health and Long-Term Care, 2019).

While such reforms appear to be necessary to ensure the long-term sustainability of Ontario's health care system, they carry significant implications for physician autonomy and clinical judgment. The standardization enforced by QBP clinical handbooks not only dictates how many procedures surgeons should perform but also prescribes how these procedures should be carried out (Ontario Ministry of Health and Long-Term Care, 2014). As a form of practice guideline, QBP handbooks, like other standardized tools, can limit clinicians' professional discretion and challenge the expert knowledge that historically underpins medical authority (Crosby, 2013; Flores et al., 2000; Klazinga, 1994; Knaapen, 2014; Rappolt, 1997; Redman, 1994; Timmermans, 2005). By codifying best practices and subjecting surgical techniques to external scrutiny, QBPs threaten the profession's monopoly over esoteric knowledge and call into question the necessity of unfettered physician control (Pope, 2003).

This State-led approach to care delivery—encouraging standardization, linking payment to prescribed standards, and mandating compliance—echoes past reforms such as Medicare. QBPs thus function as a funding vehicle through which evidence-based medicine principles are operationalized, translating abstract standards of "best practice" into enforceable organizational and clinical expectations. Just as State-sponsored insurance shifted the balance of power in the mid-twentieth century, HSFR and QBPs represent another recalibration of authority, this time through targeted financial incentives and evidence-based practice requirements (Brunsson & Jacobsson, 2010; Hirschkorn, 2006; Timmermans & Epstein, 2010). By redefining the conditions under which clinical decisions are made and rewarding adherence to externally defined best practices, the State actively "mediates" medical power. In doing so, it orchestrates what can be viewed as a "behaviour change exhibition," compelling physicians to align their decision-

making processes more closely with State priorities and diminishing the traditional autonomy that has often characterized medical practice.

Evidence-Based Medicine

Over time, various social, political, and economic developments have challenged the long-standing dominance of the medical profession in Canada. From the State's increasing involvement in health service provision to the rise of interprofessional teams and the growing independence of allied health professions, medicine's historically secure position has come under scrutiny (Boon et al., 2003; Brosnan, 2015; Coburn & Biggs, 1986). The shift from a traditionally biomedical approach to a more patient-centred model has further questioned the exclusivity of medical expertise and authority (Ishikawa et al., 2013; Kaba & Sooriakumaran, 2007). Amid these transitions, the escalating demand for improved health care quality, safety, and standardization has given rise to evidence-based medicine (EBM) as one of the most significant contemporary challenges to medical dominance (Timmermans & Epstein, 2010).

Evidence-based medicine has emerged as a central force shaping both clinical practice and the organizational cultures of modern health care (Broom et al., 2009; Mykhalovskiy & Weir, 2004; Pope, 2003; Timmermans & Kolker, 2004). First introduced by clinical epidemiologists at McMaster University in 1992, EBM was heralded as a "new paradigm" intended to replace intuition and unsystematic experience with rigorous research evidence (Evidence-Based Medicine Working Group, 1992; Mykhalovskiy & Weir, 2004). EBM operates on two core principles: the hierarchy of evidence and the synthesis of best practices into guidelines. Randomized controlled trials (RCTs) occupy the pinnacle of this hierarchy, while expert opinion resides at the bottom (Knaapen, 2014). Given the practical constraints on physicians' time and capacity to appraise research thoroughly, medicine increasingly relies on synthesized

evidence—such as clinical guidelines and Cochrane reviews—to inform decision-making (Guyatt et al., 2000).

Although EBM purports to improve patient care and reduce variability in clinical practice, it remains controversial, especially regarding its impact on medical dominance (Timmermans & Kolker, 2004). Within the social sciences and science and technology studies literature, critiques emphasize the tension between the "art" and "science" of medicine, focusing on how standardized guidelines may undermine the tacit knowledge and experiential judgment central to medical expertise (Malterud, 2001; Pope, 2003; Timmermans & Epstein, 2010). Medical and surgical researchers, meanwhile, highlight the practical and technical difficulties of producing and implementing guidelines, as well as the erosion of clinical autonomy that results from relying on externally mandated standards (Guyatt et al., 2008). Because EBM principles challenge the professional autonomy, expert authority, and discretionary judgment that form the foundation of medical dominance, it is unsurprising that clinicians often seek ways to resist or work around the demands of EBM in everyday practice.

This tension is particularly pronounced in surgery. Compared with other specialties, surgery has traditionally depended on experiential learning and the transmission of techniques from mentors to trainees (Ashrafian et al., 2018). Surgeons have long relied on expert opinion and intuitive judgment, adapting their methods to individual patient circumstances rather than strictly following standardized protocols (Pope, 2003). Many surgeons articulate their craft as an "artistic performance," using this rhetoric to justify deviations from evidence-based guidelines and reassert their professional authority (Kienle & Kiene, 2011). The inherent uncertainty and complexity of surgical practice—where success often hinges on the surgeon's skill, experience, and capacity to respond to intraoperative contingencies—further intensify resistance to externally imposed standards (Bosk, 2003; Han et al., 2011).

Evidence-based medicine therefore poses a direct challenge to the core pillars of medical dominance. By prioritizing standardized, research-based guidelines over individual clinical judgment and esoteric knowledge, EBM calls into question the profession's traditional sources of authority. This is particularly true for surgery, where the push towards evidence-based practice intensifies longstanding debates about the role of expertise, artistry, and autonomy in clinical decision-making. Drawing on both social sciences and medical/surgical literature, the following section provides a brief overview of how surgeons challenge EBM and its application in surgical practice.

Resisting Evidence-Based Medicine: Perspectives from the Social Sciences

Social science scholars have long noted that medical practitioners do not uniformly embrace EBM. Instead, resistance often emerges from the tension EBM creates between art and science, experiential knowledge and standardized protocols, and the complexities of real-world practice versus the theoretical ideals of clinical research (Pope, 2003). Although EBM advocates promote the use of the "best available evidence" derived from rigorous, systematic research, critics argue that the concepts of "best evidence," "expertise," and "rigor" are far from objective; rather, they are socially constructed, shaped by political forces, and subject to change across time and place (Broom et al., 2009).

This skepticism is frequently framed as a response to "cookbook medicine"—the perception that clinical guidelines derived from EBM reduce patient care to a set of standardized recipes (Lambert, 2006). Such guidelines may overlook clinical intuition, professional judgment, and the nuanced experiences of individual patients (Armstrong, 2002). Supporters of EBM highlight scientifically vetted evidence over tacit knowledge and personal insight, while its opponents defend the "art" of medicine—an approach grounded in experience, critical interpretation, and reflection (Mykhalovskiy & Weir, 2004; Pope, 2003).

At the heart of this debate lies the concept of clinical judgment. Traditionally, clinical judgment is gained through hands-on practice, mentorship, and iterative learning, forming what Freidson (1988) once described as the "heart of medical work." In this view, the tacit knowledge acquired through experience is central to professional power and autonomy, enabling physicians to craft patient-centred solutions unbound by prescriptive rules (Kienle & Kiene, 2011). Evidence-based medicine, however, challenges these foundations by situating RCTs and other forms of standardized research at the pinnacle of a hierarchized evidence structure. Within this framework, clinical judgment is not only demoted to a lower rung of the evidence ladder but also disparaged as unreliable, opaque, and prone to error (Ofri, 2006).

For surgeons in particular, EBM's emphasis on population-level data and predetermined protocols is at odds with the individualized, skill-driven nature of their practice (Kitto et al., 2011; Pope, 2003; Timmermans & Kolker, 2004). Treating patients is not merely a matter of applying general principles; it involves responding to shifting circumstances, subtle patient differences, and situational complexities that cannot be fully captured by clinical guidelines (Pope, 2003). In the surgical realm, high stakes, uncertainty, and reliance on experiential mastery mean that EBM's attempt to place clinical expertise at the bottom of the evidence hierarchy is perceived as a direct threat to the surgeon's authority and autonomy (Hafferty, 2000; Knafl & Burkett, 1975; Thornton, 2006).

By prioritizing applied, standardized knowledge over the practical knowledge forged through professional experience, EBM unsettles the foundations on which much of medicine—particularly surgery—has traditionally rested. The sense that judgments honed through mentorship, craft, and personal skill are being supplanted by external, data-driven constraints fuels ongoing resistance. The next section, drawing on theories from medicine and surgery, further explores how clinicians conceptualize, negotiate, and respond to the pressures introduced by evidence-based frameworks.

Resisting Evidence-Based Medicine: Theories from Medicine and Surgery

Within the surgical literature, many scholars endorse the principles of EBM, emphasizing that optimal surgical care should integrate the best available research evidence with clinical expertise (Jones & Richards, 2003). By insisting on the evaluation of therapeutic interventions prior to their widespread adoption, EBM encourages surgeons to refine their practice through scientific rigor. At the same time, however, a substantial body of surgical research has identified practical, technical, and cultural factors that hinder the integration of EBM into daily practice (McCulloch et al., 2002). These challenges include the standardization of surgical techniques, and the difficulties associated with producing and implementing RCTs in the surgical setting (Cook, 2009; Meshikhes, 2015).

Efforts to standardize surgery often meet resistance, as surgeons perceive standardized protocols to be at odds with their professional autonomy, judgment, and creativity (Lehmann & Miller, 2004). Although reducing clinical variation is a key objective of EBM, critics argue that "cookbook medicine" risks diminishing the nuanced decision-making and individualized care that lie at the heart of surgical expertise (Lehmann & Miller, 2004). The extensive "learning curve" associated with mastering new surgical techniques further complicates standardization. Surgeons may be reluctant to adopt unfamiliar procedures for fear of error, lack of confidence, or the time and effort required to acquire new skills (Aggarwal et al., 2008; Birkmeyer et al., 2013; Farrokhyar et al., 2010; Freire et al., 2010; Glass et al., 2014; Graham & Hawn, 2019; Hopper et al., 2007). In practice, these barriers translate into a preference for well-honed, familiar methods over new protocols that may be theoretically sound but practically challenging.

Questions also arise regarding the applicability and value of RCTs in surgical research. Critics point out that surgical RCTs often suffer from methodological limitations and variable quality (McCulloch et al., 2002; Young & Solomon, 2003). Some characterize EBM's reliance on RCT data as reductionist and paternalistic, arguing that it oversimplifies the complexity of surgery (Little, 2003). Additionally, surgeons

may lack the epidemiological or statistical training necessary to design, conduct, or interpret clinical trials adequately (Maddern, 2001; Meshikhes, 2015). The practical constraints of critically appraising literature at the point of care further impede the integration of EBM into surgical routines bedside (Kitto et al., 2007). Given these challenges, it is hardly surprising that "the integration of EBM into surgical practice has not evolved as rapidly and effectively as hoped" (Kitto et al. 2007, p.232).

Continuous Quality Improvement and Medical Dominance in Surgery

The introduction of EBM has brought patient outcomes and data-driven decision-making to the forefront of clinical practice. Within this landscape, continuous quality improvement (CQI) initiatives have become integral to surgical care, aligning with the growing emphasis on patient safety, accountability, and transparency (Epstein & Street, 2011; Ishikawa et al., 2013; Schneller et al., 2009). Continuous quality improvement is defined as "the repetitive cycle of process and outcomes measurement, intervention design and implementation to improve care processes, and re-measurement to determine the effect on the quality of care" (Ferguson et al., 2003, p. 49). In surgery, this model requires surgeons to engage actively with performance improvement strategies that move beyond traditional notions of expertise and clinical autonomy.

Understanding the potential of CQI to improve surgical outcomes sets the stage for examining specific areas where these initiatives are particularly salient. Among the most critical of these fields is the prevention and management of adverse events (AEs) in surgery. By focusing on how AEs are identified, measured, and addressed, CQI principles challenge long-standing assumptions about surgical decision-making, ultimately reshaping the boundaries of professional authority.

Adverse Events in Surgery

Seminal reports from the Institute of Medicine, such as *To Err is Human* (Institute of Medicine, 2000) and *Crossing the Quality Chasm* (Committee on the Quality of Health Care in America, 2001), have transformed the way patient safety is understood and pursued. These reports highlight that safety emerges from the interplay of multiple system components rather than relying solely on individual practitioners. In this context, post-operative AEs—unintended injuries or complications stemming from health care management rather than the underlying disease—serve as key indicators of surgical care quality (Baker et al., 2004). Approximately 37%–51% of these AEs are preventable, reinforcing the urgency of patient safety initiatives aimed at reducing surgical harm (Baker et al., 2004).

Performance Measurement and Feedback Systems in Surgery

Recognizing that AEs serve as key indicators of patient safety and surgical quality, researchers and policymakers have increasingly sought more efficient ways to identify, monitor, and address these occurrences. Traditional approaches, such as retrospective record reviews, are often time-consuming, labour-intensive, and expensive, limiting their utility in dynamic surgical environments (Anderson et al., 2013; Woloshynowych et al., 2003). In response, there has been growing interest in more streamlined, proactive solutions designed to generate high-quality evidence, guide CQI efforts, and ultimately enhance surgical performance.

Among the emerging tools, performance measurement and feedback (PMF) systems have gained prominence. Rather than relying on delayed and static data sources, PMF systems leverage comparative performance indicators and automated, data-driven feedback loops to assess surgical practice in near real-time (Kritchevsky et al., 2008; Lewis et al., 2015). Although previous research on PMF has often focused on areas like medication prescribing, diagnostic testing, and chronic disease management (Ivers

et al., 2025), there has been a growing interest in its application within the surgical setting. For example, Elchamaa et al. (2022) found that PMF systems offer the potential to foster improved surgical performance by generating actionable, timely data, which supports iterative learning and evidence-based practice. However, their effectiveness hinges on user trust in data quality and the perceived relevance of the metrics provided.

Performance measurement and feedback's strength lies in its ability to help surgeons and institutions track outcomes more efficiently, promote collaboration across multiple sites, and refine surgical techniques and decision-making processes (Chou et al., 2015). In particular, peer-based comparisons—a critical component of PMF—can act as a powerful motivator, encouraging surgeons to engage in performance reflection and quality improvement when coupled with a supportive learning environment (Elchamaa et al., 2022).

However, despite these theoretical advantages, PMF systems have yielded mixed results—their effects on clinical practice and patient outcomes tend to be highly variable, with most studies reporting small to moderate outcomes (Grimshaw et al., 2004; Ivers et al., 2025; Jamtvedt et al., 2006). Although research suggests that PMF can lead to improved health care quality and patient safety, PMF systems are often poorly understood, designed, and implemented (Dixon-Woods et al., 2012). Elchamaa et al. (2022) identify several barriers to PMF adoption, including cultural resistance within surgical practice, hierarchical structures, and limited institutional support. Surgeons' skepticism toward external oversight and mistrust in how performance data are collected and interpreted further exacerbate these challenges.

Beyond technical limitations, organizational culture, availability of resources, and the perceived "actionability" of feedback also shape how clinicians engage with PMF (Ivers et al., 2025). Facilitators to PMF success include strong leadership support, engagement of frontline staff, and alignment with surgeons' professional goals (Elchamaa et al., 2022). For instance, when PMF systems are framed as tools

for self-improvement rather than punitive measures, they are more likely to be adopted and integrated into routine practice.

To better grasp surgeons' varied responses to PMF, it is essential to consider the social and professional controls that govern clinical behaviour. Bosk's (2003) analysis of professional regulation emphasizes the interplay between informal-internal controls—subtle, everyday reminders among colleagues—and formal-internal controls, such as structured performance reviews. Historically, these forms of regulation operated in a context of substantial clinical autonomy and minimal external interference. Prior to the introduction of quality improvement tools like EBM and PMF, surgeons rarely encountered direct orders, formal sanctions, or persistent demands for change (Freidson & Rhea, 1963; Goss, 1961).

By introducing CQI and PMF as a social control mechanism, surgical practice is now subject to a level of oversight once unfamiliar to the profession. Surgeons must increasingly align their decision-making and behaviour with externally defined standards of accountability and transparency. Elchamaa et al. (2022) note that, while surgeons value peer-driven learning, PMF systems must carefully balance accountability with professional autonomy to avoid perceptions of external interference. In this sense, CQI emerges as a contemporary and powerful agent of change—one that not only reshapes traditional relationships within the medical profession but also challenges the foundational power dynamics that have long underpinned clinical authority.

Continuous Quality Improvement and Medical Dominance

As PMF systems become integral to surgical practice, they bring into question the traditional configurations of power and autonomy underlying medical dominance. Although the literature on CQI's relationship to medical dominance is limited, Light et al. (1995) countervailing powers framework offers a lens through which to understand the broader implications. According to this perspective, physicians

coexist with external actors, including CQI programs, that can challenge and reshape professional authority (Hartley, 2002; Light, 2000; Light et al., 1995; Starr, 1982).

By demanding accountability, transparency, cost-effectiveness, and measurable quality improvements, CQI initiatives erode the longstanding autonomy that once shielded clinical judgment from external evaluation (Timmermans, 2005). In doing so, they effectively "open" the clinical decision-making process to scrutiny, subjecting the "black box" of surgical expertise to new forms of evaluation and control (Light, 2000). Whereas autonomy once served as a substitute for direct accountability, CQI frameworks redistribute responsibility for patient outcomes, linking them to institutional benchmarks, financial incentives, and performance metrics.

This realignment directly confronts medical dominance. Elchamaa et al. (2022) highlight how CQI tools, particularly PMF systems, challenge surgeons' control over clinical discretion by introducing external metrics that evaluate their performance. These systems effectively redefine what constitutes surgical "success," shifting authority from individual surgeons to data-driven frameworks. As CQI programs identify errors, measure outcomes, and call attention to preventable AEs, they challenge the profession's monopoly on esoteric knowledge and clinical discretion (Keshet, 2009; Tousijn, 2006).

Rather than relying solely on tacit, experiential knowledge, the medical profession faces a system that seeks to codify, quantify, and regulate practice through standardized data and performance feedback. However, as Elchamaa et al. (2022) note, surgeons often resist these systems when they perceive the data as misaligned with clinical realities or lacking credibility.

In essence, CQI transforms the cultural and organizational environment in which surgeons operate, shifting it from one defined by individual authority and closed professional hierarchies to one that is more transparent, data-driven, and accountable to external stakeholders. Fostering a culture of collaboration and shared responsibility, rather than blame, is essential for CQI tools to be viewed as facilitators of

improvement rather than instruments of control (Elchamaa et al., 2022). Thus, these quality improvement tools serve not only as mechanisms for enhancing patient safety but also as instruments that reshape the very foundation of medical (and surgical) dominance.

Conclusion

Historically, the medical profession has maintained its dominance by tightly controlling clinical work and remaining largely immune to external evaluation (Freidson, 1970b, 1970c). Such dominance can be interpreted within a framework of professional power dynamics, wherein professions compete for jurisdiction over specialized areas of knowledge and expertise. Over time, however, state-sponsored health care and the advent of EBM have challenged medical authority by introducing standardized guidelines and subjecting clinical practice to greater scrutiny in Canada (Armstrong, 2002; Coburn, 1993b).

Continuous quality improvement initiatives have intensified these shifts by highlighting patient safety and surgical quality, with AEs serving as a critical metric for assessing surgical performance (Baker et al., 2004). Data-driven PMF systems have been proposed as one way to address surgeons' resistance to EBM and CQI by leveraging existing resources and fostering solutions within surgical communities (Ivers et al., 2025). Nonetheless, a range of sociocultural barriers—such as the valuing of personal experience, entrenched hierarchies (Kitto et al., 2011), and competition among professional groups (Abbott, 1988)—can impede the successful implementation and adoption of PMF. As these data-driven systems potentially undermine surgical dominance by constraining clinical autonomy and judgment, understanding surgeons' values, attitudes, and beliefs about surgical quality improvement becomes essential.

This thesis addresses the following primary research question:

How does continuous quality improvement, through the use of data-driven adverse event performance measurement and feedback, serve as a challenge to medical dominance?

Focusing on an Ontario division of orthopaedic surgery as a case study, this thesis examines the introduction and uptake of a data-driven AE-PMF system and its influence on orthopaedic surgeons' autonomy, clinical judgment, and the broader professional power relations within the health care landscape.

Chapter 3: Methodological Approach

Introduction

This chapter outlines the methodological approach and forms of evidence used to investigate the relationship between the implementation of an adverse event (AE) performance measurement and feedback (PMF) tool in an Ontario orthopaedic surgery division and individual surgeons' perceptions of autonomy and control over clinical practice. At the core of this thesis lies the research question: *How does continuous quality improvement, through the use of data-driven adverse event performance measurement and feedback, serve as a challenge to medical dominance*?

The study focuses on Orthopaedic surgeons' values, attitudes, and beliefs regarding continuous quality improvement (CQI) and the systematic monitoring of AEs. Specifically, it examines how these perspectives may contribute to either the maintenance or erosion of medical dominance. To explore these dynamics, a qualitative case study approach is employed, incorporating in-depth semi-structured interviews, participant observations, and document analysis. This methodological framework enables an in-depth examination of the sociocultural artefacts influencing orthopaedic surgeons' behaviours and decision-making processes in relation to CQI.

Research Design and Methodology

Qualitative Case Study

The novelty of this research project and the scarcity of literature on the relationship between CQI and medical dominance necessitate a qualitative case study approach. This method is particularly well-suited for exploring emerging fields and developing theories on critical issues by investigating the behaviour, interactions, and experiences of purposefully sampled individuals and groups within their real-world

context (Dahwa, 2023). It proves especially suitable for examining complex issues in real-world settings, as it focuses on addressing 'how' and 'why' questions, thus facilitating a contextual investigation (Yin, 2009). Furthermore, the case study approach offers paradigmatic flexibility, allowing for the integration of various data collection methods, such as participant observations, questionnaires, surveys, interviews, archival records, and physical artefacts (Dempsey & Dempsey, 2000; Eisenhardt & Graebner, 2007; Stake, 1995; Yin, 2009). For these reasons, the research was conducted within a single division of orthopaedic surgery.

Despite its prominence in social sciences research, the exploratory case study design does have certain limitations, including a potential lack of scientific rigor, objectivity, and generalizability when compared to alternative methods (Cavaye, 1996; Darke et al., 1998; Yin, 2009). To address these limitations, scholars emphasize purposive or theoretical modes of sampling, which can illuminate and extend relationships among constructs (Eisenhardt & Graebner, 2007; Seawright & Gerring, 2008).

To gain insights into how surgeons interact with the AE-PMF tool and CQI programs, and its subsequent impact on medical dominance, it is essential to examine this phenomenon within its natural setting. By employing in-depth semi-structured interviews, non-participant observations, and document analysis, this thesis seeks to provide a nuanced understanding of Orthopaedic surgeons' values, attitudes, and beliefs regarding tracking and reporting AEs and to explore how these factors influence their clinical practices and decision-making processes.

Sources of Evidence

The primary sources of evidence for this thesis are semi-structured interviews, complemented by field notes from non-participant observations and key internal CQI documents. These documents include

divisional CQI reports, PowerPoint slides from Morbidity and Mortality and CQI rounds, and progress reports, all of which informed the development of the interview guide.

Semi-Structured Interviews

Semi-structured interviews served as the main data collection method for this study, offering greater flexibility and dynamism compared to structured interviews. These in-depth interviews enable researchers to gather rich narratives of events and processes by tapping into participants' lived experiences and social attitudes. Additionally, they offer a means to access activities or events that cannot be directly observed (Minichiello et al., 2002). In this context, interviewees function as informants, effectively becoming the researcher's "eyes and ears" (Taylor & Bogdan, 1984). Informants not only discuss their own perspectives and experiences but also provide insights into how others perceive the same events or issues.

Interview participants were purposefully selected based on the study's objectives, theoretical framework, and research questions. Selection criteria included:

1) capacity to inform CQI policy and procedures at divisional, departmental, and hospital levels;
2) involvement in developing or implementing the data-driven AE-PMF online tool;
3) roles within CQI initiatives in the division of Orthopaedic surgery; and
4) seniority as surgeons, measured by years of practice within the division.

Participants represented a variety of roles and responsibilities within the hospital, including senior and junior Orthopaedic surgeons, CQI committee members, clinical practice unit leads, hospital administrators, division executives, and research personnel. It is noteworthy that participants often held multiple roles. For instance, a senior surgeon might also serve as a clinical practice unit lead and a CQI committee member. However, for the purposes of classification and anonymity, each participant was

categorized under the single role that most accurately reflected their primary position within the hospital structure (see **Table 1 for details**).

Table 1: Summary of Participants Interviewed

Participants Interviewed	Number of Participants (n=)
Senior Surgeon	2
Junior Surgeon	3
Research Personnel	1
Clinical Practice Unit Lead	1
Hospital Administrator	1
Division Executives	4
CQI Committee Member	2
Total	**n = 14**

Sampling

To be considered for this study, participants had to be active members of the division of Orthopaedic surgery. To identify potential participants, this study employed a combination of purposive/theoretical sampling (Benoot et al., 2016; Palinkas et al., 2015), opportunistic sampling (Patton, 1990), and snowball sampling (Noy, 2008).

Purposive sampling involves selecting participants who are most likely to provide insight into the phenomenon under investigation due to their position or identity (Saldaña & Omasta, 2017). A key subtype, theoretical sampling, builds on "interpretative theories emerging from data and selects new samples to examine and elaborate on these theories" (Marshall, 1996a, p. 523). This approach was particularly valuable in identifying participants capable of confirming or challenging emerging patterns.

Opportunistic sampling plays a crucial role in sociological research on surgery, as it is especially useful during the exploratory stages of a research area or when the researcher lacks insider status within the field (Suri, 2011). In this thesis, opportunistic sampling occurred through informal conversations with

division staff, which both facilitated initial data collection and contributed to the evolution of the interview guide.

Snowball sampling (Noy, 2008), wherein participants identify additional potential informants, was also employed. While snowball sampling can introduce an “expert bias,” it is valuable for leveraging existing networks to access expert wisdom (Light & Pillemer, 1984). This technique proved particularly effective in reaching hard-to-approach informants, such as hospital administrators and unit leads, who might otherwise have been inaccessible.

Interview participants served as key informants, offering insights into the division’s community and providing detailed descriptions of its cultural dynamics. This was especially important for this case study, given the presence of multiple sub-cultures within the division, including surgical, EBM/CQI, managerial, and bureaucratic (hospital) cultures. For instance, one key informant, who was involved in the design and development of the AE-PMF tool and served as the scientific lead for the CQI program, provided critical insights into influential individuals, surgeons’ initial responses, the tool’s methodological and technical strengths and weaknesses, and ongoing CQI issues within the division.

Interviewing Elites: Research Challenges

In recent decades, there has been increasing scholarly interest in elites, driven by a renewed focus on ethnographic research and a need to understand elites’ perspectives, behaviours, and influence within society (Harvey, 2011; Venkatesh, 2013). Elites are often defined relationally, referring to groups that occupy a superior social position relative to the researcher or broader society (Stephens, 2007). Among elites, certain groups stand out as "ultra-elites"—a particularly powerful and prestigious subset, such as surgeons (Bukodi et al., 2024).

Surgeons occupy a unique ultra-elite status within both the medical profession and society at large. This status stems from their specialized expertise, authority over life-altering decisions, and occupational prestige (Bosk, 2003; Katz, 1999). Unlike other elite groups, surgeons are characterized by their highly demanding professional schedules and the hierarchical, closed nature of surgical environments, which make them particularly difficult to access for research purposes (Mikecz, 2012).

The challenges of involving surgeons in sociological research mirror broader difficulties associated with studying elite populations, particularly those related to gaining access and managing interview power dynamics (Harvey, 2010). Gaining access is especially difficult because elites, including surgeons, often use their social position and professional authority to shield themselves from external scrutiny (Hunter, 1993). As a result, their perspectives, particularly on social and organizational phenomena like CQI and AEs, remain largely unexplored.

Once access is secured, additional challenges emerge during the interview process itself. Elite interviewees may attempt to control the conversation, challenge the interviewer's authority, or display defensiveness when they perceive a threat to their status or expertise (Goldman & Swayze, 2012). These dynamics can be exacerbated when interviewing surgeons, whose professional culture emphasizes precision, expertise, and hierarchical authority.

Surgeons' "hard-to-reach" status mirrors that of other elite groups but is compounded by demanding schedules, institutional authority, and deeply entrenched professional norms. The term "hard-to-reach" is traditionally used to describe marginalized populations that are difficult to involve in research due to their social or geographical isolation (Bonevski et al., 2014; Shaghaghi et al., 2011). However, in the case of surgeons, their "hard-to-reach" status stems not from marginalization but from their highly privileged social position and the protective barriers that accompany it.

This thesis, much like Bosk's seminal work on surgeons in elite academic environments (Bosk, 2003), seeks to examine this powerful group's attitudes and practices in relation to CQI and AEs—topics that remain under-investigated in sociological research. Unraveling this "black box" required tailored strategies to identify, recruit, and engage participants within an Ontario division of orthopaedic surgery. The following section outlines these strategies and reflects on the specific challenges encountered during recruitment.

Thesis Background

During my tenure as a research associate under Dr. Kitto's supervision, I became acquainted with the chief of Orthopaedic surgery at an Ontario hospital. The chief had expressed concerns about quality improvement in their division, particularly regarding AEs, and sought to develop a research proposal to investigate the challenges of monitoring and reporting AEs through PMF in Orthopaedic surgery. Collaborating with experts across the institution, Dr. Kitto and I prepared a comprehensive proposal, which was submitted for funding in October 2017. However, the project did not receive funding, and the chief chose not to pursue it further.

Following this setback, I explored alternative research topics, hoping to engage another surgical division. I initially focused on safety checklists and their implementation challenges in surgery. After further investigation and consultation with Dr. Kitto, it became clear that there was limited interest in pursuing this topic. I then considered other potential subjects, including EBM, medico-legal issues in obstetrics, and the impact of noise in intensive care units on patient experiences.

During this period, the chief of Orthopaedic surgery re-approached Dr. Kitto with renewed interest in the original project concerning AE-PMF in Orthopaedic surgery. Since the initial proposal's rejection, engagement with AE reporting had become a more prominent issue within the division. Surgeons' poor

engagement, their questionable perceptions of CQI's value, and attitudes toward their roles in preventing AEs had become particularly concerning.

In April 2018, Dr. Kitto agreed to incorporate the previously rejected project into his research program, with me as the project lead and principal research associate. This project was subsequently adapted into the focus of my master's thesis.

Getting In: Gaining Access and the Role of Gatekeepers

Promoting qualitative research in surgical settings presents unique challenges. Surgeons, particularly in elite specialties like Orthopaedic surgery, are often more familiar with traditional scientific research methods, such as randomized controlled trials or meta-analyses, and may struggle to recognize the value of qualitative approaches like interviews or case studies (Bosk, 2003; Mays & Pope, 2000). In this context, *value* refers to the perceived actionability of findings, such as measurable improvements to clinical practice or patient outcomes. Despite evidence linking qualitative research to enhanced health services and patient care (Goering et al., 2008; Madjar et al., 2002; Miller, 2010), Orthopaedic surgeons often question its practical applicability (Shuval et al., 2011).

Gaining access to this elite group requires addressing challenges that the division identifies as significant and worthy of investigation. Even when a problem is acknowledged, divisions may hesitate to allocate resources or engage in research that could reflect negatively on their image. As Hunter (1995) and Mikecz (2012) note, elites possess the power to shield themselves from scrutiny, deny access, or control the flow of information. Consequently, gatekeepers—individuals with the authority to grant or restrict access—become pivotal to the research process (Bosk, 2003; Marland & Esselment, 2019).

In this study, the division chief acted as the primary gatekeeper. The chief's support was instrumental in legitimizing the research and securing participation. His endorsement extended to recruiting a research

coordinator and lead administrative assistant, both of whom played critical roles. The research coordinator's rapport with surgeons helped foster trust, while the administrative assistant's access to key documents and logistical information facilitated recruitment and scheduling.

Administrative assistants, often overlooked in research processes, can function as either allies or obstacles (Cochrane, 1998; Dexter, 2006). Their cooperation is particularly valuable when dealing with hard-to-reach populations such as surgeons, whose time is limited and tightly controlled. In this study, the lead administrative assistant provided a confidential interdepartmental contact list for all practicing Orthopaedic surgeons, enabling the initial recruitment email to be disseminated. Subsequent coordination relied heavily on individual surgeons' assistants, who managed interview scheduling. Establishing strong working relationships with these gatekeepers ensured the completion of all interviews within two and a half months—a task that might otherwise have stretched over six months or longer.

This experience underscores the importance of patience, flexibility, and an understanding that research is not the top priority for administrative staff or surgeons. Gaining access to elite populations, such as Orthopaedic surgeons, is contingent upon addressing their concerns, building trust, and effectively navigating layers of gatekeeping infrastructure.

Scheduling Interviews and Social Closure

Clinicians, particularly surgeons, are often hesitant to participate in research that demands time, commitment, or involves perceived "risk" (Newington & Metcalfe, 2014). In this thesis, significant effort was made to assure surgeons that their participation would require minimal time. Despite these assurances, reluctance remained, particularly given the qualitative nature of the research and the sensitive topics discussed, such as quality improvement, AEs, and medical error. Surgeons frequently cited time constraints, offering limited availability—often just 10 to 15 minutes—or suggesting rescheduling

months into the future. Such constraints align with existing research on elite populations, where time demands frequently deter participation. (Goldman & Swayze, 2012; Harvey, 2010, 2011; Mikecz, 2012; Pope, 2005; Zuckerman, 1972). Researchers are often advised to accommodate elites' preferred times and venues as a way of mitigating these barriers (Harvey, 2010).

Interestingly, while securing interviews proved challenging, conducting them often exceeded initial expectations. Surgeons who insisted they had “just a few minutes” frequently spoke uninterrupted for 30 minutes or more once the interview began. This discrepancy highlighted that the primary difficulty lay in obtaining the interview rather than sustaining engagement during the discussion.

To accommodate surgeons' last-minute availability, I remained near the hospital for extended periods, ready to conduct interviews at short notice. As a student unaffiliated with the hospital, I lacked access to official office or surgical spaces typically available to staff. Consequently, I often waited in nearby coffee shops for calls or emails from surgeons' administrative assistants. Interviews took place in diverse settings, including surgeons’ offices, hospital cafeterias, and coffee shops. While quiet environments were preferred for confidentiality and audio recording, meeting surgeons in spaces where they felt comfortable was paramount.

Cancellations and interruptions were frequent. Surgeons were often called into the operating room or consulted on urgent patient cases during interviews. Navigating these disruptions required patience, flexibility, and a calm demeanor. Whether resuming the interview after an interruption or rescheduling for a later time, maintaining professionalism was critical to building trust and ensuring successful data collection.

Liminality and the Stranger

During my thesis work, my credibility as a researcher was frequently questioned by orthopaedic surgeons. The division of orthopaedic surgery, and the broader department of surgery, appeared unaccustomed to "outsiders"—individuals unaffiliated with the Faculty of Medicine or clinical practice—conducting research within their domain. My identity as a sociologist, rather than an epidemiologist or medical resident, became a recurring topic of discussion before and during interviews. Surgeons variously expressed curiosity about my access to the division and skepticism regarding my training and the perceived value of my findings.

To address these concerns, I repeatedly clarified to the division's research coordinator that the project's purpose was to identify and describe phenomena rather than to "solve" an issue. While the findings could inform future solutions, producing actionable outcomes was not the primary objective of this thesis. This skepticism underscored the unique characteristics of the study population—Orthopaedic surgeons—who seemed unaccustomed to being questioned, particularly by non-clinicians. Although I could not completely overcome this challenge, the division chief's endorsement lent credibility to the project. This support was instrumental in convincing surgeons to participate, enabling the construction of a stratified sample representative of the division (Marshall, 1996a).

Throughout the research process, I experienced ambiguity surrounding my identity as a sociologist, graduate student, and researcher operating within the division of Orthopaedic surgery. This tension positioned me in a liminal identity—a "transitional state" in which individuals are "neither here nor there…betwixt and between the positions assigned and arrayed by law, custom, convention, and ceremonial" (Turner, 1969, p. 95). In organizational contexts, liminality helps illuminate the experience of being "in-between" institutionalized arrangements, sociocultural structures, and established social roles (Winkler & Mahmood, 2015).

Restricted by the surgeons' professional boundaries and institutional norms governing "non-members," I occupied a liminal space—neither fully "inside" nor entirely outside the group. In this position, I assumed the role of "the stranger," as conceptualized by Simmel (2009). The stranger, while not a member of the community, can question what others may take for granted, perceiving the incoherence and inconsistencies within a group's behaviours, interactions, and culture. This partial involvement provided me with a nuanced, distanced perspective on the division of Orthopaedic surgery and its broader institutional dynamics.

As a stranger, I also engaged in front-stage impression management—a concept developed by (Goffman, 1959)—presenting myself in ways that aligned with the surgeons' expectations. This strategic self-presentation allowed me to navigate interactions smoothly, fostering trust and facilitating access to valuable insights into the division's social and professional culture.

Recruitment

Several approaches were employed to recruit participants, including standardized and personalized recruitment emails, in-person recruitment, word-of-mouth, and advocacy from key champions within the division.

Before distributing the official recruitment email, the research coordinator raised awareness about the project during informal presentations at divisional meetings. These presentations outlined the study's purpose, objectives, and relevance to the division, familiarizing potential participants with the project prior to recruitment. As a result, when the official recruitment email was sent, participants were already somewhat aware of the study.

The official recruitment email, approved by the hospital research ethics board, was sent on March 4, 2019, to 23 surgeons and two researchers across two hospital sites (see **Appendix A for generic recruitment**

email). The email outlined the study's purpose, objectives, and participant requirements (i.e., in-person face-to-face interviews). Four surgeons and one researcher immediately agreed to participate. During these initial interviews, snowball sampling was employed, where participants referred other key informants. Personalized recruitment emails were then sent to these referred individuals, with all but two agreeing to participate due to time constraints.

Targeted Recruitment and Participant Categories

To ensure diversity and capture varied perspectives on CQI and AE reporting, participants were purposefully classified into seven categories based on institutional role:

1) **Senior Surgeon:** Surgeons with over ten years of experience, fully acclimated to the hospital and department's organizational culture and bureaucracy. They play a critical role in clinical decision-making, as well as transmitting knowledge, skills, and values to surgical trainees (Kitto et al., 2007, 2011).
2) **Junior Surgeon:** Surgeons with less than ten years of experience, primarily focused on refining surgical technique and gaining professional recognition. They possess the least clinical experience and often rely on senior surgeons for mentorship (McKee & Black, 1992).
3) **Research Personnel:** Non-clinical staff in roles such as scientific leads, research associates, and coordinators. They contribute to the division's research activities and offer insights into the development and rationale behind tools like the AE-PMF.
4) **Clinical Practice Unit Lead:** Senior surgeons who lead Orthopaedic subspecialty teams. They report to the division head and represent the perspectives of their units, providing insights into challenges and current issues.

5) **Hospital Administrator:** While not directly involved in day-to-day division activities, administrators are central to hospital governance. They enforce policies that impact funding, patient safety, and CQI.
6) **Division Executive:** Surgeons holding senior teaching or administrative positions, such as division chairs, clinical directors, or research directors. They balance the division's interests with those of the hospital, providing perspectives on the complex relationship between surgeons and institutional governance.
7) **CQI Committee Members:** Individuals directly involved in CQI and patient safety initiatives. They offer detailed accounts of CQI-related successes, challenges, and future directions.

Ultimately, a total of 14 participants were successfully recruited, representing all seven categories: two senior surgeons, three junior surgeons, one research personnel, one clinical practice unit lead, one hospital administrator, four division executives, and two CQI committee members. As Marshall (1996b) emphasizes, interviewing multiple key informants is crucial, as no single individual can fully articulate a community's culture, structures, or functions. Informants, often described as 'natural observers,' provide invaluable, deeper insights into the phenomenon under study (Burgess, 2003). This diversity of roles ensured a rich and stratified sample, capturing the perspectives of key stakeholders and offering a nuanced understanding of the complexities surrounding CQI and AE reporting processes within the division.

Interviews

Fourteen interviews were conducted between March 12th, 2019, and May 6th, 2019. Each interview was audio-recorded using a handheld device, with a backup recorder used as a precaution against data loss. Most interviews (12) took place in participants' offices, while the remaining interviews occurred over the

phone or in a coffee shop/cafeteria. On average, interviews lasted approximately one hour and were professionally transcribed within five business days.

Following in-depth interview protocol (Piercy, 1998), thematic questions explored participants' values, attitudes, and beliefs regarding AE monitoring and reporting, as well as its impact on medical dominance. Given that participants often occupied multiple roles within the division, department, and hospital, interview guides were tailored to reflect each individual's unique position and experience (See **Appendix B for sample interview guide**). The interview guide evolved iteratively as new insights emerged during data collection.

A thematic inductive analysis was employed to identify key themes and concepts within the interview data, allowing for a systematic and nuanced understanding of the phenomena under study (Ezzy, 2002). Data collection and analysis occurred concurrently, which facilitated an emergent understanding of findings and guided the development of additional interview probes until theoretical saturation was reached (Pope, 2005). Analytical categories were developed organically as they emerged during the data collection period (Kitto, Chesters, & Grbich, 2008).

Open coding and constant comparison were utilized as the primary analytical approaches. Open coding allowed for the generation of initial conceptual categories from the interview data (Piercy, 1998), while the constant comparison technique enabled systematic comparisons of similarities and differences between incidents, themes, and responses (Strauss & Corbin, 1990). This approach not only validated the interview data against other sources—such as CQI reports, policy documents, and outcome reports—but also sensitized the analysis to the diversity of interpretations and experiences within the division.

While the analysis was informed by theories of medical dominance, inductive methods remained central to the approach, ensuring that findings were grounded in participants' accounts and experiences.

Ethics — informed consent and confidentiality

Ethical clearance for this study was obtained from both the university and hospital research ethics boards. As the research involved interviewing hospital staff, observing practices, and analyzing confidential documents, several ethical considerations were addressed, including privacy, confidentiality, informed consent, and protection from potential harm (Minichiello et al., 2002).

Throughout the research process, I remained aware that some of the issues discussed in this thesis could be perceived as potentially damaging to the hospital, the department of surgery, or the division of Orthopaedic surgery. To address these concerns, the hospital name was anonymized and replaced with "Ontario Hospital," while informants' identities and specific divisions were either altered or omitted. The Orthopaedic division is referred to as the 'Ontario Division of Orthopaedic Surgery' to further safeguard participants' anonymity.

Before each interview, participants were provided with an informed consent form approved by the hospital research ethics board. This form outlined the study's objectives, interviewee expectations, research methods (including audio recording), assurances of confidentiality and anonymity, and the participants' right to withdraw from the study at any time (see **Appendix C for consent form**).

To ensure genuine informed consent, participants were asked to articulate their understanding of their involvement in the study before proceeding. This step confirmed that participation was both voluntary and based on a clear comprehension of the study's purpose and ethical safeguards.

Observations and Document Analysis

Due to time constraints, interviews served as the primary data source for this research. However, to develop a comprehensive interview guide, non-participant observations and key document analysis were conducted to supplement the interview data.

Observing patient safety and CQI committee meetings provided valuable insights into significant quality improvement issues within the division. These committees—comprising surgeons, nurses, residents, and physician assistants—were responsible for monitoring Orthopaedic activities, enhancing patient experiences and treatment outcomes, and minimizing complications and AEs. Key insights from these observations included detailed descriptions of the division's quality improvement activities, surgeons' criticisms regarding quality issues, and strategies employed by the committee to address these challenges. These observations directly informed interview questions related to surgeons' understandings of CQI and approaches to quality concerns within the division. Due to the irregular scheduling of CQI committee meetings, only two one-hour meetings were observed during the data collection period.

To gain a deeper understanding of the policies, procedures, and outcomes of CQI initiatives, key CQI documents were reviewed. These included reports, presentation slides from Morbidity and Mortality rounds and CQI rounds, and divisional progress reports. The document analysis further shaped the construction of the interview guide, providing critical information on past and current CQI projects, patient-reported performance reports, and surgical outcome reports. This analysis facilitated the development of interview questions regarding the state of CQI and AE reporting within the division of Orthopaedic surgery.

Chapter 4: Exploring the Intersections of Autonomy, State Intervention, and Surgical Quality Improvement

Introduction

While a substantial body of literature has examined the relationship between clinical autonomy, medical dominance, and state intervention (Armstrong, 2000; Coburn, 2006; Willis, 2006; Wranik & Haydt, 2018), the role of surgical CQI strategies within this dynamic remains underexplored. This chapter examines how medical dominance shapes the uptake and implementation of an AE-PMF tool in surgery. Drawing on the concepts of resistance, workarounds, and compliance as analytical lenses (Ferneley & Sobreperez, 2006), the chapter highlights how clinical autonomy and professional dominance influence surgeons' values, attitudes, and beliefs toward surgical CQI initiatives.

The chapter also addresses the implications of these workarounds for patient safety, care effectiveness, and operational efficiency. Additionally, it examines the practical, technical, and logistical challenges associated with the AE-PMF tool, detailing the strategies surgeons employ to navigate and adapt to the changes introduced by CQI activities. Through this exploration, the chapter sheds light on the tensions between traditional clinical authority and emerging accountability frameworks in surgical practice.

Balancing the Art and Science of Surgery: Maintaining Autonomy and Expertise

The purported deterioration of clinical autonomy brought on by the advent of EBM and CQI continues to serve as one of the greatest challenges to medical dominance (Kalra et al., 2013; Knaapen, 2014; Pope, 2003). In this case study, the AE-PMF tool raised questions about the perceived limitations placed on clinical judgment, challenging the value of individual surgical expertise. The enforcement of standardized clinical practices and the discrediting of the "art" of surgery have created a precarious environment for

orthopaedic surgeons, who are increasingly required to justify their clinical decisions within a cost-conscious health care system.

> *…let's say to Surgeon A and Surgeon B. Surgeon A has one way of doing it, and Surgeon B [has another]. I sit down with them and I say, Surgeon B is doing it a certain way. I am not saying we never do this technique, but you should do it [the way Surgeon B does it]. I think sometimes Surgeon A would say, well, no, the way I do it, I'm comfortable doing it that way, it's the way I've done it for years. I don't want to compromise my patient's outcome because of this. I've done a thousand this way and I don't want to start off new…Whereas, another scenario might be, oh, we can understand and appreciate that it takes some skill to learn that. We can understand why you are hesitant to transition. Again, there is probably two different scenarios…There are some scenarios where it's easy to bring people together and some scenarios where it might not even be the best option…*(Division Executive 1)

The Division Executive's account highlights how surgeons' preferences are shaped by their clinical experience and the practical demands of adopting new practices. In Surgeon A's case, resistance to change is rooted in a reliance on personal judgment, developed through years of experience. This resistance is deeply tied to the epistemic culture of surgery, which values tacit knowledge—the intuitive, experiential understanding that surgeons acquire over time—as critical to clinical decision-making (Kitto et al., 2011; Waring & Bishop, 2010).

Visual cognition further reinforces this dynamic, as surgeons rely heavily on their ability to recognize patterns, anticipate outcomes, and make rapid, informed decisions in high-pressure situations (Kitto et al., 2011; Tien et al., 2014).

The effort to persuade Surgeon A to adopt a new surgical technique can be understood as a challenge to their clinical autonomy and authority. Clinical autonomy, a cornerstone of medical dominance (Armstrong, 2002; Freidson, 1970c), enables surgeons to control their practices and decision-making processes. Resistance to standardization in this context serves as an effort to safeguard their professional judgment and emphasize the unique value of their expertise. This tension reflects a broader conflict between the "art" and "science" of surgery. While standardized protocols may aim to improve consistency

and outcomes, surgeons argue that successful clinical practice also depends on tacit knowledge and individualized decision-making honed through experience.

Critics of surgical standardization contend that medicine is fundamentally an “individualizing art” rather than a “universalistic science,” where outcomes cannot be guaranteed by rigid adherence to guidelines alone (Schlich, 2007). This perspective underscores a paradox within the medical profession: the pursuit of scientific rigor and evidence-based practices has solidified medicine’s political, social, and cultural dominance, yet it has also reorganized power relations within the profession (Annandale, 2014; Mørk et al., 2010). By framing surgery as an enigmatic, context-dependent art rather than an absolute science, surgeons protect their autonomy and preserve long-established power structures.

In essence, the AE-PMF tool represents a challenge to the professional autonomy that has long defined medical dominance. By resisting standardization, orthopaedic surgeons assert the irreplaceable value of their clinical expertise, defending their role as decision-makers in an increasingly scrutinized and regulated health care environment. This resistance not only preserves their authority but also reflects a broader negotiation of power within the evolving boundaries of surgical practice.

Performance Outcomes and Clinical Autonomy

In addition to the integration of novel surgical techniques into practice, the orthopaedic surgeons expressed concerns regarding the comparison of performance outcomes with their colleagues.

> *…And surgeons, they work on their own and there's always a bit of hesitation with regards to comparing stuff. They're really, the way it’s structured, it’s an autonomous worker and it’s the way funding is working and whatnot, so they're used to that whole mindset. So, when you're contrasting, you're putting that data out there, and you're contrasting data, and you're contrasting processes, and outcomes, and whatever, and you're not used to it, it’s different.”* (Research Personnel 1)

The researcher's observation highlights the surgeons' apprehension toward performance comparisons, particularly given their longstanding role as independent practitioners with minimal oversight. The AE-PMF system, by introducing comparative data on surgical practices and outcomes, raised concerns about increased scrutiny and critique from peers. This discomfort is rooted in the historical autonomy surgeons have enjoyed, a core pillar of their professional identity.

The introduction of comparative performance systems like AE-PMF signals a perceived erosion of professional and clinical autonomy. Similar to clinical practice guidelines, these tools impose a layer of external oversight that challenges the discretionary nature of surgical expertise (Light & Levine, 2016; Light et al., 1995). Discretion, an essential element of medical work, is closely tied to the exclusivity of medical knowledge—a foundational element of professional dominance (Timmermans & Kolker, 2004). By increasing transparency and accessibility, the AE-PMF system risks undermining this exclusivity, shifting esoteric surgical knowledge into the realm of standardized, data-driven evaluations.

This phenomenon aligns with broader trends in health care, where information technologies and decision-support systems increasingly mediate clinical practice. These tools transfer knowledge and decision-making processes from individual clinicians to centralized, computerized frameworks, enabling greater oversight and external evaluation (Stoeckle, 1988; Walter & Lopez, 2008). For orthopaedic surgeons, this transition represents a loss of control over how their expertise is defined, assessed, and valued.

Given this context, the initial resistance to AE-PMF is not surprising. Historically, efforts to monitor or standardize surgical practice have been met with skepticism and pushback from the surgical community (Timmermans & Kolker, 2004). Performance comparisons introduce a tension between surgeons' desire to maintain professional independence and the growing pressure to align with accountability frameworks that emphasize transparency and measurable outcomes.

The AE-PMF tool represents more than a mechanism for improving patient outcomes; it also challenges the traditional boundaries of clinical autonomy. By exposing surgeons' practices to external evaluation and peer comparison, it unsettles deeply held professional norms that emphasize independence, discretion, and the uniqueness of surgical expertise. This shift underscores broader changes in the balance of power within the health care system, as data-driven oversight becomes increasingly central to clinical practice.

Quality-Based Procedures: Conflicting Goals and Unintended Consequences

The role of the State in the conferral of clinical autonomy has been well documented throughout the literature (Coburn, 1993b, 1999; Freidson, 1970c; Loeppky, 2014; Tuohy, 1988). Here, the term "State" refers not only to Canada's national and provincial governing bodies but also to hospitals and medical institutions regulated by these authorities (e.g., the College of Physicians and Surgeons and the Ministry of Health). A recent example of State intervention in Ontario's health care system is the implementation of quality-based procedures (QBPs). Marketed as a patient-centred funding model, QBPs reframes patients as a source of 'revenue' rather than 'cost' while motivating health care providers to enhance both efficiency and revenue generation (Baxter et al., 2016). While QBPs ostensibly aim to improve patient care and health care efficacy, interviews with orthopaedic surgeons reveal that their actual impact is far more complex and often misaligned with these goals.

> *Where [Quality-based procedures have] impacted me is the allocation of O.R. resources… As a budget-saving measure, [the hospital] decided they needed to restrict the number of O.R. days to save money. But because [of] the QBP procedure [mandate], there had been a defined number of QBP procedures that had been designated for that year, the O.R. days that were allocated to those procedures couldn't be trumped. The people that don't do the QBP procedures saw their O.R. resources shrink even more, whereas the people who do QBP procedures didn't see their O.R. resources change. You see how it affects me indirectly.* (Junior Surgeon 1)

In the above excerpt, the Junior Surgeon illustrates how the mandated prioritization of operating room (O.R.) resources for QBPs has indirect yet significant effects on clinical practice. This prioritization redistributes surgical time, disproportionately disadvantaging surgeons whose work falls outside QBP mandates. For junior surgeons, this reallocation can be particularly impactful given their position within the surgical hierarchy.

While decreased O.R. time is a challenge for all surgeons, junior clinicians are especially vulnerable. Surgical hierarchies, which govern dynamics between junior and senior surgeons (Graham & Messer, 2020), amplify the pressures faced by early-career practitioners. To mask uncertainty and establish credibility, junior surgeons often adopt a "cloak of competence"—projecting confidence and proficiency to gain the trust and respect of colleagues (Jin et al., 2012). This dynamic is critical for those still refining their skills and professional identity within a highly competitive field. For junior surgeons, time in the O.R. directly correlates with skill development, surgical acuity, and professional credibility (Ashrafian et al., 2018; Healy et al., 2012). Consequently, reduced access to O.R. time hinders not only skill acquisition but also the ability to establish their position within the department.

The prioritization of QBPs thus poses a dual challenge for junior surgeons: it impacts their development as skilled practitioners while threatening their autonomy. Essential surgical competencies—such as technical proficiency, cognitive judgment, and operative decision-making (Grober & Jewett, 2006)—are honed through practice, underscoring the importance of equitable O.R. access. In this context, the QBP mandate risks undermining clinical autonomy and self-regulation, core pillars of medical dominance (Freidson, 1970b). By diminishing surgeons' control over the scope and substance of their work, QBP indirectly erodes professional authority.

As demonstrated in these accounts, the impact of QBPs extends beyond their stated goals. Although designed to improve care delivery, their implementation has often resulted in unintended consequences.

> *In terms of accessibility, and in terms of patients' ability to access the system, ultimately that comes down to, as surgeons, it comes down to operating room resources. When operating room resources shrink, then accessing the system becomes more difficult, and people wait longer, and then don't get care. That's what is happening for my practice is that my elective O.R. resources are relatively small, and so I slow down seeing consults, and so now people wait longer to see me, and they wait longer for surgery. Arguably that affects the quality of care that they get.* (Junior Surgeon 1)

In this excerpt, the Junior Surgeon emphasizes that QBPs have unintended repercussions for patient access and care quality. Reduced O.R. resources delay consults and elective surgeries, creating prolonged wait times and compromising patient outcomes. While the Ministry of Health promotes QBPs as a means of improving quality, surgeons argue that its practical implementation prioritizes cost control over patient-centred care.

The use of State intervention to regulate clinical practice and contain costs is not a new phenomenon (Barer et al., 1988; Coburn, 1988, 1993b; Heiber & Deber 2006; Khan et al. 2006; Thompson and Salmon 2006). Fee schedules, cost controls, and measures such as the prohibition of extra billing in Ontario represent historical examples of such interventions (Barer et al., 1988; Stadhouders et al., 2019). Each of these initiatives demonstrates the State's capacity to exert oversight and gradually diminish medical dominance (Barer & Evans, 1989). In the case of QBPs, the Junior Surgeon's experience highlights its dual role as both a cost-control mechanism and a disruptor of clinical autonomy.

Adapting to Evolving Operating Room Dynamics

In response to the evolving operating room dynamics and the challenges introduced by the Ministry of Health's quality-based procedures (QBPs), orthopaedic surgeons have formulated a range of innovative strategies. These approaches—including the introduction of peer-reviewed rounds and the AE-PMF program—aim to improve patient outcomes, balance surgical costs, reaffirm clinical expertise, reclaim autonomy, and mitigate the influence of external entities such as the Ministry of Health.

Within the division of orthopaedic surgery, Clinical Practice Units have spearheaded grassroots initiatives designed to enhance patient care while addressing economic constraints. These efforts are rooted in a dual necessity: resistance to external pressures and adaptation to evolving operating room dynamics.

> *I also think that we started doing [peer reviewed rounds]; it's not just based on patient care but also fiscally responsive patient care outcomes. Because of the economic crunch we were getting squeezed harder and harder and having to justify why decision that we were making was appropriate, why we should be allowed to have the O.R. time that our patient population needs.* (Clinical Practice Unit Lead 1)

The quote above underscores how increased financial and resource constraints—combined with heightened oversight—have prompted Clinical Practice Units to adopt peer-reviewed rounds. Unlike traditional morbidity and mortality models that focus on adverse outcomes, these rounds prioritize consensus-building for complex cases, emphasizing improved patient outcomes and cost-efficient decision-making. By adopting this approach, orthopaedic surgeons can optimize resource utilization for procedures with higher complication risks while demonstrating fiscal responsibility.

These peer-reviewed rounds also allow surgeons to position themselves as "good citizens" (Villalobos et al., 2021) within their hospitals, fostering an image of accountability and professionalism. This strategic positioning not only helps justify O.R. time but may also alleviate pressures exerted by external bodies like the Ministry of Health.

The surgeons' responses echo broader debates in the EBM literature. The notion of "best evidence" is often contested as a sociopolitical construct (Broom et al., 2009), with definitions of best practice differing between the Ministry of Health and the medical profession. In this context, QBPs—and similar standardized frameworks—risk undervaluing clinical expertise and tacit knowledge, much like clinical practice guidelines, which prioritize evidence over individual judgment. This tension has substantial implications for surgical decision-making and resource allocation.

Nevertheless, orthopaedic surgeons have adapted by using peer-reviewed rounds as a mechanism to balance external demands with professional autonomy. Through case assessments, surgeons not only reinforce their collective expertise but also demonstrate cost-consciousness, subtly pushing back against external oversight while maintaining control over clinical practice.

Using Adverse-Event Performance Measurement and Feedback as a Boundary Line

Similar to peer-review rounds, the AE-PMF program has the potential to limit intrusion from the Ministry of Health.

> *Obviously, the reaction is like you're questioning your practices Definitely, there were questions regarding why we were asking ourselves this when no one had asked it before. And the point being that, and I remember Division Chief vividly, instead of me answering, he answered right from the get-go, and they said, either we do it and we tailor it with regards to our specific needs, or we let someone else going to do it because this is the future, this is where it's getting. So, either we decide on how we want to tailor it, or government or whatever does it on our behalf, so that was the driver with regards to stakeholder involvement and having your own [tool].* (Research Personnel 1)

The quote underscores the urgency surgeons felt to pre-empt external oversight by proactively designing their own quality-improvement systems. While the AE-PMF program initially raised concerns about its implications for clinical autonomy—particularly the erosion of exclusive professional knowledge—it simultaneously emerged as a strategic boundary line. By developing a tailored AE-PMF system, the division of orthopaedic surgery was able to exert a degree of control over the parameters of surgical evaluation.

The researcher's observation highlights an important paradox: while programs like AE-PMF introduce oversight that could limit clinical independence, they also provide an opportunity to safeguard professional autonomy. By leading the design and implementation of their own quality-measurement tool, surgical units can mitigate the influence of external stakeholders such as the Ministry of Health. This

proactive approach allows surgeons to maintain some control over the standards and metrics by which their practice is assessed.

While increasing oversight of surgical practice appears inevitable, the AE-PMF program demonstrates how professionals can adaptively navigate this changing dynamic. Rather than resisting outright, the division's adoption of AE-PMF represents a pragmatic compromise—balancing the demands of accountability with the preservation of autonomy. In this way, the AE-PMF tool not only enhances surgical quality but also functions as a mechanism for reinforcing professional boundaries and agency.

Navigating CQI Overload: Orthopaedic Surgeons, Material Culture, and Professional Autonomy

As orthopaedic surgeons adapt to the evolving dynamics of the operating room and quality-based procedures, they face practical, technical, and organizational challenges stemming from the integration of CQI initiatives and information technologies. While these systems aim to streamline workflows, enhance patient safety, and reduce errors (Ting et al., 2011), they often introduce new stressors, such as workflow disruptions, resistance to change, and an increased administrative burden (Greenhalgh et al., 2017; Scott Kruse et al., 2018). This section examines how surgeons experience "CQI overload" and its implications for professional identity, autonomy, and the quality of care.

Information technologies and CQI programs have been widely adopted to improve health care efficiency and quality of treatment (Phichitchaisopa & Naenna, 2013). However, their implementation often reveals underlying complexities, such as conflicting organizational demands and unanticipated burdens on clinical staff (Berg, 2001; Bossen, 2007; Chiasson et al., 2007; Cresswell & Sheikh, 2013). At the outset of this study, I was aware of surgeons' overall hesitation toward CQI participation. However, I was struck by the

extent to which some surgeons felt overwhelmed, coining the term "CQI overload" to articulate their frustration with the sheer volume of initiatives.

> *If you step off an elevator and there are 20 posters on the wall about handwashing, you walk by the posters, like, you don't read them. It's just you're done with it. It's too much. Or if I sent out an e-mail every day about another QI project or every day a reminder, they're going to stop opening my e-mails, or just be like no…It's overload, yeah, it's too much. We're treating them like kids. Do you know what I mean? No one is saying I don't want to make better patient care. They're just saying it's too much right now so you have to say, okay. That's what I'm saying. I'm harassing the guys in the division. I'm harassing them on a regular basis about some of the other things, and that's why I said I'm choosing where I'm putting my efforts right now into the QI world. As we just talked about, I'm letting the adverse event report slide a bit.* (CQI Committee Member 1)

Despite actively participating in the CQI committee, this surgeon described feeling inundated by constant reminders of quality improvement—whether through posters, emails, or reporting tools. This "CQI overload" reflects a broader tension in health care, where initiatives designed to improve care quality may paradoxically become stressors that exacerbate clinician burnout. Although CQI programs have been used in some cases to address burnout (Green et al., 2020; Linzer, 2018; Raney et al., 2020), in this case CQI itself appears to function as a stressor, overwhelming surgeons already navigating demanding clinical workloads.

This phenomenon can be understood through the lens of material culture, a sociological concept that examines how physical artefacts reflect societal values, norms, and practices (Miller, 2002; Nicholas, 2005). Within the hospital setting, CQI artefacts—including posters, emails, dashboards, and documentation—serve as tangible symbols of an organization's commitment to patient safety and accountability. However, these artefacts can have unintended consequences. The surgeon's comment reveals how an overwhelming abundance of CQI-related objects saturates the clinical environment, contributing to a sense of fatigue and frustration. These constant reminders pressure surgeons to engage in multiple initiatives simultaneously, intensifying their stress and undermining their focus on core clinical responsibilities.

Surgeons, therefore, must prioritize where to direct their efforts amid competing demands. This reallocation of focus—where certain activities, such as AE reporting, are "let slide"—can be interpreted as a form of resistance to CQI overload. Rather than outright rejection, surgeons appear to manage this overload strategically, balancing CQI participation with their clinical priorities.

To fully understand this resistance, it is essential to consider the broader impact of CQI activities on surgeons' professional identity. Surgeons perceive their roles as deeply tied to clinical work and technical mastery. The saturation of CQI initiatives, therefore, can feel like a misalignment with their professional values and responsibilities. By framing resistance through this lens, we gain a clearer understanding of the complex interplay between material culture, professional autonomy, and surgeons' attitudes toward quality improvement tools like AE-PMF.

The "Doing Culture" of Surgery

Aligned with the need to redefine priorities, many surgeons viewed CQI programs as a hindrance to their clinical roles and, consequently, to their professional identities. Kitto et al. (2015) examined the "doing culture" of surgery, emphasizing how surgeons are fundamentally defined by their actions and practices. This perspective reveals that when CQI programs interfere with daily clinical responsibilities, they present an existential challenge to surgeons' sense of self. Engaging in activities that detract from core clinical duties creates tension between professional values, commitments to patient care, and the external demands of CQI initiatives. This friction contributes to resistance, as surgeons strive to preserve their professional identities and uphold the "doing culture" central to their role.

> *…in a perfect world, [surgeons] do as much clinical work as we can because that's what we feel our job is. But with all these other demands, they take more and more time away from doing [surgery]…people feel like overall they're probably stretched to the limit in terms of their clinical work, especially over the last five years. All of the additional meetings and whether it's research, we're pushed to do more research, pushed to do more education, pushed to do more CQI*

> *initiatives it all starts to creep into your clinical time. And if it does not, then it creeps into your family time. And so, probably in our environment right now where there's less money but required to do more work for collecting patient outcomes and adverse events, everyone probably feels like they're stretched. But it's all for the right purpose and it's all heading in the right direction. But to me it's nowhere near as efficient as it should be.* (CQI Committee Member 2)

This excerpt highlights that a surgeon's perceived primary role is to perform surgery. Conflicting responsibilities—such as CQI engagement—reduce time spent in the operating room, where surgeons feel most connected to their professional purpose. While new systems or technologies may not be outright rejected, resistance often emerges when they conflict with end-users' aspirations, values, or institutional roles (Cresswell & Sheikh, 2013). In this case, participation in the CQI program clashes with orthopaedic surgeons' deeply held perceptions of their professional responsibilities, making the AE-PMF tool appear as a disruptive threat to their identity.

The literature underscores the significance of identity threats in driving user resistance, which frequently leads to implementation failures (Bhattacherjee & Hikmet, 2007; Lapointe & Rivard, 2005). For surgeons, the pressure to engage in CQI, research, and other non-clinical tasks—often driven by State intervention—is exacerbated by a lack of compensation for these activities. The Ministry's involvement, combined with the absence of financial incentives for non-surgical work, challenges surgeons' professional autonomy and disrupts traditional divisions of labour.

Given that professional autonomy's benefits—such as status, authority, and economic privilege—are closely tied to broader social and institutional value systems (Walter & Lopez, 2008), it is unsurprising that some orthopaedic surgeons resist AE-PMF participation. By prioritizing clinical work and maintaining focus on the "doing culture," surgeons seek to reaffirm their professional identity while resisting initiatives perceived to undermine their core expertise.

Having examined how the "doing culture" shapes surgeons' resistance to CQI and AE-PMF programs, the following section examines concerns surrounding data accuracy and the challenges of using AE reporting as a reliable measure of health care quality and safety.

Data Accuracy and Adverse Event Reporting in Surgical Practices

Patient safety and health care quality are central priorities in surgical practice, with accurate reporting of AEs playing a critical role in evaluating these outcomes. However, interviews with surgeons revealed persistent concerns about data input quality and the broader implications of AE reporting. These concerns stem from the heterogeneity of surgical practices and the complexity of cases managed, which, according to participants, compromise the validity of AE data as a universal benchmark for assessing care quality and safety across different surgical settings.

> *I'm not necessarily against that type of intervention or publication of adverse events, but I think the devil is in the details. It's the accuracy of that data that really matters and it gets back to the homogeneity of practices. We're a tertiary care hospital, we get the complex patients, the sick patients, the medically complex patients, so to compare us to a small community outpatient practice that is getting all simple, primary joints and healthy patients is not really fair…* (Junior Surgeon 2)

The Junior Surgeon emphasizes that the heterogeneity of surgical practices creates significant limitations in AE reporting. They argue that, as tertiary care hospitals often manage more complex and medically fragile patients, post-operative AEs are inherently more likely. In this context, comparing outcomes to those of small, community-based practices that primarily handle simpler cases creates an inaccurate and unfair assessment of surgical performance. These challenges call into question the representativeness and reliability of AE data as a meaningful measure of care quality.

More broadly, the interviews revealed a recurring theme: many surgeons perceive their practices and patients as unique, which complicates the standardization of performance metrics. This belief highlights

a fundamental tension between the AE-PMF tool's standardized approach and the diverse, case-specific realities of surgical care. Surgeons expressed skepticism that AE reporting could fully capture the nuances of their clinical expertise and patient populations.

This skepticism aligns with the concept of image management in surgery, where maintaining an image of competence is integral to surgeons' professional identity and status within the health care system (Gkiousias, 2021). As highly skilled practitioners in a competitive, performance-driven environment, surgeons may feel compelled to deflect negative outcomes by attributing them to the limitations of the AE-PMF tool or the complexity of their practice. This response underscores a broader issue: the tension between AE surveillance and surgeons' efforts to preserve their professional dominance. Therefore, it can be argued that surgeons are more likely to emphasize the AE-PMF tool's shortcomings or the uniqueness of their practice rather than acknowledge potential deficiencies in clinical skills or competency.

Conclusion

This chapter explored the complex relationship between medical dominance, surgical CQI strategies, and the challenges orthopaedic surgeons face in adapting to changes within the health care system. It identified that experienced surgeons rely heavily on clinical judgment shaped by epistemic and procedural cultures, particularly the role of visual cognition. These factors often result in resistance to evidence-based guidelines and standardized recommendations.

Orthopaedic surgeons expressed concerns about performance comparisons with colleagues, viewing such practices as undermining their professional and clinical autonomy. The State and Ministry of Health play pivotal roles in implementing quality-based procedures aimed at improving efficiency and revenue. However, these initiatives have not always achieved their intended outcomes, instead creating

unintended consequences such as disrupted operating room dynamics, particularly for junior surgeons who are still establishing their skills and identities within the profession.

Surgeons have responded to these challenges by adopting innovative strategies, such as peer-reviewed rounds, to improve patient outcomes, reaffirm clinical expertise, and mitigate the influence of external entities on their practices. Nonetheless, the growing number of CQI initiatives has led to “CQI overload,” contributing to stress, burnout, and resistance as surgeons strive to balance increasing administrative demands with their primary clinical responsibilities.

Overall, this chapter highlights the complex interplay between the health care system, surgical practice, and surgeons' identities and underscores the need for a nuanced understanding of surgical culture and clinical decision-making processes to promote successful implementation of CQI strategies.

Chapter 5: Striking a Balance: Autonomy, Standardization, and Collegiality in Orthopaedic Surgical Practice

Introduction

This chapter examines the intricate dynamics of implementing CQI initiatives and data-driven AE-PMF systems in orthopaedic surgery. It explores the delicate balance between professional autonomy, surgical knowledge, accountability, and the resistance to standardization that emerges in response. Furthermore, it leverages Katz's typologies—the entrepreneur, the scientist, and the clinician (Katz, 1999)— to analyze how surgeons' attitudes, values, and beliefs, alongside organizational culture, shape their responses to performance measures. By examining these themes, this chapter contributes to the sociocultural discourse on surgical practice while identifying the challenges and opportunities inherent to patient safety and quality improvement. The findings presented lay a foundation for understanding the complexities of CQI initiatives within surgical contexts.

Navigating Autonomy and Standardization in Orthopaedic Surgery

The interplay between surgical knowledge and evidence-based medicine (EBM) has long been debated in medical sociology (Timmermans & Berg 2003). For surgeons, balancing clinical standardization with professional autonomy presents a persistent challenge (Timmermans & Oh, 2010). This section explores how orthopaedic surgeons navigate these competing demands, maintaining control over clinical judgment while selectively engaging with EBM principles.

Two key themes emerged: (1) orthopaedic surgeons assert control over clinical knowledge by developing division-specific guidelines through collegial consensus; and (2) they create workarounds to manage the accessibility and use of AE performance data. The AE-PMF tool, designed to standardize clinical practice

through systematic performance data collection and feedback, serves as a focal point for understanding these dynamics.

While the AE-PMF tool reflects ongoing efforts to standardize surgical practice, it also underscores surgeons' resistance to externally imposed frameworks. Similar to EBM principles, the AE-PMF tool aims to improve outcomes by collecting rigorous data and encouraging adherence to standardized protocols. However, surgeons in the division of orthopaedic surgery have “revitalized” standardization in ways that reinforce their autonomy and expertise. Rather than complying with external guidelines set by governing bodies like the College of Physicians and Surgeons, orthopaedic surgeons collaboratively developed consensus-based protocols for post-operative care.

> *…It would be great if we could standardize everything perfectly, but so far, I don’t think we can do that, but we can standardize a lot. For example, we have standardized our anticoagulation after fractures — we have a divisional document [that outlines] what to do. Now, each physician can override that if they feel strongly about something for a patient, but it [is] there. We have standardized our orders after patients have fracture surgery so that there are standard orders and everybody has something they can follow…*(Division Executive 1)

> *…We have standardized that all fractures of the hip, pelvis…and femur automatically receive anticoagulation for twenty-eight days. Our residents, who write a lot of our orders, don’t even think about it. They know that’s the case.* (Division Executive 1)

In these quotes, the Division Executive highlights how orthopaedic surgeons balance autonomy and standardization through locally developed protocols for anticoagulation following fracture surgery. Drawing on deep venous thrombosis prophylaxis literature, expert opinion, and clinical experience, the surgeons established 'best practice' guidelines tailored to their division's needs. This strategic approach allowed them to maintain control over their decision-making while ensuring consistency and high-quality care.

By creating their own standards, surgeons circumvent the influence of external governing bodies, such as the Ministry of Health, which might otherwise impose more rigid, less context-specific protocols. This

approach reflects their preference for internally driven standardization that aligns with professional expertise, reinforcing their clinical authority and autonomy.

Self-Regulation Through Collegiality

Orthopaedic surgeons often rely on group consensus and peer review to navigate complex cases, blending clinical observations and expert opinions to achieve consistent, cost-effective care. This collegial decision-making process helps balance self-regulation, professional autonomy, and the pursuit of high-quality patient care within institutional constraints.

> *…and we have that peer reviewed round, so it's a bit of…every once a week, we meet as a group of [name of sub-specialty unit] surgeons to discuss cases to ensure that we're in consensus for more complicated cases, so we don't have any outliers with respect to people doing specific surgical interventions. And I think we're putting [forth what is] considered to be standard of care or recommended [care]. So, there's obviously some controversial cases sometimes, but as a group we try to come up to a consensus and that helps probably quality as well as containing costs as well.* (CQI Committee Member 2)

Here, the CQI Committee Member highlights how collegiality and consensus-based practices enhance patient care quality while managing health care costs. By collaboratively reviewing complex cases, surgeons aim to establish uniformity in care delivery, reducing variation and preventing adverse outcomes. This consensus-building process underscores surgeons' commitment to self-regulation, balancing accountability with resource efficiency to meet institutional demands. These collegial practices highlight how surgeons leverage intraprofessional collaboration to navigate external pressures while preserving professional autonomy and control over clinical standards.

Medical Dominance, Expertise, and Collaboration in Decision-Making

Building on the role of collegiality in self-regulation, it is essential to consider the cultural dynamics of surgical practice and their influence on decision-making. Surgical culture shapes professional values, norms, and beliefs, which in turn shape clinical judgment and risk assessment (Bello et al., 2022; Jin et al. 2012). Katz's typologies—the entrepreneur, the scientist, and the clinician—provide a useful framework for analyzing these dynamics (Katz, 1999). The entrepreneurial surgeon relies on experience and individual skill, while the scientific surgeon emphasizes evidence-based research. The clinician-surgeon combines these approaches, integrating clinical judgment with empirical evidence.

> *…It may be that there is a lot of voodoo that goes on but hidden in there somewhere are things that really probably do make a difference. I mean to me it would be a combination of looking at things critically, understanding the science. And I think looking at the basic science evidence, so looking at the clinical outcomes and the evidence that shows and then just looking at it from a biological plausibility perspective. And putting those three things together and coming up with an approach that is logical but also based on what the evidence shows, and I think that there has to be a discussion within the group to come up with some sort of conformity.* (Division Executive 3)

The Division Executive's remarks highlight the clinical-scientist archetype, which integrates evidence-based principles with practical experience. This collaborative ethos—where surgeons critically evaluate evidence and debate clinical approaches—serves as a key mechanism for reducing uncertainty and fostering evidence-based decision-making (Helou et al., 2020; Katz et al., 2019). Through group discussions and consensus-building, surgeons assert their expertise while maintaining collective standards of care, reinforcing medical dominance in the process.

Research by Kitto et al. (2011) similarly indicates that surgeons often prefer consulting colleagues over academic literature when confronting complex clinical decisions. This reliance on experiential knowledge and peer feedback reflects the surgical profession's emphasis on tacit expertise and collaborative problem-solving. Such collegial exchanges sustain intradisciplinary dialogue and help reconcile tensions between professional autonomy and external pressures for standardization.

The Division Executive's reflections further emphasize the collaborative nature of surgical culture, which enables surgeons to assert control over their clinical practice while navigating uncertainties. This collegial dynamic persists across different stages of a surgeon's career but evolves in form and purpose, as demonstrated by the following perspective from a Junior Surgeon:

> *I think in general…we like talking with our colleagues and saying, oh, in this type of a case, what do you do. Here's what I do, what do you do? We actually like that back-and-forth because surgery is such a technical thing that we do. I think people would be receptive to that…It's like, oh, you do that, why do you do that because I do it this way. What's your thinking behind why you do that?* (Junior Surgeon 1)

This quote underscores the importance of experiential knowledge and mentorship within surgical culture. Junior surgeons rely on these collegial exchanges to refine their clinical judgment, technical skills, and decision-making abilities. This process facilitates the transfer of tacit expertise from senior mentors, striking a balance between the art and science of surgery (Cimino, 1999; Schlich, 2007).

Mentorship fosters mutual learning and professional growth, ensuring the continuity of surgical expertise and reinforcing the profession's commitment to high-quality care. By prioritizing expert knowledge over external standards, surgeons maintain control over clinical practice, thereby sustaining medical dominance. This dynamic illustrates the interplay between autonomy, self-determination, and resistance to standardization, aligning with theories of medical dominance (Dawes & Sampson, 2003; Pope, 2003).

Transparency and the Impact on Surgical Identity

The evolving landscape of health care transparency presents a complex challenge for orthopaedic surgeons, particularly in balancing demands for openness with the need to preserve professional autonomy. This section examines the tensions surrounding data accuracy, public interpretation, and the broader implications for surgical identity.

The application of expert knowledge emerged as a recurring theme in interviews. When discussing the publication of individual surgeon AE performance data, one surgeon expressed immediate defensiveness. While surgeons recognized the value of transparency, they emphasized the need for data accuracy and the public's ability to interpret its limitations.

> *Yeah, that's [publishing performance data] already happening in the UK. That happens in other systems, for sure I'm not necessarily against that type of intervention or publication of adverse events, but I think the devil is in the details. And so, to ensure that that is published accurately, and ensuring if that's publicly accessible data, then the public has to be well aware that it's either accurate or inaccurate… …publicly available knowledge is important, but it's also a bit dangerous if you're not able to interpret it properly.. Yeah, I think that's certainly a risk.* (Junior Surgeon 2)

This response highlights surgeons' concerns about external scrutiny and their strategies to mitigate its impact. Historically, the medical profession has relied on the exclusivity of expert knowledge to minimize interference from non-clinicians and maintain dominance (Coburn, 2006; Willis, 2006). However, advancements in patient-centred care and quality improvement frameworks have heightened demands for transparency, shifting greater accountability onto clinicians (Committee on the Quality of Health Care in America, 2001; Fox et al., 2005; Institute of Medicine, 2000; Roter, 2000). As medical knowledge becomes increasingly accessible, surgeons face the dual challenge of losing control over esoteric knowledge while being subject to public critique. By challenging data validity, surgeons aim to protect professional authority and maintain control over their clinical expertise.

The increasing emphasis on transparency and public scrutiny carries profound implications for surgical identity. Surgical identity—rooted in technical skill, clinical judgment, and confidence—has historically been central to surgeons' authority and autonomy (Cassell, 1998; Timmermans & Oh, 2010). Enhanced transparency risks undermining this identity by eroding perceptions of surgeons' expertise and authority.

A notable consequence of transparency is its potential to shift the patient-surgeon relationship. While patient empowerment and shared decision-making have benefits, increased scrutiny can challenge the

traditional hierarchical dynamic (Charles et al., 1999). Surgeons may perceive this as a loss of trust in their expertise, affecting their professional confidence and identity.

Additionally, the rising focus on performance metrics and quality indicators may encourage surgeons to adopt a risk-averse approach to care. Research suggests that concerns over maintaining favorable statistical outcomes can influence surgeons to prioritize measurable performance over individualized patient care (Birkmeyer et al., 2013). Therefore, the push for transparency introduces a delicate tension: while it supports accountability and patient empowerment, it also risks undermining the core elements of surgical identity. By grappling with concerns over data accuracy and its interpretation, surgeons strive to balance the demand for openness with the preservation of their professional authority and autonomy.

Balancing Transparency and Case Selection in Surgical Performance Reporting

In contrast to the previously discussed Junior Surgeon's position on patient access to surgical performance data, an Executive Surgeon within the division of orthopaedic surgery offered a more favorable perspective on transparency.

> *…[it should not be] a big black box when a patient comes to a surgeon to know what their adverse events rates are and what their outcomes are. But at the same time, you want to make sure that physicians are treating all [patients] and not selecting patients based on taking people that are going to make their, quote-unquote, "numbers look good."* (CQI Committee Member 2)

The CQI committee member supported transparency, using the "black box" metaphor to stress that patients should have access to information on surgeons' success and failure rates. This aligns with Clarke and Oakley's (2007) argument that such data are crucial for informed decision-making, as surgical risks can vary significantly by surgeon. However, the committee member also highlighted a critical caveat: increased transparency could lead to unintended consequences, such as surgeons selectively avoiding complex cases to preserve favorable performance metrics.

Research from the United Kingdom, United States, and Europe underlines this phenomenon. For example, Moscucci et al. (2005) found that public reporting of performance data for percutaneous coronary intervention led to selection bias, denial of care, and the migration of high-risk patients to other regions. Similarly, studies have shown that surgeons may prioritize case selection to artificially maintain high success rates and mitigate oversight (Dranove et al., 2003; Gupta et al., 2016; Lee et al., 2004; McCabe et al., 2013).

This approach may reflect an attempt by surgeons to circumvent potential consequences of poor surgical performance data, such as decreased operating room time, reduced research funding, and scrutiny from colleagues. By artificially enhancing performance results through purposive case selection, orthopaedic surgeons can maintain an image of competence and success, allowing them to preserve their dominance within the field.

Navigating Accountability and the "Cloak of Competence" in Orthopaedic Surgery

Surgeons' reluctance to attribute errors or AEs to themselves reflects broader efforts to maintain medical dominance. This tendency can be understood as impression management, a strategy to avoid scrutiny of clinical decision-making and preserve professional autonomy. However, as this new era of CQI emphasizes greater accountability and clinical standards, it becomes increasingly important for surgeons to address individual responsibility and avoid workarounds, such as selective case selection, that artificially enhance performance outcomes.

A recurring theme in interviews was the ambiguity surrounding accountability for AEs. Rather than accepting responsibility, surgeons often implicated colleagues or other health care professionals.

> *…the way it goes right now, just as a typical example, surgeon X is on call in the evening, patient gets admitted for a hip fracture, patient gets transferred to surgeon Y the next day because he's the MRP (most responsible physician) for the week, but surgeon X is in the trauma room that day*

> *who does the actual surgery. Now you have X, Y, and Z all involved and an adverse event can happen anywhere along that way, and all these surgeons' names are on the chart in different areas, and who is recording it, who is ultimately responsible for it?...A lot of these things involve nursing, and physiotherapy, occupational therapy, allied health, so there's a lot of intervention people there*. (Junior Surgeon 2)

This quote highlights the challenges of determining accountability when multiple professionals—surgeons, nurses, and allied health staff—are involved in patient care. While the Most Responsible Physician (or MRP) is tasked with overseeing patient outcomes, they are not always the operating surgeon, creating significant role confusion. This overlap complicates the attribution of errors and fosters reluctance to accept responsibility.

The Junior Surgeon's deflection of responsibility reflects impression management strategies, such as the 'cloak of competence' (Edgerton, 1967), which serve to project authority and preserve autonomy. By redirecting blame onto other parties, surgeons sidestep scrutiny of their clinical practice, safeguarding their authority and decision-making autonomy. As control over clinical judgment is central to professional autonomy, this strategy enables surgeons to maintain dominance within the clinical setting.

However, this deflection conflicts with evolving health care expectations. The rise of CQI and EBM places increasing demands on surgeons to embrace accountability and transparency (Bury & Taylor, 2008). While the cloak of competence may serve short-term goals of autonomy preservation, it is increasingly at odds with broader trends prioritizing measurable outcomes, accountability, and adherence to EBM. Navigating this tension requires surgeons to reconcile their professional autonomy with the demands of modern quality improvement frameworks.

The Complexity of Accountability and Autonomy in Surgery

As previously discussed, orthopaedic surgeons often attributed errors or AEs to their peers or other health care professionals rather than assuming personal responsibility. However, not all surgeons shared this

perspective. A contrasting viewpoint emerged from a CQI Committee member, who emphasized the importance of accountability:

> *I got into this whole CQI world as a senior resident when I watched a surgeon just give random numbers about infection rates on something. I asked him, what's your infection rate? He was like, I don't know. I was like, what do you mean you don't know? I was [astonished] as a trainee surgeon that we didn't receive report cards or have a clear sense of where we stood. That was, again, seven years ago or whatnot, but that's how it was. I'm like, what do you mean? You should know how well we're doing. We are cutting people open that are entrusting us to do a huge thing, and we should aim to be better. If we don't know where we stand with just basic metrics, then how can we be better?* (CQI Committee Member 1)

Here, the CQI Committee member underscores the critical relationship between patient trust and a surgeon's individual accountability. Their astonishment at the lack of basic performance metrics reflects a broader concern: without accurate self-assessment, surgeons lack the tools necessary for improvement. Ironically, the same participant admitted to being unaware of their own infection rates, highlighting a pervasive gap between ideals of accountability and actual practice. Additionally, no surgeon interviewed could provide performance statistics, suggesting a systemic issue.

This disconnect raises questions about whether another form of impression management operates among senior surgeons. To maintain professional authority and dominance, surgeons must demonstrate competence, a central pillar of their legitimacy (Nordin, 2000). Theories of surgical socialization provide further insight into this behaviour, emphasizing how confidence and certitude shape the surgical identity (Bosk, 2003; Good, 1995; Jin et al., 2012).

Haas and Shaffir (1987) argue that during medical education, trainees develop a cloak of competence to mask uncertainty and project confidence. This form of frontstage impression management reassures patients of their surgeon's abilities, fostering trust in the professional and the treatment process. In this context, the senior surgeon's reliance on CQI discourse can be interpreted as strategic. By aligning themselves with the language of quality improvement, surgeons signal accountability and competence while minimizing the risk of external intervention. However, this form of impression management does

not necessarily translate into meaningful changes in practice, revealing a disconnect between performance and practice.

Defining Adverse Events: Negotiating Responsibility and Standards

The hesitancy among orthopaedic surgeons to accept accountability for AEs became particularly evident during discussions surrounding punitive measures. Both senior and junior surgeons expressed concerns about performance data when its use was linked to potential disciplinary action.

> *If it's singling me out with threats of punitive action, then I would probably get very defensive and not value it, and I would be able to criticize the hell out of it. If it's presented as a group and essentially error-prone but the signal that is shown is either erroneous but it might actually show an effect, and there was some sort of intervention that would address it, then it would be something I would evaluate in my practice, to see if it's consistent with the intervention. So, if it's associated with a good practice sort of scenario. Especially when there's a variability in practices.* (Senior Surgeon 1)

Despite extensive experience, the senior surgeon acknowledged that punitive measures could trigger defensiveness and skepticism regarding data validity. This aligns with findings from earlier sections that highlight surgeons' reluctance to take individual responsibility for AEs, regardless of their seniority.

While the Clavien-Dindo classification (Dindo & Clavien, 2004) provides an established standard for defining surgical complications, interviews revealed significant variability in how surgeons perceive and classify AEs. The social construction of AEs highlights how organizational culture, professional norms, and individual beliefs shape their interpretation and reporting. Surgeons' perspectives demonstrated that terms like "near misses," "errors," and "AEs" are sociopolitical constructs shaped by the realities of surgical practice.

> *I would [define an adverse event as] any deviation from normal post-operative care…I think within our Clinical Practice Unit (CPU) we have a general agreement as to what it is…some of the grey area emerges when you're talking about an extra Tylenol for a headache or something like that or some relatively normal incidents that are really fairly trivial even though they might have a medical intervention. To me, I would find it hard to call that an adverse event when it's the normal process*

> *whereas a urinary tract infection or high blood pressure requiring medication or a fall or extra nausea, prolonged nausea that's abnormal from the normal course. So, to me, any deviation from a normal course. A normal course is probably open to some judgment, but that's what I would say it is.* (CQI Committee Member 2)

While aligning with the Clavien-Dindo framework, the CQI Committee Member's perspective reveals variability in defining a "normal" post-operative course. This inconsistency highlights how surgeons often prioritize clinical judgment over standardized definitions when distinguishing between minor and significant AEs.

The Clavien-Dindo classification identifies Grade I AEs—requiring minor therapeutic interventions, such as antiemetics—as the most common complications. However, surgeons often dismiss these as routine occurrences that do not require reporting.

> *If you have just a stitch abscess okay, you're like, yeah, that's 'part of the deal', right? It's more of an expectation for some of the low-grade ones to happen so you're like oh, yeah, that happens, and it moves forward. No harm occurred to the patient. We just address the stitch abscess in the clinic, we clip the end of the stitch, and then they went on their way. It was not an issue. Ones that you have to, say, make phone calls for or have patient meetings for where harm actually happened to a patient, that's a bigger issue, right? You don't want that to happen again, and so more a sense of responsibility and more a sense of not wanting to impact future patients I think is another thing. And your day or your mind is often just filled with other things that you would pay more attention to the ones that are bigger and let the little ones slide.* (CQI Committee Member 2)

This perspective underscores the tension between standardized reporting frameworks and surgeons' beliefs about clinical relevance. As Grimshaw et al. (2004) argue, one of the major challenges in evidence-based practice lies in translating research standards into clinical behaviour. Surgeons' inclination to dismiss minor AEs as "part of the deal" reflects a broader issue of professional judgment overriding standardized metrics.

Further complicating the issue, hospital culture and attitudes toward error reporting play a critical role in shaping how AEs are defined and managed (Singer et al., 2009). Differences in training, experience, and organizational norms contribute to variability in how AEs are perceived, leading to inconsistencies in reporting.

Hospital administrators also acknowledged the tendency to normalize certain AEs as inevitable components of surgical care:

> …So, if a patient got a blood transfusion post hip fracture or anything like that, some people would say no, that's an adverse event because they lost blood. But then other people would say well, no, that's part of the nature of the beast. That's part of it…(Hospital Administrator 1)

The metaphor of AEs as "part of the nature of the beast" reflects an entrenched mindset among some surgeons that complications are unavoidable, even trivial. Such beliefs challenge the foundational goals of tools like the AE-PMF, which emphasize continuous improvement and prevention.

> *…but I think that's gradually changing, because sometimes what people felt was just the price of doing business, nothing we can do about it. Hopefully, we're showing that that's not true.* (Hospital Administrator 1)

The administrator's comments highlight a potential shift in perceptions of AEs over time, driven by tools like AE-PMF. While surgeons may initially resist standardized reporting, these tools could reshape attitudes toward accountability and encourage proactive approaches to AE prevention.

The resistance to AE reporting is further compounded by the high-pressure nature of surgical practice. Described by one administrator as a "warzone," surgeons must balance immediate clinical demands with broader responsibilities, such as CQI participation.

> *…they're in the trenches, they're fighting a war, they're trying to see a bazillion patients and do the this and the that, and it's like when you're trying to sell a more high- level concept, it's a challenge, because they're in survival mode.* (Hospital Administrator 1)

The "warzone" analogy underscores the pressures surgeons face in a high-stakes environment, where survival tactics—such as shifting responsibility or dismissing minor AEs—are employed to protect their autonomy and efficiency. This aligns with sociological discussions of the militarization of medicine, where hospitals become "battlegrounds" and the fight against complications mirrors a war (Fuks, 2021a, 2021b).

In this context, surgeons' "survival mode" behaviour reflects the immense pressure to prioritize immediate clinical demands over administrative or CQI initiatives. This militarized framing normalizes survivalist tactics, such as dismissing minor AEs or shifting accountability, as strategies to protect efficiency and autonomy under stressful conditions.

However, this mindset poses challenges for tools like the AE-PMF, which aim to foster transparency and continuous learning. As surgeons adopt frameworks that reframe AEs as preventable rather than inevitable, they may be encouraged to move away from survivalist behaviours and toward proactive engagement with quality improvement.

Conclusion

This chapter has explored the delicate balance between professional autonomy and the pressures of standardization, transparency, and accountability within orthopaedic surgery. Surgeons actively assert control over clinical practice by developing consensus-based care standards, leveraging collegial processes, and resisting external oversight through workarounds. This approach reinforces medical dominance while safeguarding their professional expertise.

Collegiality and mentorship emerged as critical mechanisms for self-regulation, knowledge transfer, and decision-making. These practices bridge the art and science of surgery, enabling surgeons to balance evidence-based principles with experiential knowledge.

However, increasing demands for transparency and accountability pose challenges to surgical autonomy. By questioning the validity of performance data, resisting minor AE reporting, and employing impression management strategies, surgeons navigate the tensions between professional authority and institutional

expectations. These findings illuminate the sociocultural complexities of CQI initiatives, particularly the interplay between medical dominance, surgical identity, and evolving health care frameworks.

Chapter 6: Discussion, Limitations, Conclusion

Introduction

This study explores the sociological dimensions of orthopaedic surgical practice, focusing on the interplay between professional autonomy, standardization, and collegiality. Utilizing a medical dominance lens alongside sociological theories of audit and feedback, the findings of this study highlight how orthopaedic surgeons navigate tensions inherent in continuous quality improvement (CQI) initiatives, evidence-based medicine (EBM), and adverse event (AE) reporting. The findings of this study are discussed in relation to recent literature, emphasizing their theoretical, methodological and practical contributions. This chapter also addresses the implications of these findings for surgical practice, health care policy, and broader sociological discourses on professionalism and accountability.

Reframing Autonomy and Standardization: From Compliance to Strategic Adaptation

The tension between professional autonomy and standardization has been extensively documented and remains a key area of study in the implementation of surgical CQI initiatives (Endalamaw et al. 2024; Martin et al. 2017). As demonstrated in this case study, Orthopaedic surgeons do not wholly reject CQI mandates. The unique contribution of this study to the field is the empirical demonstration of how they strategically reframe CQI through division-specific clinical guidelines that align with both EBM and experiential knowledge. In doing so, standardization is transformed from a compliance tool into a vehicle for professional reinterpretation that facilitates the maintenance of professional self-regulation.

This practice reflects a type of *situated standardization*, whereby professionals adapt external protocols to the day-to-day realities of surgical work (Exworthy et al. 2019; Timmermans & Berg 2003). For instance, in Chapter 5, Division Executives described implementing fracture management protocols that included

standardized post-operative orders—yet explicitly allowed surgeons the discretion to override them when deemed clinically necessary. Such examples illustrate how surgeons engage with standardization not as passive recipients, but as active participants who reinterpret institutional requirements in ways that preserve clinical authority.

These types of workarounds are also political in nature. By actively reshaping the parameters of local CQI efforts, surgeons engage in what Freidson (1970a) and Coburn (2006) identify as a defining feature of medical dominance: the ability to control the terms of their own evaluation. This strategy allows surgeons to (re)assert their authority over the definition of 'quality', reclaiming interpretive power from State-driven initiatives and externally imposed performance tools.

However, this negotiated autonomy presents a paradox. On one hand, clinician-led adaptations enhance contextual relevance and professional buy-in (Cifra et al., 2021; Jiang et al., 2020; Vilendrer et al., 2022). On the other hand, these same adaptations may introduce variability that undermines efforts to ensure system-wide consistency, comparability, and accountability (Wang et al., 2020). This tension is particularly evident in how Quality-Based Procedure (QBP) policies shape operating room allocation. Although junior surgeons did not explicitly frame these changes in terms of career development, they described indirect consequences—such as reduced O.R. time and slowed consults—that limited their ability to maintain surgical volumes and participate in procedures. This suggests that rigid, top-down standardization may unintentionally disadvantage early-career surgeons, even as it aims to promote consistency and efficiency across the system.

This study further demonstrates how autonomy is not exercised individually, but collectively negotiated (Gómez-Vírseda et al., 2019; Pagano et al., 2025). Surgeons rely on collegial relationships and committee structures to filter, reinterpret, and selectively apply CQI expectations (Knight et al., 2022; Pysyk et al., 2020). As one participant noted, "[*Either] we do it and we tailor it with regards to our specific needs,*

or…someone else is going to do it because this is the future" (Research Personnel #1, Chapter 4). This reflects a pre-emptive strategy for maintaining professional control: by taking initiative, surgeons stay ahead of external oversight, preserving both their autonomy and credibility within an evolving system of accountability.

Several participants also described a growing sense of CQI overload—where the proliferation of quality initiatives, forms, and performance dashboards led not to deeper engagement, but to fatigue and disengagement (Khullar, 2023). In these cases, quality improvement was experienced less as a meaningful tool for learning and more as a bureaucratic exercise that diverted attention from clinical priorities. In this sense, CQI overload reinforced surgeons' selective and strategic engagement with CQI tools.

These findings support arguments by Carstensen et al. (2024) and Foy et al. (2005) that resistance to standardization in high-autonomy professions often takes the form of negotiated compliance, where CQI tools are adapted, not rejected. Similarly, Martin et al. (2017) show that standardized instruments often function less as mandates and more as flexible frameworks. This adaptive use of CQI tools constitutes a form of boundary work—the strategic effort to define and defend professional jurisdiction (Gieryn, 1983). By creating internal guidelines, surgeons respond to policy demands while preserving authority over how quality is defined and operationalized. This aligns with Goodwin's (2021) observation that professionals seldom reject audit outright, but selectively engage with it to maintain local norms and autonomy.

Taken together, findings from this study reveal another key contradiction, efforts to constrain surgical autonomy through standardization may, in practice, reinforce it. When CQI tools are reframed through localized protocols and peer forums, they become mechanisms for reasserting, not reducing, professional control. The challenge, then, is not simply implementing CQI systems, but understanding how they are socially reinterpreted within the surgical culture and subsequently politically appropriated by the profession in the guise of accountability.

Collegiality as a Mechanism for Self-Regulation and Accountability

While the previous section explored how surgeons adapt CQI tools to preserve autonomy, this section examines collegiality as the social infrastructure that enables those adaptations. Collegiality refers to the norms, relationships, and informal practices through which professionals coordinate action, transmit values, and negotiate shared understandings (Abdulrasheed, Zira, and Eneye 2011; Kangasniemi, Rannikko, and Leino-Kilpi 2024). In surgical settings, it manifests through peer networks, mentorship, and committee structures that influence how quality standards are interpreted and operationalized (Wentlandt et al., 2015).

Collegiality functions as a professional infrastructure—a “shared domain of purpose, commitment, and protective solidarity” that shapes how surgeons respond to performance demands (Ng et al., 2024). In this study, we saw how case review rounds served not only as technical consultations but also as venues for internal regulation, where deviations are debated, reframed, and incorporated into accepted norms. As seen in Chapter 5 of this study, participants described these peer forums as essential to building consensus on what constitutes "acceptable variation" in care. Rather than applying CQI metrics uniformly, surgeons use collegial settings to interpret them in ways that are professionally meaningful and contextually relevant.

Findings from Elchamaa et al. (2022) further underscore the importance of collegial dialogue in CQI uptake. In their case study, surgeons reported that positive deviance seminars—informal peer-led discussions of complications and successes—served as powerful mechanisms for both learning and behaviour change. Rather than relying on formal oversight, surgeons often modified their practices based on peer recommendations or observed techniques, particularly when delivered in a nonjudgmental and

trust-based environment. These forums normalized variation and encouraged reflection, highlighting collegiality as a central mechanism of internal accountability.

While peer forums enable reflection and negotiation, mentorship reinforces professional norms through impression management and the performance of competence (Evans et al., 2005). Drawing on the cloak of competence (Haas and Shaffir 1987; Jin et al. 2012), this study found that junior surgeons often turned to senior colleagues—not to question quality expectations, but to learn how to embody them. These relationships extended beyond skill transfer, modelling how to project confidence, align with local norms, and interpret performance standards in socially acceptable ways. As Alidina et al. (2021) and Rakhit et al. (2024) note, mentorship functions not only as a pedagogical tool but as a cultural medium for transmitting values, norms, and expectations around quality. Therefore, while mentorship can support the integration of CQI into surgical culture through professional socialization, it may also limit critical engagement with quality metrics—making it harder to challenge entrenched norms or adapt systems when they fall short of evolving standards (Elchamaa et al., 2022; Kitto et al., 2015).

Non-punitive collegial environments also emerged as a key enabler of meaningful CQI engagement in this study. As Khan et al. (2024) show, multidisciplinary surgical teams perform better when structured settings foster mutual respect, inclusion, and shared voice. Similarly, surgeons in this study described their most productive quality discussions as occurring in spaces where AEs were reframed as shared learning rather than failure. These findings align with Hysong et al. (2012), who argue that audit and feedback systems are most effective when feedback is interpreted in relational, peer-driven contexts. As Vikan et al. (2024) and Surendran et al. (2024) further note, trusted peer delivery helps embed feedback into local norms while reducing negative perceptions of attempts at external control.

However, collegiality's role in safeguarding professional credibility is not without consequence. As Cruess and Cruess (2005) caution, collegial cultures can foster "collegial shielding," where AEs are softened or

reframed to protect peer reputations, highlighting how professional loyalty can come at the expense of transparency. In this study, participants described instances where AEs were downplayed during peer discussions, counteracting the openness that CQI systems are designed to promote (see Chapter 5). These tensions illustrate that while collegiality can support internal accountability, it may also limit critical scrutiny and constrain system-wide learning.

This study contributes a deeper understanding of collegiality as a mediating force between CQI policy and surgical practice. Rather than serving as a passive cultural backdrop, collegiality operates as an active mechanism of self-regulation, shaping how quality frameworks are interpreted, negotiated, and enacted. It fosters internal accountability, enables local adaptation, and lends legitimacy to CQI efforts through peer validation. At the same time, collegiality can inhibit critique, obscure complications, and reinforce entrenched norms. As Wentlandt et al. (2015) note, while peer-delivered feedback is often more acceptable to clinicians, it requires complementary structures to balance professional autonomy with meaningful oversight. Understanding collegiality as both an enabler and a constraint is essential for designing CQI systems that align with professional values while still promoting transparency, accountability, and system-wide learning.

From Oversight to Ownership: Reinterpreting Transparency in Surgical Practice

Transparency mechanisms such as the AE-PMF tool, QBPs, and broader Health System Funding Reform (HSFR) policies are intended to enhance accountability by standardizing performance and tying care to measurable outcomes (Baxter et al., 2016; Brunsson & Jacobsson, 2010; Collier, 2008; Ontario Ministry of Health and Long-Term Care, 2018) However, this study reveals that Orthopaedic surgeons do not passively comply with these mechanisms. Instead, they reinterpret, reframe, and selectively engage with them in ways that maintain clinical authority while signaling alignment with institutional goals.

As many surgeons noted, transparency initiatives felt disconnected from the complexities of surgical practice. Tools like AE-PMF were seen as administrative requirements meant to satisfy bureaucratic demands for oversight while failing to offer clinical utility. This aligns with Power's (1997) concept of rituals of verification, whereby performance systems function more to demonstrate accountability than to foster meaningful learning. As a result, post-operative AE reporting turns into a symbolic task that aims to fulfill external expectations without disrupting surgeons' clinical judgement or autonomy, as this study demonstrates (see Chapter 4, sections titled "Performance Outcomes and Clinical Autonomy" and "Navigating CQI Overload").

Quality-Based Procedure-linked scheduling systems elicited similar critiques. Senior surgeons often had the flexibility to navigate performance pressures, while junior colleagues experienced constrained access to resources—illustrating how audit regimes, though framed as objective, often reproduce professional hierarchies. These dynamics echo Waring's (2007) notion of recontextualization, where standardized metrics are absorbed into professional practice, but are disconnected from their intended regulatory purpose.

What emerges is an interesting contradiction: although transparency mechanisms are intended to broaden accountability beyond the profession, they may actually reinforce medical dominance in practice. They also allow senior clinicians to manage accountability on their own terms by framing, negotiating, or bypassing performance data based on the situation. This study extends work by Goodwin (2021) by demonstrating how clinicians instrumentalize audit tools to maintain the appearance of oversight while preserving professional control.

The key insight here is that transparency does not necessarily constrain autonomy; it redistributes it. In high-autonomy fields like surgery, audit tools may legitimize professional authority rather than challenge it. If CQI systems such as the AE-PMF tool are to achieve their goal of improving care quality and

accountability, they must not only track compliance but also account for how data are interpreted, contested, and reshaped in everyday clinical practice.

Adverse Events as Sociopolitical Constructs: Reframing Surgical Error and Accountability

While classification systems like the Clavien-Dindo scale (Clavien et al. 2009; Dindo & Clavien, 2004) are designed to provide consistent definitions of surgical error, this study demonstrates that AEs are not objective indicators of quality. Instead, they are socially constructed—shaped by context, power, values, and professional norms.

Surgeons in this study frequently reframed low-grade complications (e.g., Grade I AEs) as 'expected' or 'unavoidable,' often choosing not to document them formally in the AE-PMF system. These decisions were not a result of oversight but due to the belief that such events did not meaningfully reflect quality or competence. In doing so, surgeons exercised discretion not only in how they managed care, but in how they defined what constituted an AE. In other words, they maintained their capacity to define the "situation" (Goffman, 1959) in the context of their professional practice whereby an AE is "normalized" and thus avoids being caught within a governmental discourse as a patient safety transgression.

This discretion also extended to how post-operative AE categories were applied. The same AE might be reported, excused, or dismissed depending on its perceived severity, audience, or reputational risk. In peer-review rounds and committee meetings, the distinction between reportable and acceptable was not dictated by protocol but negotiated among peers. Here, AE classification becomes a tool of professional jurisdiction and a mechanism through which surgeons assert control over how their work is evaluated.

This aligns with Freidson's (1970c) theory of medical dominance, which emphasizes the role of professionals in setting the terms of their own accountability. Surgeons did not reject AE frameworks

outright, instead, they adapted them to fit relational norms, clinical judgment, and professional interpretations of meaning.

The AE-PMF's rigid reporting structure further contributed to this dynamic. As several participants noted, the system failed to capture contextual nuance or accommodate variability in patient trajectories. Instead of promoting reflection, AE documentation was experienced as a bureaucratic task that performed oversight without delivering insight. This skepticism reflects critiques by Cunha et al. (2025), Fleck et al. (2025), and Schuler et al. (2025), who argue that standardized quality tools often fail to capture the uncertainty, urgency, and responsiveness that define real-time clinical decision-making.

The conceptual contribution that this study provides is that AE reporting is not merely a technical task—it is shaped by professional judgment, social relationships, and shared interpretations of what constitutes error. If CQI efforts are to be effective, they must contend with the relational, temporal, and interpretive dimensions of surgical work—not just the metrics that attempt to measure it.

Implications for Clinical Practice and Surgical Continuous Quality Improvement

This study reveals how CQI systems are not passively adopted but actively reshaped by surgeons through interpretation, adaptation, and selective engagement. These findings point to several implications for surgical practice and quality improvement initiatives where professional discretion, peer regulation, and institutional dynamics all shape how quality is interpreted and implemented.

(a) Support Locally Driven Standardization

Surgeons expressed greater acceptance of protocols developed within their division, especially when these combined EBM guidelines with experiential knowledge. Tools like fracture management and anticoagulation pathways were well-received when they permitted clinician discretion. CQI tools should

therefore be designed with contextual customization in mind. Rather than imposing standardized mandates, policymakers and hospital leaders should co-develop initiatives with frontline surgical teams.

(b) Address CQI Overload Through Prioritization and Streamlining

Continuous quality improvement fatigue was a recurring theme, with participants describing dashboards, checklists, and forms as overwhelming rather than helpful. This CQI overload diminished engagement and risked turning quality work into a box-checking exercise. Institutions should prioritize and consolidate reporting requirements, reduce redundancy, and clearly explain the purpose and use of collected data (Pesec et al., 2021). Quality efforts should be paced strategically, with built-in recovery periods or rotations to avoid burnout (Schwartz et al., 2024).

(c) Reframe Feedback as Learning, Not Surveillance

Surgeons responded more positively to performance data when it was discussed in collegial, non-punitive environments. Rather than relying on compliance-driven dashboards, institutions should reframe feedback as a developmental and relational process. Peer-led review, guided reflection, and trust-based dialogues like positive deviance are more likely to foster open dialogue and sustained engagement with quality goals (Elchamaa et al., 2022; Eva & Regehr, 2013; Ivanovic et al., 2015).

(d) Improve AE Reporting Tools to Reflect Clinical Complexity

Participants critiqued AE-PMF tools as rigid, reductive, and disconnected from clinical nuance. Low-grade complications were often excluded not due to negligence, but because current forms failed to capture relevant context. To make AE systems more useful, they should include narrative fields, clinical modifiers, and space for contextual interpretation (Chopard et al., 2021). Mixed-method approaches such as structured debriefs or qualitative feedback may also help bridge the gap between reporting and reflection (Elchamaa et al., 2022).

(e) Foster Clinical Leadership in CQI Design

Participants who were more engaged in CQI tended to be those who had institutional influence and leadership roles. Cultivating clinical CQI champions (Elchamaa et al., 2022) and embedding quality work into leadership pathways can promote sustained engagement (Tiferes et al., 2015). This also ensures that performance metrics reflect real clinical priorities rather than abstract policy goals.

Limitations

There are a number of limitations within this study that need to be acknowledged. As with most qualitative research, the findings are not empirically generalizable beyond the case study site (Gallo et al. 2018). However, the goal of this research was not broad generalization, but rather conceptual insights and generalisability concerning how Orthopaedic surgeons interpret and negotiate CQI frameworks like the AE-PMF tool (Kitto, Chesters, and Grbich 2008). While the sample was relatively small, participants were purposively selected (Palinkas et al., 2015) to capture a diverse range of roles and perspectives within a single orthopaedic division. Additionally, conducting the study at a single site may limit the transferability of findings, as they reflect local dynamics that may not be present in other institutional or regional contexts. Future research could explore whether similar patterns of strategic adaptation and collegial negotiation are observed across different surgical specialties or health systems.

Conclusion

In conclusion, this thesis examined how orthopaedic surgeons interpret and engage CQI systems, with particular focus on a data-driven AE-PMF tool. Drawing on sociological theories of medical dominance, professional autonomy, and surgical safety culture, the findings demonstrate that CQI mechanisms like

the AE-PMF are not implemented in a uniform or top-down manner. Instead, they are actively reinterpreted, selectively engaged with, and embedded within collegial networks, mentorship relationships, and discretionary professional judgment.

Rather than reducing surgical autonomy, the AE-PMF tool and related CQI initiatives became sites where autonomy was renegotiated and preserved through what this study describes as "strategic adaptation"—the alignment of quality practices with local norms, experiential knowledge, and professional judgment. While these adaptations enhanced contextual relevance and professional ownership, they also introduced risks. The tendency to under-report low-grade complications, reframe AEs in collegial discussions, or treat feedback mechanisms as symbolic tasks underscores the fragility of PMF systems when they fail to align with clinical realities.

This research also highlights that audit and feedback tools like the AE-PMF are not purely technical systems but socially and politically shaped instruments influenced by professional hierarchies and institutional norms. The findings emphasize that the success of CQI programs depends not only on the metrics they track, but on how those metrics are interpreted, negotiated, and acted upon in practice. Tools like AE-PMF must be designed not just to monitor performance, but to foster meaningful dialogue, contextual understanding, and shared accountability.

If surgical quality initiatives are to succeed, they must bridge the gap between institutional oversight and professional ownership. Doing so requires recognizing surgeons not simply as objects of regulation, but as active agents in shaping what quality means, and how it is achieved in everyday practice.

APPENDIX A: Recruitment Email

Dear staff at [INSTITUTION]'s Department of Orthopaedic Surgery,

You are being asked to participate in a research study assessing your values, attitudes, and beliefs towards implementing a surgical continuous quality improvement (CQI) program in the Division of Orthopaedic Surgery. The study is being conducted by a multidisciplinary research team led by [NAME OF DIVISION CHIEF] at the Department of Surgery at [INSTITUTION].

As you are aware, a quality improvement program is currently being rolled out in the Division of Orthopaedic Surgery. Orthopaedic surgeons are actively participating in a data-driven performance measurement and feedback program whereby surgeons are involved in the monitoring and reporting of post-operative adverse events (AEs) and patient outcomes more generally. By investigating the various sociocultural and organizational factors which shape Orthopaedic Surgeons' understanding and values towards surgical CQI and the monitoring of post-operative AEs, the Division of Orthopaedic Surgery will better be able to design and implement clinical CQI strategies which align with beliefs and values held by surgeons within the Division. Your participation will provide insight into the experiences of Orthopaedic Surgeons and help identify the challenges of implementing such a program.

The study involves participating in a one-to-one interview. You will be asked about your values, attitudes, and beliefs towards surgical CQI, and to identify some of the challenges experienced when implementing the CQI program. The interview is expected to last no longer than 60 minutes. The interviewer will follow a semi-structured format, where questions are adapted and changed based on your responses to gain a deeper understanding of your experience.

There are no foreseeable risks associated with participating in the interview. However, if you feel uncomfortable in any way during the process, you may decline to answer any question, or not complete the interview. The interviews will be audio recorded. If you wish to opt out of the recording, you will not be able to participate in this study. Your responses will remain confidential. You will be asked to read and sign a consent form in person immediately prior to the interview by the Research Coordinator.

If you are interested in participating in this study, please contact the study's Research Coordinator, Ms. Rima ElChamaa.

Ms. Rima ElChamaa
University of Ottawa — School of Sociological
and Anthropological Studies

APPENDIX B: Interview Guide — Semi-Structured Interview Questions

1. In your own words, how would you define continuous quality improvement (CQI) and its purpose?

2. What value, if any, do you see in continuous quality improvement?

3. How would you describe your role, as a surgeon within the Division of Orthopaedic Surgery, in relation to continuous quality improvement?

4. The Division of Orthopaedic Surgery holds monthly quality improvement meetings. How would you describe the purpose of these meetings? What, if any, role do you play in them?

5. How are quality issues or concerns identified within your Division, and how are they typically addressed? In your view, how well does this process work, and are there areas that could be improved?

6. The Division has implemented a system (App) for reporting and monitoring adverse events. Can you walk me through how you typically report an adverse event using this system?

7. How would you define an adverse event? In your view, are adverse events the same as clinical errors, or are they different?

8. The current system includes a severity ranking for adverse events. How would you describe your understanding of this ranking system?

9. What are your thoughts on the value of reporting adverse events? Are there ways in which this reporting process could be improved?

10. How, if at all, does reporting adverse events influence your clinical practice? Can you describe any positive or negative effects?

11. How would you characterize your colleagues' receptivity to the CQI program? More broadly, how would you describe the safety culture within your Division?

12. How has the implementation of recent health system funding reforms—specifically quality-based procedures—impacted your clinical practice, if at all?

13. Regarding performance measurement and feedback, how is data on your individual clinical practice shared with you, and how frequently? What is your impression of this feedback?

14. Do you think this feedback affects your decision-making or clinical practice? If so, in what ways?

15. When you decide to implement changes or improvements to your surgical practice, how do you typically go about it? Can you walk me through your process?

16. In your opinion, is the Division's current approach to quality improvement effective in improving patient safety and outcomes? Are there other approaches you believe might be more effective? Why?

APPENDIX C: Minimal Risk Informed Consent Form

Minimal Risk Informed Consent Form for Participation in a Research Study

Study Title: Continuous Quality Improvement in Orthopedic Surgery - Assessing the Impact of Data-Driven Performance Indicators on Organizational Quality Culture

OHSN-REB Number*:* [INSERT CASE NUMBER]

Principal Investigator: [INSERT NAME OF PRINCIPAL INVESTIGATOR] [INSERT CONTACT INFORMATION]

Funder: OHRI

INTRODUCTION

You are being invited to participate in a research study. You are invited to participate in this study because you are a surgeon, department head, or key research personnel working at [INSERT HOSPITAL NAME]'s division of Orthopaedic surgery and have agreed to monitor and report adverse events and outcomes. This consent form provides you with information to help you make an informed choice. Please read this document carefully and ask any questions you may have period all your questions should be answered to your satisfaction before you decide whether to participate in this research study.

Please take your time in making your decision. You may find it helpful to discuss it with your friends and family.

Taking part in this study is voluntary. Deciding not to take part or deciding to leave the study later will not result in any penalty or affect current or future employment.

IS THERE A CONFLICT OF INTEREST?

There are no conflicts of interest to declare related to this study.

WHY IS THIS STUDY BEING DONE?

The purpose of the study is to investigate Orthopaedic surgeons' values, beliefs, and attitudes towards the tracking and reporting of surgical adverse events, as well as surgical continuous quality improvement more generally

HOW MANY PEOPLE WILL TAKE PART IN THIS STUDY?

It is anticipated that about 30 people will take part in this study from the Orthopaedic units at the [INSERT NAMES OF HOSPITAL CAMPUSES]

This study should take 6 months to complete and the results should be known in about 12 months.

WHAT WILL HAPPEN DURING THIS STUDY?

You will be asked to attend one interview. During this interview, you will meet with a member of the research team. Each interview will be about 30-60 minutes in length and will take place in a location of your choosing. You will be asked to speak about values, attitudes, beliefs, and experiences with the continuous quality improvement program currently being rolled out in the division of Orthopaedic surgery. Please talk to the research team if there is information that you do not feel comfortable sharing.

The information you provide is for research purposes only. Some of the questions are personal. You can choose not to answer questions if you wish.

You will be audio recorded during the interview.

HOW LONG WILL PARTICIPANTS BE IN THE STUDY?

Your participation in this study will last for about a single 30 to 60-minute interview.

CAN PARTICIPANTS CHOOSE TO LEAVE THE STUDY?

You can choose to end your participation in this research (called withdrawal) at any time without having to provide a reason. If you choose to withdraw from the study, you are encouraged to contact the research team.

You may withdraw your permission to use information that was collected about you for this study at any time by letting the research team know. However, this would also mean that you withdraw from the study.

If you decide to leave the study, you can ask that the information that was collected about you not be used for the study. Let the research team know if you choose this.

CAN PARTICIPATION IN THIS STUDY END EARLY?

Your participation on the study may be stopped early, and without your consent, for reasons such as:

- The Ottawa Health Science Network Research Ethics Board withdraws permission for this study to continue

If you are removed from this study, the research team will discuss the reasons with you.

WHAT ARE THE RISKS OR HARMS OF PARTICIPATING IN THIS STUDY?

You may become uncomfortable while discussing your experiences. You may choose not to answer questions or leave the interview at any time if you experience any discomfort.

WHAT ARE THE BENEFITS OF PARTICIPATING IN THIS STUDY?

You may not receive direct benefit from participating in this study. We hope the information learned from this study will help improve the continuous quality improvement program in the division of Orthopaedic surgery.

HOW WILL PARTICIPANT INFORMATION BE KEPT CONFIDENTIAL?

If you decide to participate in this study, the research team will only collect the information they need for this study.

Records identifying you at this centre will be kept confidential and, to the extent permitted by the applicable laws, will not be disclosed or made publicly available, except as described in this consent document.

Authorized representatives of the following organizations may look at your original (identifiable) records at the site where these records are held, to check that the information collected for the study is correct and follows proper laws and guidelines.

- The Ottawa Health Science Network Research Ethics Board who oversees the ethical conduct of this study at The Ottawa Hospital
- The Ottawa Hospital Research Institute to oversee the conduct of research at this location

Information that is collected about you for the study (called study data) may also be sent to the organizations listed above. Your name, address, or other information that may directly identify you will not be used. The records received by these organizations may contain your participant code, gender, and age. Coded study data will also be sent to the University of Ottawa for analysis.

During the discussions, participants will be encouraged to refrain from using names. If names or other identifying information is shared during the discussion, it will not be included in the written records.

Audio recordings will be sent offsite to Verbatim Ottawa Services Inc for transcription. The audio recordings will be deleted after transcription.

If the results of this study are published, your identity will remain confidential. It is expected that the information collected during this study will be used in analyses and will be published and presented to the scientific community at meetings and in journals.

Your de-identified data from this study may be used for other research purposes. If your study data is shared with other researchers, information that links your study data directly to you will not be shared.

Even though the likelihood that someone may identify you from the study data is very small, it can never be completely eliminated.

WHAT IS THE COST TO PARTICIPANTS?

Participation in this study will not involve any additional costs to you.

ARE STUDY PARTICIPANTS PAID TO BE IN THIS STUDY?

You will not be paid for taking part in this study.

WHAT ARE THE RIGHTS OF PARTICIPANTS IN A RESEARCH STUDY?

You will be told, in a timely manner, about new information that may be relevant to your willingness to stay in this study.

You have the right to be informed of the results of this study once the entire study is complete. If you would like to review or be informed of the results of this study, please let us know how you would like to be contacted at the time of your interview.

Your rights to privacy are legally protected by federal and provincial laws that require safeguards to ensure that your privacy is respected.

By signing this form, you do not give up any of your legal rights against the research team or involved institutions for compensation, nor does this form relieve the research team or their agents of their legal and professional responsibilities.

You will be given a copy of this signed and dated consent form prior to participating in this study.

WHOM DO PARTICIPANTS CONTACT FOR QUESTIONS?

If you have questions about taking part in this study, you can talk to the primary investigator who oversees the study at this institution. That person is:

Principal Investigator Name	Telephone

If you have questions about your rights as a participant or about ethical issues related to this study, you can talk to someone who is not involved in the study at all. Please contact The Ottawa Health Science Network Research Ethics Board, Chairperson at 613-798-5555 extension 16719.

Study Title: Continuous Quality Improvement in Orthopedic Surgery - Assessing the Impact of Data-Driven Performance Indicators on Organizational Quality Culture

SIGNATURES

- All my questions have been answered,
- I understand the information within this informed consent form,
- I have read, or someone has read to me, each page of this participant informed consent form,
- I do not give up any of my legal rights by signing this consent form,
- I agree to take part in this study.

I consent to future contact to review and comment on the combined results (please initial):

_____ Yes _____ No

Signature of Participant	Printed Name	Date

Investigator or Delegate Statement

I have carefully explained the study to the study participant. To the best of my knowledge, the participant understands the nature, demands, risks and benefits involved in taking part in this study.

Signature of Person Conducting the Consent Discussion	Printed Name and Role	Date

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