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Nurses' Medication Work: The Social Organization of Rule Breaking to Keep Patients Safe

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Nurses' Medication Work: The Social Organization of Rule Breaking to Keep Patients Safe

by

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Abstract

Patient safety has emerged as one of the most important and widely accepted aims of contemporary health care organizations. Medication errors are common and pose potentially serious threats to the safety of patients. Consequently, initiatives to improve patient safety often target nurses' work with medications. A plethora of research studies examine medication errors and contribute to dominant formulations that impose stringent rules thought to enhance medication safety. However, little literature has examined the materiality of medication work and few research studies are oriented to the knowledge practices of nurses. This study used an institutional ethnographic approach, grounded in nurses' everyday experiences, to contribute a different way of knowing about medication work. The study findings revealed a disquieting disjuncture between theoretical accounts of medication work and the actual everyday practices of nurses working with medications. Nurses routinely use their professional judgment and discretion to adapt stringent rules in order to keep patients safe and accomplish medication work effectively. However necessary and sensible it may be, nursing work that does not adhere to standard practice and institutional policy may be perceived as "breaking the rules". Rule breaking is risky for nurses, as their professional competence is scrutinized and evaluated through regulatory and theoretical frameworks that value adherence to rules as the only way to demonstrate safety. The core argument developed in this analysis is that discretion is an essential element of competent medication practice, and that framing discretionary work within a rule based discourse obscures the safety work that nurses are routinely and regularly engaged in.

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Table of Contents

Abstract ii

Acknowledgements iii

Dedication v

Table of Contents vi

List of Figures x

List of Abbreviations xi

Glossary of Institutional Ethnography Terms xii

Chapter 1: Nurses' Medication Work: The Social Organization of Rule-Breaking 1
- Research Interest 2
- Troubles in Nurses' Medication Work: The Problematic for the Inquiry 4
- Outline of the Thesis 7

Chapter 2: The Research Context: Discourse and Ideology 12
- Nurses' Work and Women's Work 12
- Defining Nursing and Nursing Work 14
- Nurses' Medication Work 15
- Situating Medication Work in the Literature 16
  - Discursive framing of medication work 17
    - The discursive framework of biomedical science 18
    - The discursive framework of technology 20
    - The discursive framework of management 24
    - Discourses of safety and risk 27
    - Legal discourse 31
- Summary 33

Chapter 3: Developing the Study: Through the Lens of Institutional Ethnography 36
- Core Ontology 36
- Historical Evolution 38
- Epistemological Shift 39
  - Standpoint 39
  - Experience 40
  - Positioning as researcher 41
- Ontological Shift 42
- Generous Conception of Work 43
- Research Aims 45
- Selected Institutional Ethnographic Studies 46

The Research Process 49
Research Settings 49
Data Sources 50
Informants 51
Recruitment 52
Observations 52
Interviews 55
Documentary analysis 56
Analysis 57
Ethical Dimensions 59
Summary 60

Chapter 4: The Everyday World of Medication Work 61
Medication Work as a Textual Practice 61
Texts Mediating Medication Work 62
The production of the medication administration record 62
Expert reading of the MAR 68
Ruling texts 71
Professional conduct process 75
Summary 800

Chapter 5: Medication Work as Discretionary Practice 82
Understandings of Nursing Work with Medications 82
Uncovering hidden work processes 82
Medication work: A multifaceted work process 88
The Medication Schedule: Race Against Time 94
The importance of time in today's health care environment 94
The centrality of time in medication work 95
The medication schedule as an orienting device 97
Working around the medication schedule 103
Summary 106

Chapter 6: Standardization and the Discursive Construction of Rules 108
Medication Work: Compelling Discourses of Safety and Risk 109
Standardization: Creating Order and Control 113
Standardized Medication Work: Overruled? 115
Ideological Practices in the Everyday World 118
Nursing work: Loosely structured routine 118
Time-intensive demands of ideological safety and quality initiatives 121
The emergence of discretionary work 123
Unofficial sanctioning of discretionary work 127
Summary 132

Chapter 7: "The Right Patient": An Analysis of the Social Organization of Knowledge 134
The Emergence of Strict Procedural Processes to Identify the "Right Patient" 135
Evidence Underpinning the Two-Client-Identifiers Required Organizational Practice 136
Studies utilized to develop the guidelines for the two-client-identifiers ROP 137
References supporting the two-client-identifiers ROP 141
The Dominance of ROP 147
Compliance With ROPs: Ideological Evidence 149
Summary 155

Chapter 8: How Nurses Know "The Right Patient": Continuing the Analysis of the Social Organization of Knowledge 156
Everyday Patient Identification Work: What Actually Happens 156
Barriers to the standardized process for identifying patients 159
What difference would it make? 162
The time-intensive nature of the institutionally mandated patient identification process 165
Nurses' Safety Work: Global and Specific` 167
Summary 170

Chapter 9: Conclusions, Recommendations, and Implications for Research 172
Major Findings 172
Significance of Findings 176
Contested knowledge practices 176
Textual production of knowledge: Virtual reality 180
The social organization of rule breaking 183
Implications and Recommendations for Future Research 187
Implications for nurses 188
Implications for nurse educators 189
Implications for health care organizations and policy development 191
Implications for future research 193
Limitations of the Research 194
Conclusion 195

References 197

Appendix A: Sample of Questions Used to Initiate Conversations 237

Appendix B: Letter of Introduction 239

Appendix C: Consent Form for Interviews 243

Appendix D: Consent Form for Observations 247
Appendix E: Consent Form for Patient Nurse Observations 251
Appendix F: Medication Administration Record 254
Appendix G: PRN Medication Administration Record 255
Appendix H: Sample of a Unit Medications Checklist 256
Appendix I: Medication Use Process 257
Appendix J: Patient Identity Verification Process 258
Appendix K: Sample Test for Compliance for the ROP for Two Client Identifiers 259

List of Figures

Figure 1. The med cart. 64

List of Abbreviations

ACSQHC ..... Australian Commission on Safety and Quality in Health Care
CARNA..... College and Association of Registered Nurses
CHSRF..... Canadian Health Services Research Foundation
CIHI ..... Canadian Institute for Health Information
CNA ..... Canadian Nurses Association
CPOE ..... Computerized Physician Order Entry
HIV ..... Human Immunodeficiency Virus
HPA..... Health Professions Act
IE..... Institutional Ethnographic
ISMP ..... Institute for Safe Medication Practices
IV ..... Intravenous
LPN..... Licensed Practical Nurse
MAR ..... Medication Administration Record
NCPS..... National Center for Patient Safety
NPSA ..... National Patient Safety Agency
PCA..... Patient-Controlled Analgesia
PRN..... Pro re nata (a Latin term meaning as the circumstance arises)
RN..... Registered Nurse
ROP..... Required Organizational Practice
VA..... Veteran Affairs
WHO..... World Health Organization

Glossary of Institutional Ethnography Terms

Term	Definition
Actual; Actualities	An open term; not defined; not given content. Meant to be used like an arrow on a map that says, "You are here," always directing us back to the "outside the text" in which living goes on and in which the text is being read (Smith, 1992, p. 92).
Alternative sociology	Smith's alternative sociology is grounded in the everyday experiences of embodied people (rather than in theory governed discourse), and investigates how the everyday world of experience is put together by relations that extend far beyond the everyday. It is a resource that can be used to extend people's own knowledge (Smith, 2005, p. 1).
Capture; Institutional Capture	The process through which institutional discourse consumes or displaces experiential knowledge. "Institutional capture can occur when both informant and researcher are familiar with institutional discourse" (Smith, 2005, p. 225).
Data dialogue	The dialogue between the researcher and informant that evokes the person's experience. There is always a third party—those for whom the ethnography is written who will have future dialogue with the account (Smith, 2005, p. 224).
Discourse	The social character of language and its connection with relations of social power (Frampton, Kinsman, Thompson, & Tilleczek, 2006, p. 30). Building from Foucault, discourse refers to the social relations that coordinate the practices of definite individuals talking, writing, reading, watching, and so forth, in particular local places at particular times (Smith, 2005, p. 224).
Discursively organized	Social life has meaning that is organized outside the local settings where people live and from where they speak when they talk about their experiences. Everything we know about our lives is discursively organized (Campbell & Gregor, 2004, p. 91).

Term	Definition
Disjuncture	A line of fault; bifurcated consciousness (Smith, 1987). G. W. Smith (1990) described a disjuncture as a problem of knowing – of being told one thing, but in fact knowing another based on personal experience (p. 632).
Embodied knower	People know through having a body and a consciousness. The historical conditioning and continuing institutional enforcement of knowing that stems from living in their own body in specific times and under specific conditions (Campbell & Gregor, 2004, p. 24).
Empty	Like shells – they need a filling to complete their sense (Smith, 2005, p. 210).
Ethnography or Institutional ethnography	Institutional ethnography, or IE, is ethnographic in its commitment to an in-depth exploration beginning with people's lived experiences (Smith, 2005).
Everyday world	One's bodily and material existence (Smith, 1987, p. 97). It is not an abstracted setting, but an actual and particular place in the world.
Experience	Experience originates in people's bodily being and action; only the experiencer can speak of his or her experience (Smith, 2005, p. 224). Experience emerges in dialogue.
Ideological account	An ideological account references the discourse—how things should be done according to organizational practices—not what was actually said or done (Campbell & Gregor, 2004, p. 71).
Ideological practice	G. W. Smith (1990) explained an ideological practice operates as a set of procedures used to know theoretically, categorically, a social world with a view to administering it (p. 631). D. E. Smith (1990) noted ideological practices are at odds with a knowing that begins from the site of people's experiences (p. 43).

Term	Definition
Ideology	D. E. Smith (1990) explained ideology can be viewed as a procedure for sorting out and arranging conceptually the living actual world of people so that it can be seen as we already know it ideologically (pp. 42–43). Ideology is a metadiscourse specialized for specific contexts that regulate others (Smith, 2005, p. 217), such as new public managerialism. A set of practices that are rewritten in a particular way (Campbell & Manicom, 1995, p. 9).
Indexicality	Any account of actualities depends on referring back to those actualities to make sense. IE does not transcend (go beyond) indexicality; IE depends on and refers back to the actualities from which findings are extracted (Smith, 2005, p. 224).
Institution; Institutional; Institutional processes	The complex of relations and processes that intersect and connect around a specific function (such as health care) to work together to produce effects in local settings (Ng, 2006; Smith, 1987).
Institutional ethnography (IE) or ethnography	Institutional ethnography, or IE, is ethnographic in its commitment to an in-depth exploration beginning with people's lived experiences (Smith, 2005).
Knowledge	Knowledge is socially organized (Smith, 2005, p. 27).
Material; Materiality	The world is viewed as material and known through material conditions such as activities, actions, actualities and texts.
Objectified	Produced independently (external to) to particular people and places (Smith, 2005, p. 14).
Objectified forms of knowledge	An objectified form of knowledge subscribes to an objective, value-free approach, pretending that the world can be explored from some disinterested neutral place somehow above or outside the social (Frampton et al., 2006). The concealed masculinity of the subject is foundational to objectified forms of knowledge (Smith, 2005, p. 23).

Term	Definition
Objectified relations of ruling	Ruling relations are those that coordinate one's doings and work in particular local sites with the doings and work of others elsewhere and at different times; they are objectified in the sense that they cannot be identified with particular individuals (Frampton et al., 2006, p. 19).
Problematic	A topic for inquiry (Campbell, 1998, p. 62).
Problematic of the everyday world	The concept of problematic directs attention to a possible set of questions that may not have been posed or a set of puzzles that do not yet exist in the form of puzzles but are "latent" in the actualities of the experienced world (Smith, 1987, p. 91).
Recursive	Recursive events are patterned, showing that they are organized to happen repeatedly, in much the same way across time and location (Frampton et al., 2006).
Ruling; Ruling relations; Relations of ruling	Practices of ruling are the coordinated actions of large numbers of people spread across diverse sites. Texts play a prominent role in this coordination (McCoy, 1998, p. 395).
Shaped up	As people bring into being whatever happens, what they do and what they can understand and can tell about are shaped through organized processes (Campbell & Gregor, 2004, p. 78). See also "Worked up."
Social; The social; Ontology of the social; Core ontology	The social is located in how people's activities or practices are coordinated. The person is there, the person is in his or her body, the person is doing things, and what the person is doing is coordinated by the doings of others (Smith, 2005, p. 59).
Social organization	When distinct forms of coordinating people's doings emerge again and again (Smith, 2005, p. 227).
Social relations	This term is not to be confused with relationships between people. Rather, social relations are people's doings that are connected in a sequence of action to other people in different places and times (Smith, 2005, p. 228). G. W. Smith (1990) noted social relations are never completed by one person.

Term	Definition
Sociology	The development of systematic knowledge about social life, the way it is organized, how it changes, its creation in social action and its disruption and renewal in social conflict (Calhoun, Gerteis, Moody, Pfaff, & Virk, 2007). A systematically developed consciousness of society and social relations (Smith, 1987).
Standpoint	Standpoint as the design of a subject position in IE creates a point of entry into discovering the social that does not subordinate the knowing subject to objectified forms of knowledge of society or political economy (Smith, 2005, p. 10).
Text	Texts are material, in a form that enables replication. They may include forms such as print, film, electronic, and so on. Materiality is emphasized because then people can see how a text can be present in our everyday world and at the same time connect people into broader social relations. Texts enter into and coordinate people's doings (Smith, 2005, p. 228).
Text-mediated relations; Text-mediated social organization	The ways in which social action is organized, mediated, and controlled through textual forms of documentation and communication in contemporary society (Frampton et al., 2006, p. 38).
Text-reader conversation	This recognizes reading a text as an actual interchange between a reader's activating of the text and his or her responses to it. This helps people to see that texts are embedded in social relations and are active rather than inert (Smith, 2005, p. 228).
Translocal	The broader social organization that penetrates into the local setting, passing through and connecting multiple local sites (L. McCoy, personal communication, October 17, 2014).
Work	The generous conception of work means that work is what people mean to do that requires some effort and acquired competence (Smith, 1987, p. 165).

Term	Definition
Work Knowledge	There are two aspects to work knowledge: (a) a person's experience of and in his or her own work, what they do, how they do it, and what they think and feel about it; (b) the implicit or explicit coordination of that work with the work of others (Smith, 2005, p. 151).
Worked up	As people bring into being whatever happens, what they do, and what they can understand and can tell about are shaped through organized processes (Campbell & Gregor, 2004, p. 78). See also "Shaped up."

Chapter 1: Nurses' Medication Work: The Social Organization of Rule-Breaking

Health care in this country is in an era of emphasis on patient safety and quality improvement (Canadian Patient Safety Institute & Accreditation Canada, 2014; Health Council of Canada, 2013; Wade et al., 2002). A sense of urgency characterizes the drive to achieve a transformation in patient safety, which can be read in media and academic accounts calling for significant investments in health research, technologies, and resources to prevent medical errors. The issue of medication safety is at the forefront of public and professional concern, as medication errors in hospital are reported to be common and can result in significant harm to patients (Gorini & Pravettoni, 2013; Radley et al., 2012). Health care leaders have placed a major focus on creating medication administration processes that are as consistent and fail-safe as possible, arising in part from the international reports of widespread and preventable medical error (Baker et al., 2004; Kohn, Corrigan, & Donaldson, 2000; O'Hagan, MacKinnon, Persaud, & Etchegary, 2009) as well as from the improvements that various initiatives promise (Clancy, 2007; Institute for Safe Medication Practices [ISMP], 2013a; Leape, Berwick, & Bates, 2002; Pape, 2013). Implicit within the widely accepted safety and quality initiatives is the idea that medication work[1] and the delivery of health care can be perfected, largely through sophisticated technologies and ever more stringent work processes.

Nurses are the health professionals who are predominately involved in the delivery of medications to patients in hospital. Due to this, numerous quality

[1] I use the term "medication work" to represent the wide range of practices that nurses are engaged in as they work with medications.

improvement and safety initiatives emerging in the academic literature are aimed at nurses and attempt to "fix" the problem of medication error by changing nursing practice. In particular, strategies to improve medication safety centre on standardizing and controlling the processes that characterize medication work (Gorini & Pravettoni, 2013; Meum, 2013; Pedersen, Ellingsen, & Monteiro, 2011). In this thesis, I demonstrate that it is both difficult and unwise to standardize and strictly control medication work. I also illustrate how the introduction of increasingly stringent rules and standardized procedures that are intended to make systems fail-safe and consistent have a profound impact on nursing work, but do not necessarily result in enhanced safety. Instead, they may force time-intensive, ineffectual practices and seriously constrain the judgment and specialized knowledge that nurses have about how to accomplish medication work safely and efficiently. I use empirical data to show that nurses' work processes are organized such that they regularly break the rules as the only sensible way of doing medication work. At the same time, rule breaking puts nurses at risk for jeopardizing overarching professional standards and institutional rules meant to promote safety. I argue that discretionary work, arising in nurses' situated knowledge, is an essential component of safe medication practice.

Research Interest

The topic arose out of my own experience and knowledge as a nurse working with medications and as a nurse educator observing beginning nurses as they learn to provide nursing care safely and competently. Long before I embarked on this research project, the interest and desire to pursue this study began to emerge in the difficulties and contradictions that I encountered in my work. As a student in a baccalaureate nursing

program, I found the thought of administering medications evoked nervousness and apprehension, as I feared the possibility of making a medication error that could harm a patient. I recall many sleepless nights before entering practicum settings, worrying about my ability to administer medications without error. Early in my career as a registered nurse, I experienced a defining moment when I narrowly avoided making a serious mistake with a medication. Although that foundational experience reinforced my fears somewhat, it also piqued my interest and curiosity, and laid the groundwork for pursuing this project many years later.

Nurses have different knowledge about their own work than those who know it in the abstract, as nurses' knowledge is grounded in their own material practices and experiences. As George W. Smith (1990) explained, "problems of knowing" (p. 632) arise when the embodied, experiential knower bumps up against authorized versions of reality. This became very evident to me over time, as I realized that my work did not always line up with what I had learned in formal educational settings, or with what was said about it by others. For instance, medication work is commonly portrayed as a smooth and effortless series of steps such as obtaining the medication from the supply source, preparing the medication, and giving it to the patient. Furthermore, stringent rules and institutional processes compel certain actions (and exclude others) that are widely believed to make medication work safer if they are consistently and systematically followed. However, in my practice, I quickly discovered that work processes such as obtaining the medication from the supply source could be as straightforward as opening the medication supply cart and finding the medication right where it should be, or a lengthy, complex, and time-consuming process depending on the time of day, the

resources available within the setting, the processes in place to facilitate medication availability, and so on. In any case, obtaining the medication from the supply source relied on my own acquired knowledge and skills, required me to break the rules in some cases, and was significantly different from organizational and theoretical knowledge about where medications could be found. The differences in knowing that I experienced were intriguing, puzzling and sometimes troubling, but I learned to accommodate my own work processes to "fit" within the official, accepted versions of medication work. As a result of these accumulated experiences and reflection, differences in knowing about medication work became a focal point for this research project.

Troubles in Nurses' Medication Work: The Problematic for the Inquiry

Institutional ethnography (IE) is a mode of inquiry that provides a way to unravel the complexities and tensions that are inherent in ordinary everyday life. Starting with people living and working in the everyday world, IE focuses attention on how their everyday doings are linked empirically to the broader world. Developed by Canadian sociologist Dorothy E. Smith (1987, 1990, 1999, 2005, 2006), IE requires a paradigm shift; a way of thinking about the world as social that allows exploration of social relations and the way that everyday life is organized. As with any specialized field of study, IE requires learning a new language in many ways, as even familiar or common words may be understood differently in this approach. With this in mind, a glossary including concepts and ideas central to this method is included in the prefatory pages of this thesis.

In an IE investigation, the research problematic is a technical term that can be described as a puzzle or topic of inquiry to be explored, arising out of everyday

experience. Interrogating the understandings that people have of ordinary, taken-for-granted practices renders the everyday world "problematic" (Smith, 1987, p. 91). It is the "moment of recognition that something chafes" (Campbell & Gregor, 2004, p. 48) and anchors the research by suggesting the time, setting, and people to first interview and observe. Although a number of experiences chafed over the years as I worked with medications, one in particular provided the starting point for this inquiry. This is portrayed in the experience described in the following paragraph, drawn from my own personal practice as a nurse educator.

A nurse asked Kim[2] (a pseudonym), a fourth-year student on her first day of orientation to an unfamiliar medical unit, to distribute medications to all of the patients on a team (about 12 patients, each with 5–15 different medications). After initial hesitation, Kim began the work that she was asked to complete, searching for information about the medications that she was unfamiliar with. As a component of their basic education, all nurses are taught that it is essential to possess a comprehensive knowledge base about each medication (and the patient who is taking it) in order to administer them safely and competently. This message is clearly affirmed in professional discourse, standards of practice governing nursing work, and hospital policy and procedures. As Kim attempted to conform to what she knew was expected of a nurse engaged in medication work, she was directed to simply give the medications, and gather information about them later. The nurse who advised this explained that there was no time in the "real world" to complete the work in the way Kim was attempting to do it.

[2] Pseudonyms are used for all research informants in order to preserve anonymity. All informants are referred to by their pseudonym and by broad, non-identifiable titles such as "Registered Nurse".

Kim later described feeling a great deal of pressure to conform and contribute to "getting the work done quickly" in the context of the everyday demands of a busy hospital unit. She felt compelled to do what was asked of her, even as she struggled to understand why her knowledge of the way to work with medications was so different from what she was actually experiencing.

In Kim's work, a disjuncture or "line of fault" (Smith, 1987, p. 49) appears. Kim knew that what she was doing was incompatible with the rules and standards of safe medication administration, but did what she was asked regardless of her own good knowledge. Kim's experience was troubling for both of us, but also provided a valuable entry point into this inquiry, as moments of tension and discomfort offer an opportunity to locate the actual and bring problems into focus so they can be understood and explicated. Kim's troubling experience raised a number of questions for me: What do nurses actually do as they work with medications? What does it mean to be safe and competent when working with medications? How do nurses reconcile vastly different versions of reality? How do nurses give medications correctly and safely in contemporary hospital settings? What challenges do nurses encounter? What are the outside forces that are controlling and dominating the way that nurses work with medications?

While this initial puzzle served to capture my interest, my focus changed as I moved through the inquiry. Arising from my reflections on experiences like Kim's, my positioning inside the inquiry, and through a lengthy process of exploration and discovery, the problematic began to coalesce. I began my IE inquiry, observing nurses as they worked with medications and talking to them about what they knew about their work. I started to understand that some relation existed between the ideal world of safety

initiatives that purport to produce safe, error-proof care and the hospital settings where textually specified practices are taken up by nurses in situated practice. I watched time and again as nurses responded to the moment-by-moment contingencies that arose, and saw how their actions worked to keep patients safe, even though they broke established safety rules at times. I also started to understand that nurses' knowledgeable safety actions appear to be cancelled out by the ideological practices and initiatives arising from the patient safety movement. This is the crux of the problematic that my argument addresses.

Outline of the Thesis

This first chapter introduced the topic of inquiry, described my interest in this research, and explained nurses' troubles with medication work. I conclude the chapter with this section, which provides an overview of the thesis.

Having introduced the research topic in this chapter, I examine selected literature in order to understand what is written about medication work, how the various topics are taken up, what topics are given prominence, and what topics are excluded in Chapter 2, "The Research Context: Discourse and Ideology." The literature provides important context and information about the critical debates that are occurring, but is not used to formulate conceptual understandings in this research. In an IE study, the researcher stays completely grounded in the material world. Rather than seeking to understand what is happening theoretically or conceptually, the researcher concentrates on the concrete world of experiences, lived actualities, and the activities that informants are actually engaged in (Smith, 1999, 2005). The researcher must be careful not to be distracted or captured by apparently rational explanations or pre-established formulations. Instead, the

way that a topic is taken up in the literature is contrasted to informant accounts. To this end, I read a broad selection of materials, including research reports, opinion pieces, media stories, news headlines, government reports, health publications, memos, policies, and so on. At all times, my analytic attention was focused on the discourses and ideology embedded within the various writings, allowing me to distinguish the knowledge practices arising within informants' everyday experiences from other locations.

In Chapter 3, "Developing the Study: Through the Lens of Institutional Ethnography," I lay out the methodology for the inquiry and describe fundamental characteristics such as the role of texts in mediating social relations, the way that work is understood in an IE study, and how institutional processes shape the everyday world in which medication work takes place. I also describe how I structured the inquiry to obtain research informants who could reliably inform this project, which enabled me to explore institutional ruling relations—the practices that dominate and activate things to happen in a certain way.

Chapter 4, "The Everyday World of Medication Work," is primarily ethnographic. I begin by introducing the process of medication work and describe how it actually happens in a typical, everyday hospital unit. I describe how medications are delivered to patients and explain some of the critical resources that are used in the process, such as the medication supply system. The purpose is to orient the reader to the milieu in which medication work takes place and to provide an organizing frame that will contextualize the subsequent analytic threads. I also bring in the key texts that are used to guide and organize medication work and illustrate how texts are connected to broader institutional frameworks and mediate local work practices. I lay the groundwork for an

important analytical thread in this chapter, beginning the exploration of standardization and the impact that stringent rules have on critical discretionary work.

In Chapter 5, "Medication Work as Discretionary Practice," I contrast the way that medication work is represented in the nursing and safety literature as a smooth, discrete, and linear process with the way it actually unfolds in practice. Embodied medication work is a multifaceted, messy, ambiguous, contingent process that is integrated seamlessly into other nursing work. I show how the ideological representation of medication work obscures much of what is actually happening and presents a unidimensional picture to others. As medication work actually unfolds in the everyday world, problems naturally arise. Nurses smooth over troubles using discretion, intelligence, and expert knowledge, but often in unsanctioned ways. Here I describe the social organization of difficulties that are created when attempts to strictly control and standardize medication work are made.

In Chapter 6, "Standardization and the Discursive Construction of Rules," I examine how ideological accounts of safety and quality dominate medication work, and how knowledge practices are discursively constructed and reproduced in nursing work. Discourses of safety and risk play a major role in the increasing standardization efforts currently seen in health care settings. Standard processes, constructed from outside the work, do not always achieve the outcomes they intend to realize. Nurses are committed to safety, but are not committed to following rules that do not accomplish safety in their everyday work with patients. In this chapter I show that nurses' work processes are organized so that breaking the rules is the only way that nurses are able to activate critical discretion; in doing so, nurses run the risk of having their professional competence

judged harshly. Tightening standardization efforts and concerns about disciplinary sanctions work to constrain discretion.

In Chapter 7, "'The Right Patient': An Analysis of the Social Organization of Knowledge," I pick apart one of the cardinal rules of medication administration, the right patient rule. I examine the institutionally mandated process that is widely accepted as the best way to identify patients and show how the evidence underpinning this purported best practice falls apart when it is scrutinized. I also explicate the role that accreditation standards play in ensuring that rules for standard identification processes become and remain dominant. My data show that nurses do not identify patients the way that policy and standardized practices mandate. Moreover, nurses repair records so that textual accounts show that patients are identified according to standards. This creates an ideological circle, further reinforcing ideological practices of patient identification.

In Chapter 8, "How Nurses Know "The Right Patient": Continuing the Analysis of the Social Organization of Knowledge," I continue the analysis of patient identification. I use empirical data to illustrate how the step-by-step process intended to identify patients in a consistent and standard way in order to keep them safe unravels in practice. The institutional process for identifying patients is logical in a theoretical sense, but in actual practice, the rationality breaks down. Rather than using the institutionally mandated process, nurses identify patients in ways that are not formally recognized, sanctioned, or approved. I show how patient identification work actually happens, and the troubles that arise when nurses attempt to follow the formal process. There is informal acknowledgment that it is nonsensical to adhere to the standard patient identification process in all circumstances, but nursing competence is measured against these formal

standards. This creates tension as the ideological world of standard practices and the everyday world of nurses' work collide.

Chapter 9, "Conclusions, Recommendations, and Implications for Research," concludes this report. In this final chapter, I review the major findings emerging from this inquiry and highlight the most significant finding—the essential discretionary work that nurses are routinely engaged in to keep patients safe is seriously constrained by the stringent rules that dominate medication work and is in danger of being organized out of nursing practice. I link this finding to health care practice, discussing implications and recommendations for practitioners, organizations, and public policy.

Chapter 2: The Research Context: Discourse and Ideology

In this chapter, I draw on nursing and health care literature to provide context, focus and direction for my research. My thinking was influenced by what I learned through this review, however, I was careful not to be distracted or sidetracked by the conceptualizations and rational explanations currently found within the literature. Instead, I was continually mindful of the need to consider the literature as data and context for my own research project. The body of literature addressing nursing and medications encompasses a broad range of topics including the pharmacological knowledge base necessary to work with medications, procedural rules and rituals, and essential cognitive skills. Although a wide array of topics is addressed, this body of literature is weighted heavily toward the exploration of medication error and is predominantly informed by scientific, technological, managerial, legalistic, and safety discourses. These discourses are realized in nursing practice and ensure a normative way of seeing, speaking, doing and thinking about medication work. In this chapter, I critically examine a selection of writing about nurses and medications, and highlight particular writings that informed my research in a significant way or contributed to the larger project of investigating the institutional shaping of nurses' work. I conclude the chapter with a discussion of the contribution that my research will make to the body of knowledge addressing nursing work with medications.

Nurses' Work and Women's Work

The historical, dominant mode of defining work has restricted it to the waged sector, which more closely reflects men's experience than women's (Tancred, 1995). Although understandings of work are broadening, "historically, women's work has been

especially unacknowledged and undervalued" (DeVault, 2008, p. 6). Nursing is commonly linked with women's work, characterized by caring and natural feminine traits. Selberg (2013) maintained, "Nurses' collective work identities are tied up with the project of normative femininity, which is associated with notions of respectability and responsibility" (p. 12). Whether paid or not, nursing work is often dismissed, essentially disqualifying it as real or as knowledgeable practice (Liaschenko, 1998; Vlasses, 1997). "The gendered nature of caring work is seen by many as a key to understanding the relative status of nursing" (Allen & Pilnick, 2005, p. 685) and has triggered efforts to legitimize nursing as a profession and scientific endeavour. When viewed through the dominant framework of rationality and science, caring work is largely invisible.

Since some aspects of nursing work are not easily observable, they may become misunderstood, taken for granted, or not recognized as work by nurses and others. "While some nursing knowledge (and by extension, nursing work) is highly visible within the culture, retaining legitimacy and commanding a certain authority, large portions are invisible and silenced" (Liaschenko, 1998, p. 11). There is a large body of literature focused on components of nursing that are not readily visible (Campbell, 2000; McWilliam & Wong, 1994; Vlasses, 1997; Wolf, 1988). For example, in an ethnographic exploration of nursing assistant's work in nursing homes, Diamond (1986) highlighted the invisible and unmentioned caring, emotion, and thinking work, which he referred to as essential to the job. He pointed out that the physical tasks are not only more visible to observers, but are also legitimized through formal accounts of work such as patient charts (Diamond, 1986). The important work of caring and thinking are "relegated to an oral tradition" (Diamond, 1986, p. 1292), in which is it erased from view. In another inquiry,

Jacques (1993) described similar findings and suggested that the problem for nursing is that when caring work is competently performed "it drops out of sight leaving no evidence that there was work to be performed in the first place" (p. 7). In light of this difficulty, much of what is understood about nursing is limited to "traces" that have been made available through the process of inquiry. The body of work highlighting invisible or taken-for-granted aspects of nursing work helped raise my awareness of and directed my attention toward knowledge practices that could easily go unnoticed.

Defining Nursing and Nursing Work

Despite several decades of scientific effort to describe and learn about what nurses do, a comprehensive analysis of nursing and nursing work remains elusive. Nursing is fluid and amorphous, rendering it difficult to articulate and represent. This difficulty is enhanced in contemporary health care systems of reform and restructuring as nursing work is characterized by relentless change. Language adds to the complexity, as there are no clear demarcations between terms such as nursing, nursing work, nursing practice, nursing roles, and so forth. Latimer (2000) summed up the quest for a definitive articulation of nursing:

> There is not a "thing" called nursing. Nursing is precisely local and specific, not standardized, and nursing can be many things: hesitant, incomplete, decisive, objective, subjective, concerned with dirt, with science and technology, with the heroic and the mundane, with bodies and with emotion and with thinking. (p. 3)

Past conceptualizations of nursing as a calling and a vocation have given way to more recent understandings of nursing as a profession and a practice. Based on a decade of ethnographic research, Davina Allen (2004) maintained that the core nursing contribution

is that of "health care mediator" (p. 271), rather than caring within individualized patient relationships. As mediator, nurses are engaged in "bundles of activity" (Allen, 2004, p. 278) as they broker, interpret, translate, and reconcile the needs of the patient in response to the available resources and requirements of the health care organization. Other researchers suggested that a useful representation is "nursing as work" (Liaschenko & Peter, 2004, p. 492). In their view, work provides a way of revealing and critiquing nursing, capturing the material human activity and intellectual labour of nurses. This view was useful for my research, as work and material practices are central concepts within an IE project.

Nurses' Medication Work

Nursing has a long history of association with medications, with the first recorded instance linking the two occurring in Hindu society in 2000–250 BC (Baker, 1995). The nature of the work, however, has changed considerably since it originated. In the 1830s, nursing education in relation to medications was peripheral, limited to techniques for making the medication palatable (D'Antonio, 2007). Along with education, practices of medication administration have also changed from arrangements using handwritten cards and the selection of drugs from a central supply source to sophisticated systems of computerized orders and pre-packaged medications. As systems have evolved, and medications have become entrenched as a dominant form of health care treatment, nursing work with pharmaceuticals has become much more complex and multifaceted. Health practitioners widely accept that work with medications is a vitally important element of nursing care and is foundational for entry into practice (College and Association of Registered Nurses of Alberta [CARNA], 2013).

Situating Medication Work in the Literature

Although I use the phrase *medication work* to refer to the broad range of practices that nurses are engaged in, it only appears in one publication of which I was coauthor (Folkmann & Rankin, 2010). Typically, nursing work with medications is referred to in textbooks, policies, regulatory accounts, and the literature using the somewhat restrictive phrase *medication administration*. In its narrowest sense, medication administration refers to the technical, mechanical task of giving a medication to a patient, a minor part of what nurses do when working with medications. In many versions, the administration of drugs is represented as a sequential process consisting of a lengthy series of steps that nurses must follow, a skill composed of many other skills such as cognition and assessment, or as an intricate task occurring in stages such as transcription and administration (Grigg, Garrett, & Craig, 2011; Harding & Petrick, 2008; Perry & Potter, 2009; Thomson et al., 2009). These descriptions imply that medication work will progress in a step-wise, straightforward, linear manner, a point of critique that I expand on in Chapter 5.

There is growing recognition that the phrase *medication administration* does not capture the rich diversity of what nurses actually do when working with medications. For instance, Crouch, Crouch, and Chapelhow (2013) defined medication administration as a skill that involves a number of other skills, including cognition, decision making, assessment, interpretation of information, and so forth. They suggested that "medicines management" (Crouch et al., 2013, p. 3) is a more appropriate term to encompass the increasing roles and responsibilities of nursing medication work. Other authors called attention to essential cognitive components of medication management such as

anticipatory problem solving, the ability to make complex decisions, and the ability to exercise sound clinical judgement (Eisenhauer, Hurley, & Dolan, 2007; Manias, Aiken, & Dunning, 2004). These broader conceptualizations were useful for my own understanding of the medication work that nurses are engaged in.

Discursive framing of medication work. The vast majority of the literature addressing nurses and medications sought to explain, predict, and control factors related to medication work, consistent with the post-positivist paradigm. In contrast, Cheek and Gibson (1996) and Gibson (2001) contributed rare critical analyses of the literature framing medication work. Cheek and Gibson conducted a comprehensive review of the literature regarding nurses and medications within a postmodern analytical framework. Their analysis yielded what they refer to as the "other" side of the literature, or the "implicit and hidden assumptions about nursing, power and knowledge that shape the disciplinary regimens associated with the nurses' role in the administration of medications" (p. 83). In a discursive reading of the literature, Gibson argued that nursing practice with medications is largely shaped by discourses of biomedical science, law and management. Both works were extremely influential in my thinking about the topic, and raised my awareness of discursive practices. I build on Gibson's work here to consider the competing and complementary discursive frameworks through which medication work is understood. In this project, I used Smith's (2005) understanding of discourse, which she described as

> the translocal relations coordinating the practices of definite individuals talking, writing, reading, watching, and so forth, in particular local places at particular times. People *participate* in discourse, and their participation reproduces it. Discourse constrains what they can say or write, and what they say or write reproduces and modifies discourse. (p. 224)

In an IE study, examining "how people participate in discourse, how they talk about what they do, what texts they circulate, and what is reproduced in people's labour, is of utmost analytical interest" (Bisaillon, 2012, p. 610). Nurses are both an inherent part of the discourse and are intrinsically caught up in the discursive frames that shape the dominant, taken-for-granted understandings of appropriate medication work.

The discursive framework of biomedical science. Medications are equated with the ability to heal and cure and are linked directly to traditional empirical or clinical science. Pharmaceutical knowledge is built within rigorous frameworks of controlled clinical trials that rely on specific scientific methods. "We are inescapably constructed in the name of science because our predecessors have established, indeed enshrined science, as the vehicle in which our thoughts, desires, and acts as nurses must be carried" (Walker, 1994, p. 49). These approaches to knowledge development determine the understandings that can be taken as "the truth," and form the foundation upon which nursing medication practice has been built.

Medications hold a privileged place within health care, dominating the terrain of medical interventions for treatment and retaining unquestioned authority. They are almost universally relied upon as the chief treatment for most conditions; this is evident in the more than 15,000 drug products licensed for use in Canada (Health Canada, 2014), the 400 million prescriptions written (Health Council of Canada, 2007), and the funds (nearly one fifth of the total health expenditures) that are allocated to pharmaceuticals each year (Canadian Institute for Health Information [CIHI], 2013). Although the percentage of pharmaceutical expenditures dropped in 2013, Canadians still spent a record $30 billion

on prescription drugs in that year alone (CIHI, 2013). Medications clearly play a dominant role in health care treatment across the country today.

Not only are pharmacological agents seen as potent interventions to treat illness, they are increasingly viewed as treatments for managing "normal" body functions such as sleeping, digestion, and so on (Hyde et al., 2006, p. 740). This is reflective of a more generalized trend in which "medical discourses operate to maintain, reproduce and even construct societal norms by medicalizing everyday social activities" (Hyde et al., 2006, p. 736). Given the pervasiveness and dominance of medications in health care, it is not difficult to appreciate the significance that nurses assign to their role with them in practice. For example, in Wolf's (1988) ethnographic study of nurses' work, she described how nurses regard medication administration as a "high priority nursing function" and as "a serious trust, shared with doctors" (p. 140).

The pharmacological knowledge that is considered to be integral to safely administer medications forms a large part of the biomedical discourse shaping medication practice. Contemporary nursing education programs include instruction in pharmacology and medication administration procedures in order to prepare nurses to meet the knowledge standards set by professional regulatory bodies. In Alberta, registered nurses require knowledge of the actions, interactions, usual dose, route, effects and side effects of medications (CARNA, 2014a). Nurses are then expected to draw on this knowledge to monitor medication effect to inform their clinical decision making. With the myriad of drugs prescribed, changing technological practices, and different methods of preparing and administering medications, this can be a daunting task.

Researchers focused on evaluating the pharmacological knowledge of nurses have generally concluded that nurses have inadequate knowledge and need additional educational preparation (Akram & Mullen, 2011; Honey & Lim, 2008; Ndosi & Newell, 2008). In one example drawn from this body of work, 98 nurses completed a 10-question unassisted recall exam based on medications they commonly administered (Ndosi & Newell, 2008). The exam was consistent with organizational expectations for safe practice and professional knowledge standards. Approximately three quarters of nurses scored seven out of 10 or lower, leading to the researcher's conclusion that nursing pharmacological knowledge is inadequate. The implicit assumption is that performance on a 10-question unassisted recall exam realistically represents knowledge about medications and that achieving a low mark translates to safety risks in actual practice. Although these assumptions may well be valid, the link between performance on a pharmacology exam and medication safety must be interrogated more closely.

The discursive framework of technology. Health care leaders have demonstrated a growing enthusiasm for technological solutions, which promise to significantly impact the safe use of medications. "Policy claims around innovation and technological adaptation usually convey an underlying tendency to view technology as a neutral instrument that creates efficiencies and is central to the improvement of health" (Sousa, 2013, p. 133). Recent developments such as computerized physician order entry (CPOE), automated medication dispensing, and bar coded medication administration are all designed to improve medication safety, and are promoted as having the potential to ease workload concerns and free up time. With its seductive promise to improve safety and efficiency, technology has been embraced almost without reservation in health care

(Hughes & Blegen, 2008; Saginur, Graham, Forster, Boucher, & Wells, 2008). Currently, within Canada, there is a call for national action to improve the uptake of automated medication verification systems (ISMP, 2013a).

A number of studies have demonstrated that technology has the potential to reduce medication errors (Bobb et al., 2004; Cescon & Etchells, 2008; Foote & Coleman, 2008; Menachemi, Saunders, Chukmaitov, Matthews, & Brooks, 2007). For example, Bobb et al. (2004) evaluated the effectiveness of CPOE, a computerized application with structured order entry and integrated clinical decision support systems. The researchers conducted their study in a 700-bed medical centre, collecting copies of all physician orders that contained a prescribing error that required pharmacy intervention to correct. Each potential error was evaluated for type, severity, and cause and was rated for potential CPOE benefit. The researchers found that while prescribing errors were common, 65% were likely to have been prevented with a CPOE application (Bobb et al., 2004).

Other studies have shown that error rates are not improved by the introduction of technology, or that error rates improve in one area, but new sources of error are created instead (Bedouch et al., 2009; Carayon et al., 2007; van Onzenoort et al., 2008). In one example, Bedouch et al. (2009) conducted a prospective study over an 18-month period of time to describe and estimate the incidence of preventable medication errors in medical wards equipped with a CPOE system. The researchers found that medication errors are common even with an established CPOE system, possibly because of the detailed data collection method used in the research and close pharmacist monitoring allowing for enhanced detection of errors (Bedouch et al., 2009). Moreover, the authors

established that while CPOE systems decreased errors created by incomplete or illegible medication orders, they also generated a large number of errors such as mistiming of medications, duplicate orders, and selection of the wrong drug. Additionally, prescriber attention to the numerous alerts and warnings produced by the CPOE system waned over time and repeated exposure, which could lead to inappropriate alarm overrides (Bedouch et al., 2009). The evidence supporting technological developments has been conflicting at best. Despite widespread implementation of technologies, few improvements in patient outcomes have been reliably demonstrated (Ranji, Rennke, & Wachter, 2014; Wulff, Cummings, Marck, & Yurtseven, 2011).

The introduction of technologies can have an impact on well-established work processes, particularly when new tools are launched without consulting the people who will actually be using them and when there is insufficient time for health care practitioners to become familiar with the proper use (Canadian Nurses Association & University of Toronto Faculty of Nursing, 2004). Practices develop when nurses "work around" problems that arise as they attempt to adjust to new processes that are imposed with the launch of technological developments (Vogelsmeier, Halbesleben, & Scott-Cawiezell, 2008, p. 115). Rack et al. (2012) defined workarounds as "staff actions that do not follow intended workflow or intentions of the system design" (p. 233). For example, in a study evaluating the outcomes following the introduction of bar coded medication administration, researchers discovered a number of workarounds such as the administration of medications without scanning the code or handing off of medications to another person to give (Carayon et al., 2007). Rather than simply breaking the rules, as it may appear with a superficial analysis, nurses developed these strategies in order to work

with the technology (e.g., times when there were only two functional scanners for four nurses, or when the scanner screen timed out too quickly). Workarounds are a common response when medication administration technologies are launched. In an evaluation of the research evidence examining the relationship between technology and preventable medication errors, Wulff et al. (2011) established that a majority of the studies included in their review reported the development of workarounds.

When evaluating technologies, it is imperative to consider the impact on patients and patient outcomes as well as on nursing work. Sandelowski (2000) referred to the "paradox embedded in technologies" (p. 85), using the introduction of the telephone to illustrate her point. The telephone was originally conceived as a means of rapid, targeted communication intended to bring people into closer contact with one another. Although the telephone may have accomplished this, this technology also enabled the development of "distance nursing . . . whereby nurses and their patients no longer occupy the same physical space" (Sandelowski, 2000, p. 85). Toman (2007) also cautioned that technology is imperfect, and appealed to decision makers to consider how caregiving and nursing work can be complicated with the introduction of technology:

> Nurses need to question seriously what is gained and lost as they take on and let go of technologies. They need to consider what kinds of knowledge will be needed and how best to develop it. Finally, they need to reflect how changes might complicate caregiving and nurses' work. (p. 252)

In growing recognition that the value and usefulness of any technology is dependent on more than its apparent benefit, Barber, Cornford, and Klecun (2007) recommend a socio-technical evaluation approach. This framework considers not only the technical performance of technology, but also the "changes to the delivery of care and work

practices, as well as the longer-term prospects of a system and its sustainability within organizational contexts" (Barber et al., 2007, p. 272).

The discursive framework of management. Efficiency and cost effectiveness are topics of compelling interest within the management framework. Influences such as a serious nursing shortage, budgetary constraints, and health care reform measures have resulted in widespread acceptance of new public management principles within health care management, producing private sector governance models within public sector health care organizations (Evetts, 2009; Selberg, 2013). As a result, administrators place particular emphasis on the quantification of nursing work, arising out of economic restrictions and the desire for increased managerial control over all health care resources, including nursing time.

Medication work is one aspect of nursing practice that has been quantified through time-motion studies, which reveal the frequency and time intensive nature of the activity. Various data-collection methods have been used to gather information about use of time, including direct observation (Jinks & Hope, 2000; Lundgren & Segesten, 2001), personal report (Burke et al., 2001; Furaker, 2009), and work sampling instruments (Hendrickson, Doddato, & Kovner, 1990; Westbrook, Duffield, Li, & Creswick, 2011). Generally, findings from these studies capture the amount of time spent on various predetermined activities such as direct patient care, medication administration, shift reports, personal activities, and so on. Numerous studies demonstrate that nurses spend a significant proportion of their time working with medications (between 13–40%), more than the amount of time spent on physical care, communication, or documentation (Fowler, Sohler, & Zarillo, 2009; Keohane et al., 2008; Thomson et al., 2009; Westbrook,

Ling, Georiou, Paoloni, & Cullen, 2013; White, Jackson, Besner, & Norris, 2013). For example, in a Canadian study of nurses in long-term care settings, researchers measured the time spent on different aspects of medication administration and found that preparing and providing medications were the two most time consuming phases (Thomson et al., 2009). These researchers also found that interruptions occurred in the vast majority of medication administration events (79% of the time) and accounted for 11.5% of the total time required for medication administration (Thomson et al., 2009). Thomson et al. (2009) also suggested dedicated medication administration (one nurse giving all medications) could reduce interruptions and thus the time spent on medication administration activities.

Other studies have examined the work systems of nurses and establish that nurses require a significant amount of time to resolve procedural breakdowns, manage interruptions, and compensate for operational failures (Ebright, Patterson, Chalko, & Render, 2003; Tucker & Spear, 2006). For example, work may be disrupted as the nurse waits for medications to arrive from pharmacy, searches for the correct measuring cup, obtains the key to the narcotics supply, replaces a malfunctioning intravenous (IV) pump, and so on. Nurses "waste a lot of valuable time managing and working around systems that create, rather than support work" (Ebright et al., 2003, p. 54).

The information from time-motion studies can be used to examine work processes and identify improvements that can increase efficiency, a major aim of all inquiries of this type. For instance, if the negative impacts of operational failures and interruptions are understood, they can be eliminated rather than relying on the nurse to work around inefficient processes. Although the findings are valuable, they do not provide a complete

portrayal of nursing medication work. Time-motion studies rely on behaviours that can be easily observed and quantified, but fail to capture medication work in its totality. For example, there is a great deal of cognitive work that rests behind nurses' involvement with a patient's medication. This work is linked into what is happening both with the patient and in the setting, going beyond biophysiological understanding of the medication and its intended and unintended effects.

Other management technologies (such as patient classification systems and care pathways) that attempt to quantify nursing work have been introduced (Campbell, 1994; Mykhalovskiy, 2001; Rankin & Campbell, 2006). The earliest of these technologies, the patient classification system, is a way that nursing work has been objectified and rationed according to predetermined patient needs. For example, a patient classification system assigns points for important tasks such as giving medications, cleaning or moving the patient, but does not include other vital work such as the getting and giving of information or coordinating necessary services. Points are tallied, and scores are then used to determine the "amount" of nursing care that is required. In this way, the use of time can be closely monitored and controlled. As with other systems that attempt to quantify the richness and diversity of human experience, patient classification systems cannot capture emotional needs, unpredictable events, or other intangible aspects that rely on in-the-moment nursing judgment. Another major concern is that as technological and managerial practices enter into and change nurses' work, professional autonomy and discretionary decision-making diminish, essentially removing the nurse from the picture (Allen & Pilnick, 2005; Campbell, 1994). Rankin and Campbell's (2006) work provided an illustration of this point. In their narrative of an orthopedic patient who was scheduled

to be discharged in accordance with the total hip replacement care pathway, nursing care was disrupted by the efficiency, cost-containment discourse. The patient and family had serious concerns about their readiness and ability to manage at home. Although the nurse also recognized that the couple was not ready to go home, her choices were constrained by the organizational structures and processes (external to nursing work) that dominated her thinking and approach, and the patient was discharged home (Rankin & Campbell, 2006).

Research attention has also been focused on the complexity of nursing work and the roles and functions that are most appropriate to maximize the effectiveness of the nursing team (Besner et al., 2005; Ebright et al., 2003; White et al., 2009). In an important workforce utilization project, White et al. (2009) studied the work of registered nurses and health care aides to determine the impact of job redesign on selected outcomes such as patient satisfaction. The authors determined that a good deal of what nurses do (primarily tasks and activities to meet patient's physical needs, including medication administration) could be completed by other members of the health care team, while other responsibilities (such as patient assessment) do not receive enough attention (White et al., 2009).

Discourses of safety and risk. Safety has a long-established history as a priority concern for health care professionals, dating back to the founders of modern medical and nursing practice (Baker & Norton, 2003; Ballard, 2003). The Hippocratic Oath for physicians ("Oath of Hippocrates," 2002) and ethical codes for nurses (e.g., Canadian Council for Practical Nurse Regulators, 2013; CNA, 2008a) establish safety as a

fundamental mandate and implicitly acknowledge that there is an element of risk in health care practice.

Although safety has always been a significant concern for health care professionals, its prominence in public and political realms has a much more recent history. Igniting the alarm was the landmark study by the Institute of Medicine, which estimated that as many as 98,000 Americans die in hospital each year as a result of errors rather than illness (Kohn et al., 2000). In this country, it is calculated that between 9,000 and 24,000 Canadians die each year as a result of preventable medical errors (Baker et al., 2004). Concern skyrocketed as these and similar reports were disseminated in the mass media with intense focus on high-profile, catastrophic, but rare events (Brown et al., 2008; McDonald, Waring, & Harrison, 2006; Storch, 2005). In addition to the human costs associated with unsafe care, the economic fallout and expense of escalating litigation also generate alarm (Attree & Newbold, 2009; Holme, 2009). Although the concerns are certainly valid, empirical measurements that construct health care as inherently dangerous strengthen the position the discourse of risk currently holds. The threat of harm is a significant influence within health care today, and forms the basis of the exponential growth of the rules that characterize nursing work.

Discourses of safety and risk are compelling for health care professionals who strive to provide safe care and avert the unnecessary human cost and suffering that patients endure in the course of their engagement with the health care system. There is no question that people deserve and expect to have a health system that can be trusted to provide safe and effective care; this is a long-standing priority for health care providers in their everyday work with patients. More recently, stakeholders in every sector of the

system around the world, including international organizations, government leaders, policy makers, accreditation and professional associations, regulatory bodies, health care organizations, direct care providers, safety experts, journalists, and members of the public strive to make the health system safer. Position statements and action plans have proliferated, as safety initiatives are receiving unprecedented attention in policy, research, education, and practice arenas (Canadian Patient Safety Institute, 2004; ISMP, 2002; The Joint Commission & The Joint Commission International, 2007; Wade et al., 2002; World Alliance for Patient Safety, 2004).

Safety initiatives are primarily framed by aggregated data sets tracking errors and adverse events and are increasingly focused on systems influences. Within a systems framework, multiple, interrelated, complex, integrated factors are understood to foster the conditions that increase the likelihood of an error. Moreover, the factors at play are often embedded in processes and the larger system within which the person functions, rather than solely attributable to individuals (McClanahan, Goodwin, & Perlin, 2011). A growing body of literature suggests that quality and safety can be improved within health care organizations by establishing a safety culture (Halligan & Aleksandra, 2011; Sammer, Lykens, Singh, Mains, & Lackan, 2010; Weaver et al., 2013). Although there is a considerable variability in defining safety culture, the most commonly agreed upon dimensions are the commitment to safety by organizational leaders, teamwork, open and trusting communication, a commitment to organizational learning, and a non-punitive approach to error reporting and analysis (Halligan & Aleksandra, 2011). In a comprehensive review of the culture of safety literature focused on hospitals in the United States, Sammer et al. (2010) generated a conceptual framework and typology in

an effort to bring more clarity to the concept of safety culture. They concluded, "Safety culture is a complex phenomenon that is not clearly understood by hospital leaders, thus making it difficult to operationalize" (Sammer et al., 2010, p. 156).

Despite all the attention, patient safety, and particularly how to achieve it, is not well understood. A plethora of definitions exist, as researchers and others attempt to understand what safety is and how it can be assured. Generally, patient safety is conceptualized inversely, as the absence of injury related to unsafe acts. The way that safety is thought of is not inconsequential, as differences in conceptualization shape policy directions as well as the initiatives that are funded and supported in health care organizations, which influence what all stakeholders within the health care system think, say, and do. This is ultimately how discourse comes to dominate thinking, produce particular ways of doing things, and leads to certain discursive practices.

Due to the way it is framed, many research and quality improvement projects concentrate on measuring adverse events, harm, and medical error. There is an intuitive logic to the absence of harm approach, because injury that results to patients as a consequence of their engagement with the health care system is often highly visible and is obviously counter to safe practice. However, the approach is also problematic because of the well-known obstacles in detecting and reporting adverse events (Aspden, Corrigan, Wolcott, & Erickson, 2004; "Pump Up," 2009), the difficulty in recognizing more subtle forms of harm such as delays in pain management or complications as a result of too early discharge (Burroughs et al., 2007; Storch, 2005), the many gaps in knowledge and unknowns that persist in the science of safety (Pronovost, Miller, & Wachter, 2006; Richardson & Storr, 2010), and the lack of attentiveness to the ongoing, everyday safety

work of direct care providers. It is clear that other forms of knowledge are necessary to build on what is already known and to help fill the gaps in what is currently understood about safety. In Chapter 6, I continue the analysis of selected safety literature, concentrating more specifically on medications and how the safety discourse influences the construction of rules and procedures for medication work.

Legal discourse. In contemporary health care settings, a powerful legal discourse permeates health care policy and practice. Nurses' regulatory organizations and employers establish the legal responsibilities and constraints that nurses are expected to work within (CARNA, 2011; Canadian Nurses Protective Society, 2007). This discourse upholds nurses' obligation to prevent mistakes and results in a heavy emphasis on procedures and behaviours that are thought to make the practice of medication administration error free (Wolf, 1988). As legal discourse continues to infiltrate nursing practice, health care leaders generate a concurrent proliferation of rules in order to manage risk, including the five rights of medication administration (right person, right drug, right amount, right time, right form), the three-times check (checking for all of the five rights when removing the medication from stock, when preparing it, and prior to administering it), and other standardized procedures (O'Byrne, 2008; Vaughan, 2005).

These rules are intended to ultimately protect patients, but do not remain pure, as they also function within a professional and organizational risk management framework in order to protect people and the systems within which they practice (Heimer, Coleman Petty, & Culyba, 2005). Using a Foucauldian discourse analysis, Cheek and Gibson (1996) suggested that the rules and procedures surrounding medication administration are a manifestation of power relations (technologies of power) and serve to control nursing

practice by demanding strict adherence to particular practices. Many of these practices derive from the legal discourse and are sustained through fear of litigation and personal or professional liability for the nurse. These technologies of power "act to sustain, reproduce and maintain the status quo as they become technical instruments by which nursing activities are dictated, investigated or appraised and thus controlled, regulated and monitored" (Cheek & Gibson, 1996, p. 85). Normalized practices such as the five rights (CARNA, 2014a), the three-times check (Bunker Rosdahl & Kowalski, 2012), and other standardized legal practices that are designed to eliminate errors serve to establish legal precedent that are used to scrutinize and evaluate prudent nursing practice, and have produced the "docile nurse" (Cheek & Gibson, 1996, p. 86). The historical practice of implicating nurses in all medication errors by virtue of the act of administration can be considered a disciplinary technique.

> These rituals in effect serve to act as mechanisms by which nurses can and do police one another, and reinforce the notion of control and docility. . . .The fact that nurses themselves are willing to accept responsibility and shoulder the blame for medication errors when they have no control over many of the factors influencing error occurrence is, at least in part, a reflection of the power relations in the healthcare system, and the development of, at least to some extent, the docile nurse. (Cheek & Gibson, 1996, p. 87)

Nurses do not always conform to the standardizing, normalized practices that permeate their work, however. It would appear from the literature that adherence to policies and systematic processes is poor (Alper et al., 2012; Kim & Bates, 2012; O'Shea, 1999; Pape, 2003). Deviation from policy is automatically linked to an increased incidence of error in legal discourse. "This failure of hospital staff to adhere to hospital policy is disturbing. It indicates that staff are endangering patients' welfare and raises doubts as to accountability to the patient and employer" (O'Shea, 1999, p. 501). Other

researchers strongly advocate for a no-blame approach when people deviate from rules. For instance, Alper et al. (2012) examined nurses' self-reported violations of medication administration procedures in two paediatric hospitals. They reported that nurses knowingly and routinely violate procedures when the reality of the clinical situation does not match the medication administration rule (Alper et al., 2012). Alper et al. concluded that "violations are to be expected" (p. 414) and more importantly that "violations do not imply less safety; violations may reduce, have no impact on or even improve safety" (p. 414).

Summary

In this chapter, I examined a selection of the literature that concentrated on nurses and medications, with the intent to produce context for my research project and to summarize what is currently known about the topic. Furthermore, the selected literature was an important source of data for my project, as this review enabled me to discover what was written about nurses and medications, whose voice was represented in academic writings, and what was left out of the conversation. The vast majority of the literature has drawn on the post-positivist paradigm, building an account of medication work that is partial and limited, but given unquestioned authority (Folkmann & Rankin, 2010). The knowledgeable practices of expert nurses at the centre of medication work rarely appeared in this account.

Although a variety of perspectives are noted in what is written, the "voice of the nursing profession is not well represented" (Harding & Petrick, 2008, p. 44). In her comprehensive review of the literature, Gibson (2001) noted that while the voice of the clinical nurse is represented in some writings (most notably qualitative studies and non-

research based writing such as letters to the editor), this form of knowledge is often discounted as inconsequential. Cheek and Gibson (1996) concurred with this analysis and noted, "The absence of the voice of the clinical nurse in the literature, and the privileging of other voices, for example administrators, pharmacists and doctors, means that much of nursing's activities in relation to medications remains hidden" (p. 85).

To illustrate this point, I draw on a publication addressing the preparation of injectable medications in clinical areas, written by Beaney (2010), a scholar in the United Kingdom with a pharmacy background. Beaney noted that despite the recommendation that all injectable medications be prepared in pharmacy, where risks of medication error and microbiological contamination are lower, a significant number of preparations are still carried out in clinical areas by nurses as a consequence of limited pharmacy resources. From Beaney's perspective, the preparation of injectable medications outside of pharmacy cleanroom space is problematic because true asepsis is difficult to achieve in clinical areas, and because the risk of medication errors is higher. Based on this understanding of the problem, a standard operating procedure was implemented to provide guidance to nurses about how to prepare injectable medications in clinical areas (Beaney, 2010). What is missing from this account is the perspective of nurses, who are most closely impacted by the decisions to prepare injectable medications outside of the Pharmacy department (generally at times when Pharmacy is closed) and to implement a standard operating procedure that may or may not be difficult to incorporate into existing work practices. I want to make it clear that my critique is not directed at this particular author, but is a more general critique of the partial representation of viewpoints within the literature. Furthermore, much of the knowledge that is generated about nurses and

medications is produced through the utilization of aggregated data sets and other health informatics technologies. Data that are amassed in this way can be enormously helpful in understanding medication practice, but fail to capture the intricate actuality of medication work that can be generated by observing and talking to nurses in direct practice.

What I learned from critically analyzing a selection of the literature pertaining to nurses and medications supported the decision to use an alternate approach that grounds the research in the interests and relevancies of nurses. Adopting an ontological position inside the materiality of nurses' practice results in a different way of knowing, beginning in the expert knowledge that nurses have of their own work. An IE lens also produces a partial and limited view, but it is a different view, supplementing what is currently known. In the next chapter, I lay out the methodology underpinning this project and describe how an IE lens opens up nurses' medication practices for empirical investigation, bringing the taken-for-granted social organization of medication work into focus.

Chapter 3: Developing the Study: Through the Lens of Institutional Ethnography

IE allowed me to explore the original puzzle that sparked this research from the entry point of nurses as they went about their everyday medication work. Beginning in the medication practices of nurses, I empirically explored and traced the social relations underpinning and organizing their experiences. In this chapter, I examine the theoretical framework that shapes an IE research project and describe how that framework guided every phase of this inquiry. Drawing from the ontology, I describe particular strategies that enabled me to capture accounts of medication work that could reliably inform the research. I also include selected examples from the published literature to illustrate the diversity of the approach to IE and explain how they have informed my thinking about how to conduct this investigation.

Core Ontology

The core ontology that informs an IE investigation directs researchers to focus on the social, and how the social can be found in the way it coordinates the actual doings of people. Essentially, the social is taken up to mean that the person is in a particular location, in his or her body doings things, coordinated across time and space by the doings of others (Smith, 1987, 2005). The social happens and is happening as

> an ongoing historical process in which people's doings are caught up in and responsive to what others are doing; what they are doing is responsive to and given by what has been going on; every next act, as it is concerted with those of others, picks up and projects forward into the future. (Smith, 2005, p. 65)

Social relations are dynamic and connect people together in a sequence of actions, coordinating people's activities on a large scale. This occurs across multiple sites, involving activities of people not known to one another. An example of a livestock producer in Central Alberta will serve to illustrate how the social is coordinated. The

livestock producer looked after and fed her cattle daily, until one day she loaded them into a trailer, drove them to the auction market in the nearest town, and sold them. That particular local actuality (selling cattle) can be traced to conditions such as the spring weather in Alberta, the high cost of feed, the difficulty finding good feed locally, the cattle prices here and in the United States, marketing of beef in supermarkets, the trade agreement that allows for free flow of cattle across international borders, and so on. The moment the livestock producer sells her cattle is connected to other moments, past and future, and other people (such as the consumers who buy steak in the supermarket) who are part of an extended chain of social relations. Some of these relations are visible and apparent to the livestock producer who is both a part of them and caught up in them, but other social relations are obscured from her view. Observing the livestock producer in her particular location and tracing the links between what is actually happening (selling cattle on a particular day) to how that happening is organized is a key aspect of IE and is perhaps the most distinctive and compelling feature. "The power of institutional ethnography lies in its ability to link local experiences to broader social and global processes, which are not immediately apparent at the local level" (Ng, 2006, p. 186). Through inquiry, the researcher can achieve an enhanced understanding of how things work, how they are organized, and how they are linked in order to shape and dominate people's lives in multiple locations.

Due to its focus on the complex of interrelated processes and relations of a particular institution, IE is well suited to explore multifaceted fields of activity (such as medication work) that intersect regulatory, professional, and other boundaries. The epistemological and ontological underpinnings of IE set the basic framework for research

design and provided direction to explore the original puzzle that sparked this research. Moving past the original puzzle that generated this inquiry, I embarked on a process of discovery that enabled me to sketch out how medication work happens and to unravel various complexities and tensions that are inherent in it.

Historical Evolution

The emergence of IE is a somewhat recent event in the history of knowledge development. Smith's (1987, 2005) project to re-make sociology originated through her thinking about her own life experiences, her developing feminist consciousness, and her concern over the lack of space for women within sociological discourse. From its inception, IE was intended "for people" to disrupt ways of knowing about the world that worked to exclude or oppress women (Frampton, Kinsman, Thompson, & Tilleczek, 2006).

In addition to her own life experiences and her developing feminist consciousness, Smith (2004) described the way her thinking was "profoundly influenced" (p. 445) by her understanding of the materialist method proposed by Marx. Marx's materialism represented a shift from objectification and abstraction to what people do in the world, "a materialism of sensuous human activity" (Smith, 2004, p. 448). IE draws on additional Marxist concepts such as the theory of alienation, or the idea that those who are excluded from the production of knowledge and ideology are controlled to work in ways that isolate them from their own experiences (Harrison, 2006). Smith (2005) also drew on the Marxist notions of class, capitalism, and ruling to formulate the idea of "ruling relations" (p. 10). Relations of ruling are the

> extraordinary yet ordinary complex of relations that are textually mediated, that connect us across space and time and organize our daily lives – the corporations,

> government bureaucracies, academic and professional discourses, mass media, and the complex of relations that interconnect them. (Smith, 2005, p. 10)

These relations penetrate deeply to shape, dominate, and organize the lives of people, often in ways that are invisible to them. In Smith's (2004) view, the materialist method allows for an understanding of how ruling works in our daily lives and how people themselves are implicated in ruling.

Along with the emergence of the women's movement, interest in opening up the authoritative and accepted ways of knowing helped Smith's mode of inquiry to gain momentum (DeVault & McCoy, 2006). Although originally conceptualized as a feminist methodology, IE has attracted wide interest across disciplines and has evolved into "a sociology for people" (Smith, 2005, p. 1). It is particularly appealing to researchers who desire to reveal practices that dominate and subordinate others.

Epistemological Shift

IE differs epistemologically from many approaches in the rejection of objective accounts, in which

> objective knowledge is no longer "the truth." Rather, it is a form of knowing used to rule society. . . . This approach is grounded in her [D. E. Smith's] studies in the social organization of knowledge which make it conceptually possible to juxtapose objective knowledge of a politico-administrative *régime* over against the locally-organized, reflexive knowledge of individuals in the everyday world. (G. W. Smith, 1995, p. 633)

As such, knowledge claims—what can be known—originating from various locations are frequently a contested terrain where some forms of knowledge dominate others (Dyjur, Rankin, & Lane, 2011).

Standpoint. Standpoint is the methodological resource that allows the researcher to learn from people's experience, beginning with the active, embodied, located knower. Standpoint can be thought of as an "orienting device" (L. McCoy, personal

communication, March 1, 2009) that allows the researcher to gaze outward from a particular location. Within this view, standpoint is simply a place to begin, an epistemological and methodological starting point, grounded in the experiences of people. What people know and what can be seen from where they stand is of particular interest to the institutional ethnographer. As D. E. Smith (1990) maintained, "The only way of knowing a socially constructed world is knowing it from within. We can never stand outside it" (p. 22). This view of standpoint does not privilege a knower, but "anchors the research in the relevancies of a particular group" (DeVault & McCoy, 2006, p. 32). The institutional ethnographer will seek out many perspectives and listen to many stories in order to illuminate the relevant social relations that impact the particular group under study.

Experience. People (referred to as informants within IE) and their experiences are central to this method. Although informants are understood to be experts or authorities in their own lives, the researcher is not trying to understand the experience itself or to discover patterns or themes that might be embedded within experience. Instead, IE is oriented toward examining the accounts ethnographically to explore the social relations and organization that gives rise to that experience (Smith, 2005).

I anchored this inquiry in the everyday experiences of professional nurses—registered nurses (RNs) or licensed practical nurses (LPNs)—working with medications, outside of the institutional complex governing medication work. While I began the inquiry by exploring the experience of nurses, it is important to note that the institutional processes were the objects of my investigation rather than the perspectives of nurses. Taking the standpoint of nurses does not imply that all nurses share similar experiences,

but that their experiences are part of the same institutional complex, which can be explored in the way they talk about and conduct their work. From this point of entry, I was able to look from where nurses stand into the complex interwoven web of social relations organizing their lives and work across multiple locations.

Positioning as researcher. Within an IE framework, the researcher does not align with neutrality or detachment in an attempt to be objective and bias free (Smith, 1987, 2005). Instead, the researcher is explicitly positioned side by side with the person as subject. This is not viewed as a problem of bias, but is simply a recognition that neutrality is not possible and that where the researcher is positioned determines what can be seen and known (Campbell & Gregor, 2004).

In taking the standpoint of nurses in this research, I aligned myself with them, and committed to understanding medication work in order to extend their everyday knowledge. My personal work knowledge as an experienced nurse was a resource in this inquiry. I was not a naïve observer, totally unfamiliar with nursing work and health care delivery. I entered the research project with thoughts, ideas, preconceptions, and understandings already partially formed. Instead of striving for neutrality, I oriented to staying grounded in actualities, remaining open to seeing and understanding the actual practices and activities that nurses were engaged in as they worked with medications. This stance was essential to assist me in remaining open to learning beyond the discourse and preconceived understanding derived from the literature and my own personal knowledge.

Ontological Shift

The ontology of IE is represented in the rejection of speculative accounts; consequently, researchers avoid the conceptual leap into theorizing and philosophy, staying completely grounded in what is (Smith, 1987, 2005). Institutional ethnographers see the world as a material place of activities and actions that are always interconnected with other activities in sequence. The dominance of theory is rejected so that instead of searching for a theoretical explanation of events the researcher concentrates selectively on lived actualities—what is happening and how it happens in the everyday world (Smith, 2005; see also Campbell, 2003). In contrast to the materialist ontology, D. E. Smith (1990) noted that ideology

> can be viewed as a procedure for sorting out and arranging conceptually the living actual world of people so that it can be seen to be as we already know it ideologically . . . ideological practices are at war with a knowledge – or perhaps better, a *knowing* – that begins from the site of people's experience. (pp. 42–43)

In the analytic chapters that follow, I use this understanding of ideology and ideological practices to illustrate how medication work is known theoretically and categorically in the main part. I aim to provide a different account of medication work, beginning from the site of nurses' knowing.

Taking the standpoint of nurses reinforced my commitment to produce knowledge that is grounded empirically in actualities. Consistent with an IE approach, I considered nurses to be authorities on their work with medications, and I was committed to learning about the actualities of that work from them. McCoy (2008) advised that it is "important for researchers to begin, as much as possible, outside of academic theories, professional discourse, or administrative categories" (p. 704). This helps the researcher to be open to learning from actualities, beyond what he or she already knows how to think, speak, and

act. While I was familiar with much of the literature addressing medication work before I began this inquiry, I attempted to free myself from academic and professional discourses, watch closely for material practices, and listen "around and beyond words" (DeVault, 2002, p. 89) to what nurses said about their work.

I found it quite difficult to do this at times. For instance, as I was developing my analysis and thinking about what I had seen in the field, I was categorizing various observations as interruptions to medication work before recognizing that sorting these episodes of practice and labelling what I saw as interruptions was a conceptualization of nursing work that is commonly found in the literature. That critical realization helped to ground me back in actual material practices and avoid reverting to ideological representations of what medication work is "supposed to" look like. I found myself slipping back into that sort of conceptual practice at times, and had to make a concentrated effort to reframe my thinking so that my analytic attention was focused on the ways in which nurses were organized to think and the actual practices that characterized their work.

Generous Conception of Work

Work serves as a significant orienting device in IE (McCoy, 2006). With unwavering attention to material practices, work is conceived broadly as "what people do that requires some effort, that they mean to do, and that involves some acquired competence" (Smith, 1987, p. 165). Within this conceptualization, work also encompasses the taken-for-granted, body-memory-based practices that are nearly automatic but are intentional nevertheless (L. McCoy, personal communication, October 17, 2014). This generous conception of work helps the researcher to stay grounded in

actualities and to avoid moving into conceptualizations. Although formal job descriptions and policies provide some insight into institutional understandings of what people do, an IE inquiry focuses more closely on the everyday actions and activities of people.

Using a generous conception of work in this inquiry, I was able to draw attention to medication practices that may not be thought of as work within traditional conceptualizations and uncovered activities that may not be widely known to others. For example, the activities involved when searching out a medication that is not in supply (i.e., looking in a variety of places where stock medications may be kept, borrowing the medication from another person's supply, borrowing the medication from another hospital unit, calling family members to see if the medication can be brought from home, calling pharmacy staff to dispense the medication) are not traditionally thought of as work, and do not appear in formalized job descriptions or writings about nurses' medication work. The broad descriptions that appear in this thesis help to make ordinary yet essential medication work processes known and visible. More importantly, a more nuanced articulation of nursing medication practice can assist others to appreciate and anticipate the impact that changes such as the introduction of technology or organizational restructuring might have on poorly understood work processes. For instance, the introduction of bar coded medication technology to reduce the number of medication administration errors has created a complete change in well-established practices, inserting new, unanticipated sources of error (Hassink, Jansen, & Helmons, 2012; Rack, Dudjak, & Wolf, 2012; Sakowski et al., 2008). Understanding and appreciating current work processes could help to ensure that changes are introduced

deliberately, thoughtfully, and with a more inclusive understanding of the impact those changes could have on nursing work and patient care.

Research Aims

An institutional ethnographic account is committed to extending people's ordinary knowledge and ultimately reorganizing the social relations of knowledge (Smith, 1987, 2005). The intent of inquiry is to explain the social and the way that social processes organize and coordinate what actually happens in the ordinary lives of people. Applying an IE lens to the everyday world brings the broader organizational processes into view, and helps the researcher identify and analyze how people's lives "come to be dominated and shaped by forces outside of them and their purposes" (Campbell & Gregor, 2004, p. 12).

A second aim of institutional ethnographic research is to be transformative, as it is geared toward producing change. There is an orientation toward issues or concerns that are real for people, who are often in a position of subordination, and who stand outside the institutional discourses (Butterwick & Dawson, 2005). This requires the researcher to go beyond simply producing an account or understanding of what is happening in the everyday world, to a libratory or activist goal.

> The power of institutional ethnography goes beyond its academic and analytical utility. Its stance, located outside the ruling regime, enables the researcher to identify how ruling gets done and how to develop alternative modes of action to challenge regimes of ruling. It is through and through a political tool. (Ng, 2006, p. 187)

For example, Deborah Harrison (2006) examined the role that military culture plays in framing the official response to the abuse of women in military families. She discovered that cohesiveness was extraordinarily valued; as such, the community tended to "close

ranks" (p. 563) and protect abusers in order to promote community togetherness. Harrison's understandings of this and the pact of silence permeating military culture received a great deal of media attention and influenced the development of a *Family Violence Action Plan* (as cited in Harrison, 2006) within the Canadian military, thus fulfilling a political function. This is what makes IE "for" people, as the knowledge produced can lead to changes that impact people's everyday lives.

Selected Institutional Ethnographic Studies

There is a rich diversity in the way that the IE method of inquiry has been taken up by others since its inception. As D. E. Smith (1990) noted, there is no "one" correct way to use IE, as imposing orthodoxy within a method that critiques ideological practices would be deeply ironic. As a result, researchers have taken up the method in different ways, drawn on ideas that have been useful for their purposes, and moved IE in different directions. Campbell and Manicom (1995) called this a laboratory of sorts, as each person's work and the way he or she has taken it up has contributed to the ongoing development of IE. D. E. Smith (1990) herself extended an invitation to add to this development, saying, "The techniques of analysis and the concepts are there for your use. Feel free" (p. 206). In this chapter I draw on a small number of published institutional ethnographic studies to illustrate some of the variation in approaches to IE and point to aspects that were useful in the development of my own thinking.

Researchers have initiated inquiry from a variety of standpoints and with different aims. Characteristically, inquiries have been rooted in the interests of people being ruled and have a transformative aim but can equally begin from other standpoints to explore institutional processes. For example, Pence (2001) began her inquiry in the experiences

of battered women and showed how those experiences are erased through textually mediated work processes. Pence identified her intent to make changes in those practices that fail to provide safety for women. In another example, Rankin (2009) drew on prior research examining the impact of hospital restructuring on nurses' work as well as current experiences to rally nurses to take back their work. Rankin (2009) identified her project as "a form of political action. It aims to contribute to and foster a critical conversation about some of the taken-for-granted dominant discourse that organizes nurses' acquiescence" (p. 275). In contrast, McCoy (1998) began her inquiry of the accounting practices that came about after changes to the funding structure for community colleges in a different way; rather than positioning with teachers or students, she started her investigation with deans, who occupy positions of power. McCoy (1998) did not claim a transformative purpose, illustrating instead how restructuring of education comes about. Regardless of how each inquiry began, all of these various entry points investigated beyond the local to the institutional processes and practices. In each study, the carefully drawn analysis clearly illustrated how things happen as they do and how to trace those happenings into the institution, which provided guidance and ideas for my research approach.

Work is a central concept in IE and has been used by a number of researchers to illuminate what people accomplish in their everyday lives. For example, McCoy (2009) examined the work of pill taking by people prescribed antiretroviral medications for human immunodeficiency virus (HIV), which includes actualities such as recognizing dose time—the coordination of inner experience, clock time, and the drug-dosing schedule. In another example, Welsh and Rajah (2014) examined the work that formerly

incarcerated women carry out as they re-enter society after their release. They identified a "profound disjuncture" (Welsh & Rajah, 2014, p. 325) between the actual work that women are doing in order to reintegrate into society and what prevailing discourses recognize as legitimate work. Other researchers have examined the everyday work of feeding the family (DeVault, 1991), the work of rural nurses caring for labouring women (MacKinnon, 2008), and the work that mothers do to successfully negotiate the child welfare system (Brown, 2006). These studies are particularly valuable in that they offer an understanding of work, previously unrecognized, from the perspective of people doing the work. I gained a great deal of insight from these instances of research in planning my own project, as they helped me to think about work in a much broader way. Reflecting on my own knowledge as a nurse working with medications, I have become aware that not all the work I accomplish is formally recognized. For example, searching out medications when they are not readily available is something that I have done, observed many times, and now regard as a work practice.

Investigators have used a broad range of data-collection strategies in order to explore their topics. For example, Grahame and Grahame (2000) conducted field research on environmental education by naturalists through their participation in nature and interpretive tours. In addition to Grahame and Grahame's (2000) participation as tourists, they also used texts to develop an analysis of naturalists' work activities and how they are linked to well-established nature discourses. D. E. Smith (2005) demonstrated how the researcher can draw on her own experiences and work knowledge to build an analysis using the example of "producing a grade" (p. 146) in teaching work. Although she called this example a mock ethnography, it did demonstrate the legitimate position that personal

work knowledge has within institutional ethnography (Smith, 2005). Using texts exclusively, Bell and Campbell (2003) demonstrated how a trustworthy analysis can be built from one person's experience. Their analysis was built around the evidence presented at an inquest into a child's death from severe malnutrition (Bell & Campbell, 2003). Bell and Campbell were able to empirically trace how the child was textually constructed as dying from a serious illness, which led to both actions and inactions that resulted in the child's death. One of the most important learnings from this is that their research "highlights the problems that can arise when textual realities routinely are given authoritative status and displace other forms of knowing" (Bell & Campbell, 2003, p. 113). Bell and Campbell's example is also methodologically useful, as the researchers demonstrated how to trace textually mediated relations and their operation.

The Research Process

Although I had a starting point for my research in the medication work practices of professional nurses, the process I used was open ended and flexible. I did not have any predetermined outcomes in mind, nor did I have a firm plan about how I would proceed. That is not to say that my research was haphazard or unfocused, but simply that I was committed to a project of discovery, consistent with IE. What I learned in the initial phase of the research, grounded in the experiences of nurses working with medications, shifted my thinking, guided my focus, and provided direction for the interviews and observations that followed.

Research Settings

Two hospital units served as the settings for the study. Both units provided similar types of medical surgical acute care hospital services, but differed in the breadth of

services, acuity of patients, number of patients served, core patient population, and degree of technology use associated with the medication system. One study setting was a smaller facility providing a full range of services to a primarily rural population. Approximately 50 full- and part-time nurses were employed at this setting. The medication system was a low technology, traditional distribution system, supplemented at times with technological tools such as computer-based medication administration records. The second study setting was a large urban facility, employing more than 10 times the number of nurses, and with access to different medication distribution systems and a full range of services. Employing two diverse settings enabled me to explore nurses' work with medications with varying technological capabilities and diverse environmental demands. Although the settings differed on a number of dimensions, the work processes I observed in this inquiry were similar in both research settings.

Data Sources

Three interconnected data sources were used to inform this inquiry: observations, interviews, and texts. I watched people at work with medications, asked people questions about their work, examined documents that they created, and analyzed texts and policies that formed the legal and procedural framework guiding their work. All of these data sources helped me to create a comprehensive picture and to understand what nurses were doing in their very complex work with medications. Data collection occurred sequentially over the course of 3 years, from May 2011 until July 2014. I began by exploring everyday medication work from the standpoint of nurses, and I used what I learned in the initial phase of the research to provide direction for future exploration. Most of the data collection for the initial phase of the inquiry took place within a 6-month period in 2011.

In the second phase, I shifted focus from the local settings to the institutional processes shaping medication work that were appearing in the work and talk of nurses. Data collection during this phase of the research involved the discovery of organizational details that were absent from primary informants accounts. In this second phase, I analyzed documents such as hospital policies and the required organizational practices issued by Accreditation Canada International (n.d.), continued observations of other workers such as pharmacists and a unit secretary, and interviewed pharmacy personnel, managers, a member of the provincial regulatory body's disciplinary committee, a surveyor for Accreditation Canada, and leaders within national and international organizations such as Accreditation Canada and the World Health Organization.

Informants

In total, 24 informants participated in this inquiry. All of the primary informants (nurses) consented to both observations and interviews. Although it was not always possible or appropriate to engage in conversation during the actual preparation and administration of medications, I did have many informal, quick conversations during observational periods. The observations and informal chats that occurred earlier often served as a springboard for more in-depth conversations either after the observation was over, or during an extended break in the workday (DeVault & McCoy, 2006). In addition, I utilized data that were collected from one nurse in two interviews in a small-scale IE investigation that I completed as a doctoral course requirement. I received approval for this activity from the University of Calgary Conjoint Faculties Research Ethics Board, allowing me to use the data in this project.

Most secondary informants were interviewed but not observed, either because of the nature of their work, the line of questioning that I was pursuing, or their distant physical location that made an observation difficult. For the purposes of anonymity and confidentiality, informants are referred to using a generic title such as "registered nurse" or "pharmacist" and pseudonyms have been used in all cases.

Recruitment. Before recruitment started, I had the support of senior nursing management within both study settings. The nurse managers of each hospital unit facilitated the distribution of a recruitment letter among the regular staff on each unit. I was prepared for the recruitment process to be challenging, as I was concerned that nurses may be reluctant to participate in research in general, and unwilling to participate in research they fear could scrutinize their work in particular. I also worried that nurses might not want to participate in research in which their anonymity could not be preserved. However, recruitment was relatively easy, and I quickly had more volunteers than were necessary to inform the inquiry. I sought informants who were routinely engaged in medication work, were familiar with the medication processes in their own setting, and who were willing and able to speak about their experiences. On a couple of occasions, I obtained on-the-spot volunteers, as other nurses who were present during a time period when I was observing an informant wanted to join into discussions and share their thoughts and experiences. All secondary informants were sought out intentionally and contacted directly to determine their interest in participating and consent.

Observations. The observation of activities as they actually unfold in the everyday world is a key method for gathering data in IE, and I found this to be critical to my understanding of medication work in this study. Observation allowed me to watch

nurses, active in the setting, as they went about their work. I observed 13 nurses (RNs and LPNs), as they went about their everyday medication work, six in the rural setting and seven in the urban setting. Later in the inquiry, as I broadened the focus to trace institutional processes, I conducted observations of pharmacy workers and of a unit secretary. I originally planned to observe nurses for a full shift of duty, which is generally 8 hours. I believed that the complete 8-hour block of time was important to observe, as I knew from my own experience that medication work is distributed diffusely across time, rather than clustered into specific medication administration times that have been typically included in other observational studies (Chua, Tea, & Rahman, 2009; Maricle, Whitehead, & Rhodes, 2007). I did complete four 8-hour observational blocks, but found that I was unable to focus as closely as I needed to toward the end of the time period. As my attention faded, I noticed less, asked fewer questions, and wrote even fewer field notes. Subsequently, I cut the observational time to between 4 and 5 hours, which maximized my ability to pay close attention the entire time I was present. I varied the time of day and day of the week of my observations to ensure that I captured the full range and diversity of practices that could occur at off-peak times.[3]

Consistent with the ontology, I was not committed to maintain distance between the informants and me, yet I was very conscious of my own presence in the setting. I was careful not to disrupt work processes, interfere, distract, or interrupt people during the actual preparation and administration of medications. Nonetheless I was quite aware that my very presence could affect the way that people went about their work. I spent time at the beginning of each observation explaining my interest in their work and reassuring

[3] Off-peak times generally refers to evening and nighttime hours and weekends. Typically, fewer resources (such as access to pharmacy services) are available during off peak times.

informants that I was not there to scrutinize or judge their practice within the usual ideological relevancies. I also allowed time for informants to become accustomed to my presence before beginning the observational period. My goal was to become as unobtrusive as possible, to allow nurses' work with medication to unfold as it normally would. I took very few notes in the presence of the informant, to deemphasize my role as a researcher during observations.

Observations were invaluable in this inquiry, because they allowed me to move beyond official versions of medication work and what is supposed to happen, to discover what was actually happening. For instance, when I spoke with nurses about their work, they reported that they always follow the rules of medication administration, a response that is consistent with what is expected of them. However, when I watched nurses work, I observed hundreds of occasions where they broke those rules. Other researchers have made similar discoveries in observational research. For instance, in her study of the impact that hospital restructuring had on nursing work, Weinberg (2006) described a "mysterious disconnect" (p. 43) between the way nurses talk about their work and what nurses actually do. Weinberg discovered that while nurses often defaulted to relationship talk and caring rhetoric when asked, their actual practice consisted of very different activities. My analytic interest was not to judge or critique nurses' actions, but to tap into their thinking and the social organization embedded in it by asking questions such as, "What were you thinking when you did that," "How did you know to do that," and "What are you doing now?" (See Appendix A for sample questions asked of informants.) Observing nurses helped me to ground the data in the realities of practice and get beyond the discrepancy between what people say they do and what they actually do in practice.

Although I was careful not to characterize individual nursing actions as "good" or "bad", I used my own professional judgement and extensive experience as a nurse and a nurse educator to evaluate nursing practice with medications. My expertise allowed me to assess nurses' discretionary actions as they routinely adapted stringent rules, confirming the central role that nurses play in ensuring patient safety.

Interviews. In the initial phase of this inquiry, I interviewed the same 13 nurses that I had observed, either at a time following the observation or in conjunction with the observation. I first listened to descriptions of their work, identified threads of "institutional connections" (DeVault & McCoy, 2006, p. 24), and followed the traces that were revealed in their talk. What I learned in the initial phase guided me to interview an additional 11 secondary informants. Reaching a certain number of informants was not a consideration, "because institutional processes [which are the focus of this inquiry] are standardized across local settings, so any group of informants encounter these processes in the same way" (DeVault & McCoy, 2006, p. 23).

The interviews I conducted for this inquiry were generally open and loosely structured. That approach allowed people to talk about their work in the way they know it, unconstrained by my own preconceptions and biases. Some interviews were a series of informal chats, occurring in fits and starts during the observational period. Other interviews were more concentrated, conducted over a 1- or 1.5-hour period of time. In all cases, the conversation was organized around the specific research topic of medication work and was a free-flowing, responsive, and dynamic dialogue. The interviews that followed observational periods were especially rich, as I sometimes observed behaviours that I did not fully understand or that I wanted trace into institutional processes. For

example, when a nurse in one observation did not follow the formal process for identifying patients, she told me that she knew she was "supposed to" (LPN Brenda) do it in a certain way and explained why she choose not to follow the process in this instance. In an interview following this observation, I explored that nurse's knowing of what she was "supposed to do" (LPN Brenda): how she knew what was expected of her, what documents directed her work, and so forth. What I learned from the observation and interview provided direction for the subsequent phase of the research in which I explored the institutional complex, interviewed a number of secondary informants, and analyzed key texts that direct identification work.

Most of the conversations flowed easily and resulted in rich, plentiful, vivid descriptions of the informant's work. Many informants expressed an appreciation for the opportunity to talk about work they know intimately and were surprised to discover that the process of explaining their work to me enriched their own understanding and appreciation of it. During the interview process, I often had the opportunity to reflect what I had seen during an observational period back to nurses. This allowed me to verify my understanding of what I had noted and to help me discover gaps in the way I was making meaning of observations.

Documentary analysis. Texts are of critical methodological importance, because they enable the researcher to link the local setting to the relations of ruling and larger institutional processes. Attending to textually mediated work processes can orient the researcher to the generalized forms of relations that enter into people's activities, so finding the texts is vital (Smith, 2005). In their talk, informants suggested the kinds of texts that were important to identify and trace. For instance, when I asked RN Mindy how

she knew that she was supposed to identify patients in a certain way, she referred to the hospital policy on patient identification (Health Region, 2012) as one informational source. I then examined the policy, intending to understand "the ways it [text or textual process] mediates relations of ruling and organizes what can be said and done" (DeVault & McCoy, 2006, p. 34). As I analyzed the document, I traced the origins of the policy to the required organizational practices (Accreditation Canada, 2011), which health care organizations must adhere to in order to be accredited. Tracing even further into the institutional complex, my analysis of the required organizational practices document led me to a World Health Assembly resolution on patient safety (World Health Organization [WHO], 2002), in which patient identification was targeted as a key area for improvement. Simply tracing the texts that are embedded in informants' talk immediately opened up a larger, broader organization when viewed through an IE lens. I also included the literature that addressed patient safety and medication administration as second-level data, examining the discourse and exploring the way that discursive practices appear in nurses' everyday medication work.

Analysis

Consistent with the ontology, analysis in IE research is directed toward making social relations visible (Smith, 1987, 2005). The analysis is meant to clearly show how the broader institution establishes the local setting. This does not happen by the researcher making connections; rather, the researcher must trace, explain, and explicate the connections that are already there (Campbell & Gregor, 2004). Analytic thinking characterizes all phases of the research and plays a role in determining future directions for exploration (DeVault & McCoy, 2006). Beginning with the first interview, I listened

to nurses' accounts of their experiences with medication work, reflecting on what they said, how they said it, and the sequence in which they said it. I reflected on what I saw and heard, checked my understanding, and asked questions that derived directly from what people were saying. Throughout the inquiry, I paid close attention and followed the threads that were obscured but evident within their stories, until the coordinating features of their work were uncovered.

I prepared transcripts of all interviews and field notes as soon as possible after each interview or observation had ended. I read each transcript twice: first to provide an opportunity for initial impressions and thoughts to surface, and second to allow for interrogation of the data. D. E. Smith (2005) referred to the secondary reading of data as a "secondary dialogue" (p. 137), in which the researcher can rediscover what was observed or said. She maintained that this secondary dialogue is important, as previously unknown elements can be distinguished when there is time and space for reflection (Smith, 2005). I revisited portions of transcripts as I worked through my thinking and wrote the analysis.

I began to write about what I was learning and continued that process to write, think, go back to the data and reflect on what I saw and heard, rewrite, rethink, and so on. My goal was to stay firmly anchored in the local experience, while simultaneously tracing beyond that experience into the larger social organization. My analytic focus shifted throughout this process, which made my research more relevant and rigorous. I was able to produce compelling arguments, supported with empirical evidence, that clearly map the relations of ruling that connect local medication work with the broader organizational features, largely outside of people's view.

Ethical Dimensions

I obtained ethical approval for conducting this study from the University of Calgary and from the health authority at which this research study was conducted. Primary informants freely volunteered to participate and provided written consent after being informed of the purpose, aims, and procedures of the study (see Appendices B through E). I directly approached secondary informants; as such, these informants could potentially have been reluctant to decline when I asked for their participation. To reduce that potential, I made sure to emphasize the voluntary nature of their participation and their freedom to withdraw at any point. I also provided potential informants with the consent form and information letter before asking for their participation, and then followed up after they had the opportunity to review the information.

As I was conducting observations with informants, I came into contact with patients, family members, members of the public, and health care professionals who were not the focus of the inquiry. I ensured that my interactions with others were limited to social conversations. Patients who were under the care of nurse informants during an observational period were approached by the nurse, informed of the purpose of the study and of their right to allow or disallow me to observe nurse-patient interactions and care, and asked for their permission to allow me to observe. If patients agreed verbally to participate, I then entered the patient room to obtain formal consent, and emphasized that the work of the nurse was the focus of the observation rather than the patient's characteristics or information. In cases in which patients were unable to give consent or did not wish to participate, I removed myself from any interactions that involved that person.

Although there were no direct benefits to participating in this inquiry, a number of nurse informants reported that they found it extremely valuable and worthwhile to talk about what they do, and they gained a sense of appreciation for the complexity of their own work. There were no direct risks to participating in the research project and no distressing or disturbing experiences were uncovered in the process.

It was not possible to ensure anonymity in the study, as my presence during an observational period targeted the nurse I was shadowing as a research informant. Nurses were aware of this beforehand, and still volunteered freely, cognizant of the fact that their participation would be known to their colleagues. Beyond each study setting, I preserved informants' anonymity, as no references have been made to individuals in this report, nor will any references be made in future publications or discussions of the research.

Summary

In this study, I take the standpoint of nurses to explore and understand how their work with medications is coordinated and ruled. I did not judge, scrutinize, or evaluate individual nursing practice or presume to suggest that nurses should or should not work in particular ways. Instead, I used a research approach that allowed me to discover how medication work happens in the way it does and to make visible the forms of coordination that are organizing the work of nurses and others at different points in time and space. Through my research, I expose the complex set of texts and relationships that inform nursing practice with medications and show how nurses work practices are organized so that rule breaking is frequently a reasonable approach.

Chapter 4: The Everyday World of Medication Work

In this chapter, I draw on my own experience as a nurse and nurse educator, the observations that I made through the course of this study, and numerous formal and informal conversations with nurses to illustrate how patients receive their medications in a typical hospital unit. My intention is to describe the work processes, material conditions, and physical terrain in enough detail to provide readers with the necessary context to facilitate understanding of nurses' everyday medication work. Along with the material conditions and characteristics of the hospital unit, nurses' work also interfaces with patients, doctors, pharmacists, and other health professionals. I describe how nurses' work is connected to the work of others and show how medication work is predominantly mediated through a complex series of texts. In this analysis, I introduce the reader to the key texts that coordinate and control nursing work with medications. I also illustrate how expert nurse readers are integral to managing medications safely and competently. Additionally, I begin to sketch out the theorized and abstracted thinking that underpins the key texts, intentionally designed to standardize nursing work processes with medications.

Medication Work as a Textual Practice

In an IE analysis, texts are broadly defined and may appear in a variety of configurations, including documents, forms, reports, photographs, computer screens, and so on (DeVault & McCoy, 2006). For example, nurses use texts such as monitor screens on IV pumps, medication packaging, printed policies, identification badges that allow access to the medication supply room, and so on. All of these examples illustrate the active and relational nature of texts. Rather than simply conveying factual information,

texts are like "speakers in a conversation" (Bell & Campbell, 2003, p. 117), in which the textual side of the interaction is fixed, creating an "open ended chain: text-reader-reader-reader" (Smith, 2001, p. 176).

Textual analysis is foundational to the material explication of various work processes in an IE study, because texts serve to standardize activity across multiple sites. For example, a policy about the need to double check the dosage of narcotic infusions can be read by a nurse working in an intensive care unit today and a palliative home care nurse working a month from now, producing similar actions despite the separation in person, time, and place. It is this feature that allows the researcher to discover ruling relations—those particular forms of social relations that arise in the broader social world (the translocal) and enter local settings, accomplishing coordination and control (DeVault & McCoy, 2006). Exploring texts and how they mediate social relations is central to understanding how things work and is of particular focus in any IE study.

Texts Mediating Medication Work

The production of the medication administration record. Within the complex web of texts and social relations organizing nursing medication work, the medication administration record (MAR; see Appendix F) quickly emerged as particularly central to nursing medication work. The MAR is a highly systematized, legal record of the medications that are ordered, prepared, and administered to a patient in a health care facility by a health care professional, most often a nurse. Although the format may vary from facility to facility, the MAR typically includes demographic information such as the patient's name, date of birth, room number, and allergies, as well as the details of the ordered medication such as the name, dose, route, and frequency that the medication is

meant to be given. The MAR provides evidence of all the medications consumed by every hospital patient and is designed to be completed with initials or codes rather than with a narrative or contextual response. A specific time for administration is designated for recurring medications, with space provided for the person who gives the medication to sign their initials (manually, in the case of my field settings, or electronically, as has become the custom at some sites). For example, the patient may be prescribed aspirin every day at 0800. The medication name and time is entered on the record and read by a nurse who prepares and administers the medication. The nurse then initials the 0800 time column when the aspirin has been given. When medications are given on an as-needed rather than a recurring basis, the pro re nata (PRN)[4] MAR (see Appendix G) is used. For example, a physician may order that analgesics be used in the event that the patient experiences pain. The physician order may specify a range of times (e.g., every 4 to 6 hours) and a range of dosages (e.g., one to two tablets) that may be administered. The main variation with the PRN MAR is that there are no specific times designated for administration, so the nurse writes the date and time of administration and initials in the appropriate column when the medication is given.

Each patient's medication orders are recorded into his or her personal health record also known as the chart. An individualized MAR is created from the medication orders and filed into a binder, colloquially referred to as the "med book." The individualized MARs are generally split into two or three different med books, aligned with the way the collective workload has been divided among the nursing team. Each

[4] The Latin term pro re nata (meaning as the circumstance arises) is commonly used to refer to physician-ordered medications that are administered on an as-needed basis, at the discretion of the nurse.

med book is typically kept on top of the "med cart," a portable medication supply system in which ostensibly all of the medications needed for patients are stored for easy access and distribution (see Figure 1).

Figure 1. The med cart.
Note. From C. Craigie (personal communication, November 1, 2014).

In the Figure 1, the medication binder containing the patient MARs is visible on top of the surface; the med cart also contains the equipment and supplies needed to administer medications including the small paper dispensing cups, alcohol swabs, sharps containers, drinking glasses, and so on. Contained within the med cart drawers are the necessary medications and other supplies such as needles, syringes, and IV fluid bags. Individualized medication packets (see Figure 2) are kept in separate drawers labelled by

room number, one for each patient. Note how limited the surface of the cart is and how little space is available for the nurse to work. As I explain later, lack of access to the cart, missing medications and equipment, and difficulty accessing all of the resources stored there give rise to some of the adaptations that nurses make to carry out their work effectively.

The medication delivery system used in both of my field settings is called unit dose; this is a method of medication distribution in which the Pharmacy department dispenses individually packaged medications intended for particular patients without the need for alterations prior to administration. In this system, nurses circulate the unit with the med cart containing both stock and individually dispensed medications and use the MAR to determine who gets what medication, in what amount, and at what time.

The med book is an important working document that nurses refer to frequently to guide the administration of scheduled and PRN medications. During the brief periods in between medication rounds,[5] when the med book is in less demand, other workers such as the unit secretary try to gain access to these records. Unit Secretary Wanda describes the efforts she makes to work cooperatively with others and share access to the medication books:

> I need the med books for that [processing orders], and I don't want to have them for more time than I need. The nurses need those books, so I try to work around them. Usually, I wait and process the med orders after coffee because that's a better time for the nurses. (Unit Secretary Wanda)

During one observation session I was able to watch the process that Wanda described. Around mid-morning, when a number of new medication orders had

[5] Medication rounds refers to the time-honoured practice of distributing medications around the hospital ward; in these rounds the nurse delivers prepared medications to each patient, generally at predetermined times specified in institutional policy.

accumulated, Wanda walked down the hallways to collect the two med books (each containing MARs for separate patients) and took them back to her desk. She opened the first patient chart to the new medication orders and the med book to the individualized MAR. She then carefully copied the order from the order sheet in the chart into the appropriate area on the MAR (a work process referred to as transcription), assigned the times for administration according to hospital practice, and initialled the patient chart and the MAR to indicate that she was the person who copied the order. Wanda then reviewed her work by reading the order a second time to verify that she had transcribed it correctly. Finally, she placed the chart on top of the rack behind her so that her transcription could be verified by a nurse[6] and returned the med books to the carts. Verification of Wanda's work is required prior to the administration of the initial dose of the medication, according to the standardized work processes for transcribing physician orders (Nurse Manager, personal communication, July 15, 2011). This practice is designed to detect any potential errors in copying orders.

As the medication book is critical to nursing and to unit secretary work at the same time, difficulties arise for both. The unit secretary's work is delayed until she can gain access to the medication books, which is generally well after physician orders have been written. When new orders are not entered onto the MAR immediately, there could be a delay in carrying them out, as it is the MAR that officially initiates medication work. Not surprisingly, unsanctioned work practices (such as administering medications before the order has been transcribed and double checked) emerge, as nurses attempt to be

[6] In the work processes that I observed, the nurse in charge of the unit verified order transcription most of the time. Verification occurred as time allowed, usually once the majority of orders had been transcribed and were awaiting attention.

efficient and conscientious in administering needed medications in a timely manner. Nurses are vigilant about watching for new orders. Nurses notice when physicians arrive to see their patients and routinely speak directly to the doctor or check patient charts following a physician visit to obtain new orders.

In my observations, I watched many times as nurses administered medications as soon as a new order was received (and before it was transcribed). RN Violet explained,

> If the doctor tells me "I want Lasix 20 mg IV in between the two units of blood," I'm going to give it right away. I wouldn't wait for it to be processed [transcribed] because I heard it myself. What's the point? (RN Violet)

Her decision to administer Lasix to her patient before the order could be formally processed makes perfect sense to Violet and the way her work unfolds. Violet is aware that her elderly patient needs to have the medication given at a specific time (between the two units of blood) and for a specific purpose (to prevent circulatory overload). The purpose for giving the medication matches Violet's knowledge about the frail elderly and the increased load that additional blood volume can place on the heart. This RN was confident in what she heard the doctor say, and she had no doubt about giving the medication before it is processed, transcribed onto the MAR, and double checked by a colleague. Violet's carefully thought out, knowledgeable decision was safe, vigilant, and efficient. She contemplated the possible risks inherent in this specific patient's particular treatment at that precise moment in time, and she was aware that delaying the administration of Lasix until the "safe" and correct processes could be followed may in fact have resulted in complications for the patient, as well as substandard, unacceptable care. Nevertheless, her actions in giving the Lasix before the order had been properly

processed were not institutionally sanctioned and broke the rules for what is officially considered to be safe and good practice.

This example provides an illustration of the kinds of unsanctioned work processes that may emerge as a result of safety and quality improvement initiatives that are meant to lead to excellent, safe care. Standardized processes require nurses to respond in certain prescribed ways that cannot accommodate the real world of nursing as it unfolds in the everyday. Difficulties, such as limited access to med books, demand knowledgeable, contextual, individualized actions on the part of the nurse. Violet's knowledgeable and vital contribution helped to ensure a good, appropriate outcome for the patient, but becomes lost inside ideological understandings of what constitutes safe practice. This thread will be analyzed further in Chapter 6 of this dissertation.

Expert reading of the MAR. The MAR is activated through a particular kind of reader. Nurses know medication work from living it, from inside the materiality of it, as they do it day to day. That expert knowledge guides their specialized technical reading of the MAR as they take up the information, make meaning of it, and use the knowledge to organize their work. My data offer many examples of how the MAR serves as a central organizing text for how the nurse structures her day, and how other work processes are structured around medication work.

The MAR and the med book that holds the collection of medication records are so critical that they have been referred to as being "like a Bible" (RN Karen). In my fieldwork, I watched every nurse, without exception, scan the MAR very early on in the shift and use the information gleaned about times, numbers, and complexity of medications scheduled to plan the day's work:

> You come in; you start your shift. You do a quick round of your patients, and the next thing, everyone lines up at the medication cart so they can check the med book. What are your 0800 meds, and now your breakfast trays are coming at the same time, and you're prioritizing. (RN Karen)

The scan or check of the medication book that RN Karen referred to in this interview, and that I observed many nurses conduct in the field, is very quick. However, because of the proficiency of the nurses doing the scanning, vital information is drawn from that brief engagement with the text. Expert nurses like Karen utilize a solid pharmacological knowledge base combined with cognitive skills, clinical decision-making abilities, and knowledge about particular patients to determine patient needs, set priorities, and conduct their work. This is critically important work that can only be accomplished by knowledgeable readers. Knowledgeable readers are not simply gathering information about what medications are ordered at what times: they are carefully gleaning vital data that will assist them to provide individualized, appropriate care to their assigned patients.

To illustrate how the expert nurse reader takes up the information contained within the MAR and uses it to make her work meaningful, I use the example of standardized medication times. Health care leaders schedule medications to be given in batches at certain times of the day (also referred to as medication rounds), such as 0800, 1000, 1200, and so on. In my observations, nurses were scheduled to administer multiple medications all at the same time, with no set priority or discernible difference in the way that the various medications were recorded in the MAR. All medications scheduled for 0800 appear identically in the MAR and have no formal designation to indicate whether one medication is more important than another. Nevertheless, the expert nurse reader knows how to manage the medications and makes subtle decisions about where to start her work, juggling the priority of each medication within the context of the endless

details and particulars that characterize a typical hospital unit. For example, Karen spoke about the "big things" that she looks for in her scan of the MAR, and the subsequent actions that are triggered for her:

> Well, with insulin, you're going to check that right away. So that's one of the big things when I was saying scanning for the big things, the priorities, that's a trigger. Insulin. Boom. Go right away to the chart. . . . So that's a trigger for planning. (RN Karen)

The simple word insulin, the name of the medication, means something particular to this nurse. Drawing on her background knowledge of diabetic patients, the importance of meal times and pharmacology, and using her cognitive skills, Karen knows that it is important for her to be aware of the patient's current blood sugar level, dietary intake, and state of health so she can administer the insulin within a tightly scheduled timeframe in relation to meals, or hold off administering the medication if necessary. In this case, Karen described how she would go directly to the patient chart, check the recorded blood sugar levels, test the patient's blood sugar if no recent results are recorded, check the current insulin order, keep an eye on the clock, watch for breakfast trays to arrive, and give the insulin just as meals are delivered. Insulin is a "big thing" (RN Karen) for nurses, because it triggers other priority work processes that must be precisely factored into their day. Other medications, also ordered for 0800, do not need to be so precisely timed and can be delayed until higher priority medications have been administered. The knowledgeable nurse reader routinely engages in this kind of discretionary thinking, using the information gleaned from the MAR to set priorities and to conduct her work. Health care organizations implicitly rely on nurses to know this and to make judgments about which medications can be delayed and which must be given immediately.

Scanning the MAR and paying attention to the medications that are scheduled also provides nurses with nuanced information about the patients that they are assigned to care for. The MAR is one important way that nurses come to know their patients more broadly, to anticipate needs that they might have, and to plan nursing work. When the nurse reads the information that is contained within the MAR, she makes sense of it, and the meaning that is created guides her thinking and action. RN Marsha explained how this works:

> It's the way that experienced nurses learn to build knowledge about patients, because there is this synthesis going on. When I see what meds [medications] they are on and how often they will be getting them, it acts as a juncture between what the physician has ordered and my work, which is my knowledge about what the patient is going to need from me based on the medication profile. Okay, they're on digoxin, they have heart failure, what do I know about the pathophysiology and what do I need to check on? It just happens; it's that holding the body of the patient together with that background knowledge that is synthesized through looking at a medication. (RN Marsha)

It is apparent that through her knowledgeable, careful reading of the MAR, the nurse comes to know complex information about patient disease processes and comorbidities, communicated succinctly through the text.

Ruling texts. As critically important as the MAR is to medication work, it does not stand alone. It is an integral component of an interrelated series of texts that connect up and speak to one another, activating a series of actions and linking up people who are differently located within the organization and the broader context of health care. These people may be physically separate from one another in both time and space, but each of their actions precipitates another action and accomplishes the intention of the prior activity. For instance, the physician writes an order on the physician orders and progress notes form, which is read and activated by a unit secretary or nurse who processes the

order and records it onto the MAR and the medication profile. A copy of the physician's orders is simultaneously transmitted to the Pharmacy department by the unit secretary, so the medication can be prepared and dispensed. There can be a significant delay between the time the order is entered onto the MAR, essentially activating the work of administering the medication, and the time the medication arrives from Pharmacy. Activated by the entry of the order on the MAR, the nurse prepares and administers the medication, and the patient takes it.

The work sequences that are activated by the physician orders and MAR are linked into ruling texts (such as regulatory documents) that serve to organize and regulate the actions of people involved in medication work. Texts such as the MAR are "key devices in hooking people's activities in particular local settings and at particular times into the transcending organization of the ruling relations" (Smith, 2001, pp. 164–165). As such, the usefulness and meaning can be understood only in the context of other higher order texts that regulate the MAR and dominate everyday practice. Hospital policies, professional standards and hospital accreditation requirements in particular form the basis of, shape, and control other texts, and establish wide-spread, essential expectations. As Dorothy E. Smith (2006) explained, "Higher-order texts regulate and standardize texts that enter directly into the organization of work in multiple local settings" (p. 79). George W. Smith (1990) also explained that these texts serve to force accountability and are recursive, ensuring that certain actions are taken regardless of where or when they are used. "The recursivity of a generalized course of action makes it possible to go from particular events in local settings to a set of general, textually mediated set of social relations because they have the same social form" (Smith, 2006, p. 179). As I have

started to show, medication processes such as transcribing orders and checking the MAR are recursive, as the reading of standard texts result in similar work processes occurring at different times and in different places. The constancy that this provides is meant to produce "standardization of people's actions that is integral to institutions" (Quinlan, 2009, p. 629). These standard processes enable organizations to coordinate people's work activities in order to achieve organizational goals and objectives (Smith, 2001).

In the health region where both of my field settings are located, the MAR is connected to a medication preparation, administration, and disposal policy that outlines general principles as well as more specific directions for particular types of medication work (Health Region, 2009b). For instance, very specific rules around transcribing medication orders are clearly outlined in the medication policy, specifying who is entitled to transcribe a medication order, how the order is to be transcribed, verified and co-signed, and when the order can be implemented. The explicit instructions contained within this higher order text are meant to guide the work of anyone transcribing medication orders in the health region, regardless of the work setting. More importantly, the medication policy serves a disciplinary function, as it is connected to regulatory guidelines and used to measure health care practitioner performance and competence. This hospital policy links up to higher order texts such as the Health Professions Act (2000), provincial professional standards and scope of practice (CARNA, 2003, 2011), and professional guidelines for medication administration (CARNA, 2014a; College of Nurses of Ontario, 2014). The Health Professions Act (HPA) legislation regulates 30 different health professions in Alberta, including RNs, pharmacists, and physicians. The HPA lays out "consistent rules by which all of the professions must provide safe and

competent service to the public" (Health Professions Act, 2000, p. 4). The HPA requires each regulatory body to set professional standards and ensure that registered members meet the standards. Along with legislative mandates, professional standards govern the level of performance that is expected of health providers.

The *Nursing Practice Standards* (CARNA, 2003), set by the provincial regulatory body, is a particularly authoritative text, as the standards are used to evaluate nursing practice and determine the quality of care that patients receive. In the event that the professional regulatory body determines that professional standards have not been met, The College and Association of Registered Nurses (CARNA) is responsible for taking disciplinary action. It is also important to note that the *Nursing Practice Standards* are used as a legal reference to determine whether a member's practice is reasonable and prudent, so these standards provide significant benchmarks for all nurses. For instance, Practice Standard 1.2 directs the RN to "follow current legislation, standards and policies relevant to the profession or practice setting" (CARNA, 2003, p. 2). That standard clearly obligates the nurse to be aware of policies pertinent to her practice (such as the medication transcription policy) and to ensure that her practice conforms to the tightly prescribed behaviour outlined in policy documents.

Guidelines for medication administration also connect into policy development and the practices that are expected of nurses (CARNA, 2014a; College of Nurses of Ontario, 2014). In contrast to the broad, general statements contained within legislation and practice standards, professional regulatory guidelines provide a great deal of specificity regarding the practices that nurses are expected to adhere to for safe, effective medication administration in a variety of practice settings. Medication guidelines

delineate precise practices regarding the prescription, transcription, dispensation, administration, and documentation of medication. For example, the guidelines specified, "Nurses are accountable for validating the accuracy and completeness of the transcription of the order before administering the medication to the client" (CARNA, 2014a, p. 9). Recall RN Violet and her sound rationale for administering a medication prior to the transcription of the order. In this instance, Violet's practice does not hold up to the guidelines for safe medication administration (CARNA, 2014a), and she could be disciplined by the professional regulatory association for her actions in the event of a complaint. However, recall that inside the materiality of Violet's work, giving the medication before it could be transcribed and processed was actually a protective measure, which helped to ensure that the patient did not experience complications of treatment. Violet's decision is supported by her own knowledge of what she needs to do to keep patients safe, and by overarching goals of patient safety and the provision of appropriate care.

Professional conduct process. Nurses are self-regulated professionals and are accountable to the public for their actions. Each individual nurse holds the professional responsibility to ensure that her practice is safe and competent. At the same time, nursing practice is subject to a far-reaching regulatory regime, is closely scrutinized by others, and is ultimately measured against the comprehensive regulatory structure outlined in the previous section. Regulatory frameworks are meant to "promote good practice, prevent poor practice and intervene when unacceptable practice occurs" (Canadian Nurses Association [CNA], 2008b, p. 1). Practice that is judged to be unsafe or that deviates from the accepted standards can result in various sanctions, up to and including the loss

of registration or licensure to practice. Nevertheless, these regulations fail to capture the complexity and unique circumstances in which nursing practice takes place, and adhering strictly to standards is no guarantee of good or safe outcomes. RN Jasmine, a member of the provincial Professional Conduct Committee, which is charged with investigating nursing conduct issues, shared the following comment in an interview:

> We always compare what the nurse did to what a reasonable, prudent nurse would do in the same situation. It's funny that we use those terms though, because lots of times what a reasonable, prudent nurse would do would *not* be to follow the policy. (RN Jasmine, Member of Provincial Professional Conduct Committee)

Health care organizations have a vested interest in ensuring that nursing practice is consistent with regulatory guidelines, practice standards, and institutional policies. They have an obligation to maintain safe systems for patient care, and can be held liable for failing to properly supervise nursing practice (Canadian Nurses Protective Society, 2012). Often this duty falls to the nurse manager, who directs, supervises, inspects, and corrects the behaviour of individual nurses. For instance, Nurse Manager Tammy told me about her work in monitoring nursing compliance with the policy for double signing any narcotic wastage.[7]

> One of the things that I do monitor very closely, because compliance isn't good, is the double signing of narcotic wastage. Pharmacy requires that when I turn in the narcotics book it is complete with signatures, so I make sure that everything has been double signed. I go back and figure out whose signature is there, and who was working that day and so on. There are a few individuals who seem to be worse at it, so then I would track them down and talk to them and say, "You're

[7] Narcotics fall within the category of controlled substances and are closely regulated in Canada. In hospital settings, records must be maintained for audit purposes for a period of 2 years. The record must include the name of the patient receiving the narcotic, the name of the prescriber, and the date and dose of administration. The hospital is obliged to take necessary steps to protect narcotics against loss or theft, so when a partial dose is administered, the excess portion is "wasted" or discarded. The discarded portion is witnessed by two health professionals, to guard against narcotic theft (Controlled Drugs and Substances Act, 1996; Legislation Revision and Consolidation Act: Narcotic Control Regulations, 2009).

> always forgetting to get that second signature for wastage, and it is becoming a performance issue." (Nurse Manager Tammy)

Typically, Tammy managed missing signatures by posting a list containing names and dates, and instructing those individuals named to sign the record retrospectively. "Performance issues" (Nurse Manager Tammy) were addressed privately and individually, first by discussing the problem with the nurse involved, and later by documenting noncompliance with the narcotic wastage rule in the nurses' performance appraisal if the issue continued.

In another example illustrating the way that nursing practice is scrutinized, patients in one hospital unit were asked to complete a checklist assessing nursing practice (see Appendix H). Patients were asked to indicate whether the nurse had followed institutional medication practices for identification, such as checking the patient's armband and spelling the patient's name. The checklist was implemented by the nurse manager in order to improve safety and patient care, as she was concerned that the institutional policy was not being followed. Although it could be completed anonymously, the checklist had space for the patient room number and date. That information allowed the manager to track the nurse assigned to that particular patient and hold her accountable for her medication practices. As I explicate in detail in Chapter 8, nurses routinely use other methods to correctly identify patients, which would not be detected with a performance checklist like this. The main analytic point is that, from outside the materiality of the work, identification practices may be judged to be inadequate when nurses actually accomplish safe and correct identification of patients.

Surveillance becomes even easier within a computerized environment, as there is a permanent record of all transactions that are completed when an individual is logged

onto the system with his or her unique identifier. Every action can be traced back to an individual nurse and the precise moment in time that it was recorded electronically. In an example drawn from an interview in a related research study,[8] a nurse informatician related an incident in which an adverse event resulted when a patient allergy to Demerol was changed to an "intolerance" instead. The nurse informatician described how easy it was to track the record:

> We had to intentionally go into the history, you have to be looking for that. . . . Not everybody might go into the history, but when we are doing an assessment like that review of that incident, we usually do, or try to figure out, you know, what happened. It can sometimes be a legal case. . . . When it is all in the computer we will be able to search out much more readily when we encounter these sorts of issues. So in the case of the Demerol, we could see exactly when and who changed the record. (J. Rankin, personal communication, August 14, 2014)

While the capacity to increase surveillance might be useful in some situations, it is critical to keep in mind that the context is frequently lost when particular aspects of care are documented and that the record that is created does not necessarily capture the multidimensionality and dynamic nature of what was happening in that moment. To return to the example of double signing for narcotic wastage, RN Holly provided a number of explanations that could account for missing signatures.

> There are a variety of things that could happen. Sometimes it's just that there are problems with staff, particularly in emergency where there is only one nurse. The nature of it is that they need that right away, so we don't have time to go and track somebody down to witness the wastage. Labour and delivery is another area where it is very difficult because there are no narcotics there, so we have to come out to the unit, take the narcotic back, so if you waste it there, you have to remember to go back and sign for the wastage. Because you don't usually know

[8] The data were drawn from another IE project, conducted concurrently, by Dr. J. Rankin, which contributed to a broader database of research centred on nursing work. Interview for "How do nurses know their work with patients: An institutional ethnography into nurses' knowing." University of Calgary URGC. I received ethical approval to include Dr. Rankin's data in this report.

> when you sign it out how much you are going to need and how much you will waste. (RN Holly)

The narcotic record simply shows the absence of a signature, which can be tracked back to a particular nurse, and is devoid of context.

Along with the ease and frequency of surveillance comes the potential for practice to be scrutinized even more closely and for variations and violations to be reported. Nursing practice is constantly under inspection by patients, family members, the public, nurse colleagues, nurse managers, and other professionals who interact with nurses. In the legislation that regulates professional practice, jurisdiction to investigate complaints about registered nursing practice is conferred on the provincial regulatory body (Health Professions Act, 2000). A patient, professional or member of the public can lodge a complaint. Once a complaint has been made, the complaints director determines the most appropriate way to address it. The complaints director may encourage the parties to resolve the issue, mediate a resolution, request an expert assessment, conduct an investigation, assess incapacity, order a hearing, or dismiss the complaint (CARNA, 2014b).

During an investigation into a complaint, evidence is collected and examined closely for instances of practice that do not meet professional standards. RN Jasmine explained,

> We look at charting records, and if it's a drug issue we look at pages of narcotic control records, the nurse's notes, wastage of narcotics with no double signature, and things like that. We might have transcripts of conversations of peer interviews but some of that could be hearsay. We also look at the nurses' education and how many times they have offended. And we *always, always* look at the policy and procedure and ask what a reasonable and prudent nurse would do. (RN Jasmine, Member of the Provinical Professional Conduct Committee)

Jasmine emphasized that the disciplinary process is intended to capture patterns of bad behaviour rather than isolated incidents of rule breaking, mistakes, or momentary lapses in judgment. However, the threat of professional sanctions is a significant factor shaping nurses' medication work. Nurses conscientiously strive to meet professional and institutional expectations and are aware that their practice is closely scrutinized, evaluated, and judged. Professional standards are formidable forms of power and authority and function to discipline nurses whose conduct cannot be accommodated within the highly regulated world of medication work. As I began to show in this chapter, the actions that nurses are required to perform to satisfy the regulatory regime cannot always be easily accommodated in the real world of nursing. Consequently, necessary discretionary work emerges.

Summary

In this chapter, I introduced medication work as an essentially textual practice and illustrated how textual practices accomplish coordination and organization of nursing work with medications. Nurses, as expert readers, utilize the MAR to know their patients and to anticipate what will be needed from them. Nurses draw on the knowledge and expertise they have developed through the actual experience of doing medication work, as well as a discursive interpretive frame embedded in institutional texts and formed by institutional policies, professional standards and guidelines, health care legislation, and the dominant ideological formulations of safety and quality.

I also established a number of analytic threads, setting the stage for the analysis to follow. Medication work is a cooperative activity with shared responsibility. Moreover, this work is a complex embedded knowledge practice that is responsive to patients in

unique, frequently unpredictable circumstances. Nurses bear the burden of smoothing over troubles, engaging in necessary discretionary work, and using complex knowledge derived from their experiences to inform their practice of distributing medications to patients safely and efficiently. Nonetheless, the discretionary thinking and knowledgeable work that nurses engage in routinely may be obscured, as nurses attempt to conform to safety and professional regulatory standards. A major consequence of this is that nurses' actual work practices are not always well understood by others. I continue to develop the analytic threads that have been introduced here in the following chapters.

Chapter 5: Medication Work as Discretionary Practice

In the previous chapter I introduced a number of key texts and illustrated how they function to connect people and their actions in predetermined, predictable ways. Texts, and the ruling relations embedded within them, powerfully organize the actions of nurses working with medications and compel standard responses that are common across multiple settings. I also illustrated how nursing practice is increasingly scrutinized for adherence to rules and regulatory frameworks, with a view to discipline nurses. In this chapter, I show how difficult it is for nurses to respond in standard ways, as the nature of their everyday work is anything but standard. I continue to analyze the thread of discretionary responses, introducing medication work as a messy, chaotic process that requires nurses to use discretion in order to accomplish safely and effectively. I use my data to illustrate a number of intricate, diverse, elaborate, and often hidden work processes that characterize medication work. I also demonstrate how the medication schedule is a powerful organizer of nursing work and enters into the decision-making and priority setting processes that nurses use to manage patient care.

Understandings of Nursing Work with Medications

Uncovering hidden work processes. Recall that nursing work with medications is almost universally referred to as *medication administration* in textbooks, policies, regulatory accounts, and the health care literature. I provided a critique of that term, as it does little to reflect the complexity, intricacy, or materiality of medication work. I also noted that more expansive terms such as the "medication use process" (ISMP,[9] 2005b, p. 2) have been coined to reflect more accurately what happens in order to provide

[9] The ISMP is an organization devoted to the prevention of medication errors and the safe use of medications.

medications to patients. Even as broader descriptions of medication work attempt to capture the complexity inherent in it, much of what happens is obscured in these accounts. My understanding of nursing work with medications is broader, derived from my data, and based on the conceptualization of work within IE. This generous approach to understanding work allowed me to shed light on activities that are not normally described as work within institutional representations, yet are intentional activities and require competence to accomplish. To illustrate how an IE analysis can bring the materiality of work into view, I describe the steps of the medication use process (ISMP, 2005b) and show samples of the knowledgeable, material practices that are concealed within this normative way through which to see, speak, do, and think about the work.

There are six broad categories of action in the Institute for Safe Medication Practices' (2005b) depiction of the medication use process, beginning with history taking and assessment of the patient, progressing through prescribing, transcription, pharmacy preparation and dispensing, administration, and ending with documentation and monitoring of the patient (see Appendix I). Hidden within these broad categories of action are actual activities and doings that are not captured in the static description of each stage in the process. For example, the prescribing category is broken down into two discrete tasks: (a) deciding on therapy for the patient and (b) prescribing the medication. In my observations, which were limited to two research settings, I witnessed what actually happens when doctors prescribe a new medication. Once the physician has decided on the appropriate medication therapy for a patient, she or he writes that down in the text Physician Orders and Progress Notes. The medication use process presupposes that the order will be complete and legible. As nurses and other health providers know,

there are many occasions when orders are missing a required component or are unreadable. Unit Secretary Wanda, who does the majority of the transcription work in one of the settings in which I conducted my research, said, "I don't do any interpretation. I just write the order down exactly as it appears. If the nurses need clarification, they can try and get it" (Unit Secretary Wanda).

According to the administrative policy on medication prescribing (Health Region, 2007), it is the responsibility of the prescribing physician to ensure that all written orders are legible and include the following: date and time, medication name, medication formulation, dose, route, frequency, indication for PRN (if applicable), duration (if applicable), and signature. Even though the administrative policy is very clear that physicians are responsible for accurate, complete medication orders, some of the orders are incomplete or illegible and clarification is required before they can be carried out. If the medication use process unfolded as it is represented to (i.e., with legible orders including all of the necessary components), clarification would not be necessary. As I show in the following data excerpt, nurses make a significant but largely unknown contribution to the prescribing work process.

RN Judy was preparing all of the 0800 medications to give to Mrs. Brown, a patient who had been admitted during the night. Judy had five other patients assigned to her that day, and was extremely busy trying to distribute the medications for all of these patients, answer call bells, do some quick assessments, and manage the nursing team. As she read the MAR and gathered the medications that she needed, she came across an order for Mrs. Brown that read "Hormone patch." Judy puzzled over this order, and commented,

> Hormone patch! What is that supposed to mean? What kind of hormone is it? What is the dose? How often does it have to be replaced? I'll have to go and try and see if I can find any more information about it on the chart, or maybe from the patient. And the doctor was just here, but I think he's gone now. I'll have to try and call him to get this figured out. (RN Judy)

Judy walked from the med cart stationed in the hallway next to Mrs. Brown's room back to the nursing desk so that she could check the chart for the original physician order. Judy checked Mrs. Brown's chart for the hormone patch order, as well as another chart for a different order that required clarification. No additional information was available on the chart to help her with the hormone patch order. Next, Judy walked back to Mrs. Brown's room to ask her if she knew anything about the patch. Mrs. Brown was unable to provide any information, but Judy did get the name of her community pharmacy and called them. However, because it was a Sunday, she was unable to reach the pharmacy. Finally, Judy called the physician (who was not on call) and left a message for him to call back about the hormone patch. Frustrated that she could not be certain about that particular medication order, and could not administer the hormone patch, Judy wrote two notes—one to the physician explaining what clarification was needed and another to the nurses who would follow Judy and question the order just as she did; she provided this second note so that her colleagues would be aware of the steps that she had already taken in her attempts to resolve the problem.

This example illustrates how nursing work is concealed in the simple description of the prescribing step in the medication use process, generally thought to be strictly physician work. Judy contributed a great deal to the prescribing process by investigating (i.e., checking the original physician order, interviewing the patient, calling the pharmacy, and calling the physician), alerting others (calling to leave messages with the

pharmacy and physician and writing notes to the physician and other nurses), and waiting (allowing time for phone calls to be returned). These activities are not generally considered to be work and are covered over by ideological accounts of the medication use process, yet they are intentional efforts that require time, competence, and knowledgeable activity. An IE lens revealed these hidden work processes and helped to uncover the unique contributions that nurses routinely make to ensure that medication orders are complete, an important component of patient safety. New medical technologies such as electronic prescribing are meant to fix the problems of incomplete or unclear orders, as they "force" the entry of all required data before the order can be transmitted. However, electronic prescribing creates separate problems, and can activate other time-consuming and often unanticipated work processes by altering the normal division of labour among physicians and nurses (Ash et al., 2007; Maslove, Rizk, & Lowe, 2011; Strom et al., 2010). Currently, electronic prescribing is not available within the study settings where this research took place.

In the ISMP (2005b) illustration, the next step after prescribing is for the order to be transmitted to the Pharmacy department. Before this can happen, however, a number of other activities occur. Someone must read the physician order before it is activated, or before the activities the text intends can take place. The institutionally endorsed process for notifying others of a new order involves flagging the chart by raising the appropriate plastic tag on the front cover. Physicians are well aware of the need to alert a nurse or unit secretary to the presence of new orders and have developed other systems of communication to ensure that their orders are seen. For example, on many occasions I observed a physician stop and communicate new orders to a nurse in the hallway, search

out the charge nurse and tell her about the order, or place the chart in a particular location on the nursing desk (an implicit cue to knowledgeable people) so that the order could be activated quickly.

Unit Secretary Wanda is one of those knowledgeable people. She knows the usual times that physicians arrive to see their patients, watches the activities of doctors closely, notes when they are on the unit seeing patients, and when they leave. As they leave, they drop off patient charts on the nursing desk. Some of the charts have new orders written on them, some have progress notes, and some have no new notations at all. Wanda notes when physicians return charts to the desk where she works, and immediately scans the order sheets to see if new orders have been written. If there is an order related to medications, Wanda removes one of the duplicate copies of the order sheet, and places that copy in a slot on her desk that is labeled "Pharmacy." She does this right away so there is no delay in the transmission of new medication orders and so needed medications can be supplied to the unit as quickly as possible. Unless there is a STAT[10] order, which requires immediate action, Wanda then places the chart in a specific location on the counter above her (to her left), as a reminder that there is a new order that needs attention; she then processes the new orders when she can accommodate that work into the flow of her shift. Wanda explained that she also informs the assigned nurses of new medication orders, even if they may already know about them:

> Most nurses will come to the front and check for new orders, or will have already talked to the doctor. I just say, "Do you know about this?" so that they can give the drugs right off, without waiting for me to be done. (Unit Secretary Wanda)

[10] An abbreviation for the Latin term statim, meaning immediately.

Pharmacy workers are also aware of the times that are customary for doctors to see patients and expect most new medication orders to be written within a loosely predictable timeframe. In one research setting, I observed Pharmacy Technician Carol arrive from the Pharmacy to check the slot at the nursing desk hourly from 0900–1200. Wanda explained that because the Pharmacy department has new orders in hand every hour, pharmacists can ensure that medications are dispensed from Pharmacy onto the nursing unit in a timely manner. Wanda also explained that if an order were urgent or if there was a pressing need, she would notify the assigned nurse and call the Pharmacy department directly and immediately. None of these activities can be seen in the collapsed, static, step-by-step illustration of the medication use process, which merely shows that medications are prescribed and that orders are transmitted to Pharmacy. The examples of knowledgeable activity provided here offer a mere glimpse of the many hidden work processes that occur in everyday medication work, and the collective activity that serves to accomplish it.

Medication work: A multifaceted work process. Just as there is a rich field of activity obscured beneath the ideological description of it, medication work does not always unfold in the individuated, step-wise fashion in which it is depicted. My data illustrate that medication work is not a linear process; instead, it is an inherently messy and multifaceted work process that encompasses the many ambiguities, complications, and contingencies that characterize everyday nursing practice. Medication work is global, collective, circular, integrated seamlessly into other work, distributed diffusely over time, and embedded within other work. To provide an illustration of how medication work unfolds differently from the step-by-step depiction of it, I describe an instance drawn

from my data that typifies what nurses actually do to navigate the contingencies of their everyday work.

Judy, an RN with 19 years of experience, arrived at work at 0705, 10 minutes early for her 12-hour day shift on a Saturday in a small acute care hospital. After she received the reports on the patients she was assigned to care for on the surgical team, Judy walked directly to the med cart that was designated for her team and wheeled it down to the end of the surgical hallway. She quickly flipped through the med book and scanned the MARs for all of the patients on the team, her own patients as well as the patients for the LPN whom she was working with. Judy scanned all of the regularly scheduled and PRN medications that were ordered for each patient so that she could complete her patient assessments with this information in mind and anticipate what might be coming up during the day. Judy scanned the LPN's MARs because she knew that she may have to administer the more complex or any IV medications that were ordered for these patients. She noted that there were three IV medications scheduled for 0800, walked back to the centrally located medication room to obtain all of the supplies to prepare those three medications, and walked back to the cart. After preparing and initiating the three IV medications and signing the MARs to indicate that they were administered, Judy returned to the med cart, opened the med book again, and flipped to a section for one of her patients. She read the MAR, opened the corresponding patient drawer, and retrieved the medications that were to be given at 0800. Judy quickly and efficiently checked each label, compared the label to the MAR, opened each package, and placed the medication in a small paper medication cup. She repeated this process with each medication until all of the medications scheduled for that patient for 0800 were in

the cup. Judy noted that the patient has a long-acting narcotic analgesic ordered once a day, and said out loud, "She only has this ordered once a day. Now why is that, I wonder? She should be getting it twice a day, so that she gets continuous coverage for her pain." Judy entered the patient room, said good morning, and told the patient that she had her medications ready. Judy handed the paper cup to the patient with a glass of water. After the patient swallowed the medications, Judy asked, "Is your long-acting pain medication working for you? Do you have pain later in the day or during the night?" The patient told Judy that she has very good pain control for most of the day, but sometimes she has some pain during the night. Judy encouraged the patient to mention this to her doctor, left the room, and jotted a reminder note so she would remember to mention this to the doctor later on.

Judy returned to the med cart, turned the med book pages to the next patient, noted that the patient had a medication scheduled for 1100, and placed a little sticky tab on the page as a cue to herself so she did not forget to give this medication later in the morning. Judy started to prepare the medications for the next patient who was admitted a few hours earlier, but came across a medication that she did not recognize, called toloxin. She looked in the patient's medication drawer, but because there is no pharmacy coverage on the weekends, no medications were dispensed, and there were no medications in the drawer. Judy walked back to the nursing station to look the medication up in a reference book. As she approached the desk, her colleague RN Sam said, "Do you see this?" He pointed to a small computer screen that showed the heart rhythm of a patient in the constant care room. Sam asked Judy to have a look at it and verify his own interpretation of the heart rhythm. After she did this, Judy found a medication book and

attempted to look up the medication toloxin. It was not in the book, so she swiped her identification card to enter the medication room to access the *Compendium of Pharmaceuticals and Specialties* (Canadian Pharmacists Association, 2013) that is kept there. Toloxin was not referenced in there either. Judy said, "I am almost positive that this is the same as digoxin, because the dose is 0.0625, and the only drug I know like that is digoxin." Judy proceeded to call the pharmacist in another centre nearby who was designated to be on call. The pharmacist verified that toloxin is the same medication as digoxin. Judy returned to the medication room, swiped in, and looked on the stock shelves for toloxin or digoxin. There was none. She then obtained the key for the pharmacy night cupboard, entered, and found the medication that she needed. Judy took a supply of toloxin, signed it out in the inventory control book, and left. She returned the key and went back to the med cart to finish preparing the medications for the patient.

LPN Marcia was at the cart and asked, "How would you interpret this order?" She pointed at an entry in the MAR. Judy looked at it and read aloud, "Hold morphine." Marcia then said, "Do you think that would apply to PRNs as well as her regularly scheduled morphine?" Judy answered, "Yes, it would. Don't give any morphine at all to that patient." She then continued preparing the rest of the medications for her patient and entered the room with the paper cup of medications. Once in the room, the patient asked for help to the bathroom and told Judy that he needed to have his teeth in before he could eat breakfast or take his medications. Judy walked the patient to the bathroom and helped him to wash up at the sink. She assisted this patient in his room for approximately 15 minutes.

Judy returned to the hallway and heard a patient with terminal liver cancer moaning softly. The patient's daughter was at the bedside and told Judy that her mother had been restless for almost 30 minutes now. Judy checked the bag of narcotics that was continuously flowing to manage the patient's pain to be sure it was not empty and checked the screen on the IV pump to ensure it was running at the right rate. She tried to talk to the patient, but did not receive a response to her questions. Judy continued her assessment, gathering what information she could through observations, and asked the patient's daughter to describe what she has observed while sitting with her mother. Judy's assessment revealed that the patient's pain was no longer being managed at the current infusion rate. Judy hurried to the desk to check the physician orders and discovered that although the narcotic dosage has been ordered as a range, the patient was already receiving the highest rate ordered. Judy also reviewed the chart to find out how long the patient had been receiving the highest rate of narcotic, how effective it had been, and what other interventions had been effective. At this point ten minutes had passed since Judy discovered the patient in pain, and she felt some pressure to manage it. It was 0900 and she still needed to dispense 0800 medications for one more patient. She called the on-call physician, provided the doctor with pertinent information and recommendations, and received an order to increase the rate of the narcotic. Judy hurried back to the room to increase the rate of the narcotic infusion, and then returned to the med cart to finish preparing her 0800 medications.

In this description of a nurse's medication work, the reader can begin to glimpse the complexity of the social organization within which medication work happens and medication knowledge is activated. Judy's work in preparing and administering

medications did not happen as it appears in abstracted, theoretical formulations—as smooth, trouble free, and linear. Nurses do not practice in laboratory or controlled settings. Instead, they are situated in the messiness of the everyday world, and their knowledgeable medication work is integrated seamlessly into the broad terrain of nursing work that unfolds simultaneously. Troubles such as inadequate pain management, missing medications, lack of pharmacy coverage, inconvenient storage of medications and supplies, pressing patient needs, requests of co-workers, malfunctioning equipment, incomplete physician orders, and a multitude of other difficulties routinely arise, demanding urgent attention. Similar to the previous example, Judy's experiences revealed the intricate, diverse, and intelligent actions that comprise medication work, as she searched (located the medications and supplies needed to administer the medications that were ordered), verified (accessed resources and gathered information to verify the accuracy and appropriateness of medications), assessed (gathered information to determine the efficacy of ordered medications), alerted others (called the physician), prepared (assisted patients with personal hygiene activities so they were comfortable and able to take ordered medications), consulted (acted as a resource to less experienced team members), and so on.

Other work is repeatedly interjected into systematic medication work as the nurse's attention is frequently and repeatedly drawn to other labours. These pressing demands are often referred to in the dominant discourse as interruptions or distractions, and are to be avoided as they are believed to result in higher rates of medication errors and compromise patient safety (CARNA, 2014a; Potter et al., 2014; Raban & Westbrook, 2014; Westbrook, Woods, Rob, Dunsmuir, & Day, 2010). Although medication work

would certainly be less problematic without disruptions, it is simply and fundamentally the work that is demanded of nurses: circular, contingent, responsive, and rooted in the needs of others. By virtue of their embedded place in the environment and the intimate point of contact with patients, nurses are compellingly caught up in the moment-by-moment happenings, and use their specialized knowledge and discretion to respond to what is happening. Their knowledgeable actions, rooted as they are inside the everyday world, accomplish medication work safely and effectively.

The Medication Schedule: Race Against Time

The importance of time in today's health care environment. The health care practice setting is very different today than it was even 10 years ago. The current environment is characterized by volatility, chaos, uncertainty, and rapid, unrelenting change (Canadian Health Services Research Foundation [CHSRF], 2005; Kramer et al., 2013). The hospital patient population is more complex, more acutely ill, and people stay in hospital for shorter periods of time, compressing the opportunities that health care providers have for interactions. The pace of work is fast, frantic, and subject to the ever-tightening constraints of the high demand milieu. Restructuring, regionalization, with the move to fewer clinical managers, chronic understaffing, and the widespread acceptance of the efficiency project all contribute to the significant changes that are occurring in the practice environment (CHSRF, 2005; Kramer et al., 2013; Melon, 2013; Rankin, 2009).

As health care organizations begin to industrialize with standardization, efficiency, and cost control as the bottom line, time, like other scarce resources, has become a precious commodity. "As organizational employees, nurses are expected to complete their work assignment efficiently to support the goal of positive profit margin.

The emphasis is on standardization and efficiency and time is a resource that costs money" (Jones, 2010, p. 186). Time is being progressively squeezed, as additional demands are placed on workers to do more with the same or fewer resources. Productivity is expected to increase, and the use of time is monitored in attempts to ensure maximum efficiency (St-Pierre & Holmes, 2008).

The centrality of time in medication work. Time is a central feature of medication practice and enters into the work in two important ways. First, the institutional rhythms and cycles that structure the everyday world of nurses act in order to tightly program medication work. Medication administration schedules generally reflect institutional priorities rather than nursing or patient care priorities. Institutionally timed events such as the routine work hours of nurses, the hours of operation of ancillary departments, and regular meal times all influence nursing care. For example, patients may be awakened at certain times based on the delivery of the breakfast tray (important to the medication schedule because some medications must be planned around meals), calls to the Pharmacy department may be delayed to coordinate with their hours of operation, and so on. Additionally, medication work is essentially a cooperative, shared responsibility with other members of the health care team. The timing of actions of each care provider affects every other team member who is involved in the work. Physicians arrive to see their patients at unpredictable and varying times, writing new medication orders or changing existing orders, not necessarily in sync with the timed medication schedule. Delays in one area (e.g., lags in dispensing medications from Pharmacy) create a domino effect and result in delays in subsequent work processes.

Institutionally arranged events are intended to normalize and standardize an unpredictable practice environment, making it more manageable and controllable. People who make decisions about institutionally timed events may not fully appreciate all of the implications that result for nurses and other practitioners whose work is impacted. While nursing work benefits from systems that order their work processes, the managerial control that is exerted onto nurses' work arises in highly contradictory and often inconspicuous ways. The effectiveness of systems that have been introduced to streamline and standardize nursing work must be critically examined for how they control what nurses do and when they do it.

As nurses have little discretionary power over institutionally timed events, they are often faced with challenges such as overlapping demands on their time. Nurse-to-nurse handoffs (reports), medication administration, physician visits (rounds), and direct patient care needs can all occur at the same time. In such circumstances, nurses make decisions about how to best organize their actions and manage their work pragmatically, including dropping activities that are not stringently monitored by the institution. This is the second important way that time enters into nursing medication practice. The institutional focus on time has a powerful influence on what nurses actually do in their everyday practice. As they attempt to be "good" nurses, they make choices about their practice that from the outside may appear to be counterproductive or even unsafe. Inside the work, however, nurses are quietly engaged in discretionary work, performing thoughtful and knowledgeable actions that keep patients safe and can be accommodated within the real world of nursing.

The medication schedule as an orienting device. Medication schedules and the activities that they demand set the pace in hospitals and act as prime orienting devices for nurses. The timed schedule on which medications are to be administered provides the basis that underpins much nursing activity. Nurses are keenly and continuously aware of times that medications are scheduled for, and they structure their workday predominantly around that timing. Although the medication schedule provides organization for what nurses actually plan to do, the structure changes, fluctuates, and varies as the workday progresses. RN Karen explained how her scan of the med book gives her a general sense of the demands that she will have on her time for that particular shift, and how she uses that to help plan her day:

> I scan my times to see how many 8 o'clock meds I have. I just kind of get a general overview of like, "Wow. That's going to be a busy day," or "You know, it's not much." I scan all the times, and make a mental list. (RN Karen)

In my observation of RN Barb, I noted that she also scanned the med book when she arrived onto the unit, following the evening report. I observed as she went to the med book and located the MARs for all of the patients that she would be caring for that evening. She looked at each MAR quickly, and jotted notes onto a sheet of paper that she is carried in her pocket. This sheet of paper had her patients' names on it along with information that she had deemed to be most important to her care. Barb wrote down the times of the medications that she would be administering to each patient alongside the name and used the information to schedule her shift: "I am looking ahead to see what medications I need to give because that is my entire shift" (RN Barb).

The timed schedule for medication administration is tightly regulated through policy statements that direct medication administration to occur within a certain

timeframe and through assigned standardized administration times. Assigning standardized times is part of the work of the person who is processing new medication orders. In one observation, I watched as Unit Secretary Wanda processed orders and assigned times according to the information contained within the physician order. Once daily medications were scheduled for 0800, twice daily medications were scheduled for 0800 and 2000, and so on. Wanda had a small typed note that she could refer to if needed, but she had the standardized times memorized and did not need to refer to it. She did not know how the times were determined, just that "it's how it's done" (Unit Secretary Wanda). Nurse Manager Tammy was able to shed light on how times were determined and why it is important to cluster administration times:

> Those standard times come from Pharmacy and the Zone [referring to a certain geographical area]. The standard times are really a nursing efficiency, so that you aren't going around all of the time giving meds at all hours. Even as it is now, the standard times are 0730, 0800, 0830, 0900, and then typically you won't see a lot given until 1200; ventolin [is] at 1000, but you know it's really just to decrease the number of med rounds. It's a balance between patient centred and nurse centred. (Nurse Manager Tammy)

Pharmacist Patricia clarified further and said that the medication times are site specific and determined by each pharmacy in consultation with others stakeholders, including those in nursing. In the research settings, the nurse managers were consulted about medication times rather than nurses in direct practice. Patricia maintained that the standardized times are meant to fit smoothly with the work schedules of other practitioners and should "make sense" (Pharmacist Patricia).

Although the standardized times are very well intentioned, and are meant to make sense in the organization of nursing work, there are times when the scheduled times

actually hinder work. LPN Nadine described how problematic the standardized times can be for her work:

> I have no idea why the morning medications are ordered for 0800. I just know it would make more sense for nurses to have it at 0900. We don't get out onto the unit sometimes until 0800, and all of the medications are already due. And people are still in bed and breakfast trays are coming. (LPN Nadine)

This illustrates the difficulties that can arise when processes are imposed from outside the work, without robust input from nurses in front-line practice. Meant to accomplish efficiency, standardized times can instead create pressure to get the work done, particularly at certain times of the day when medication work is clustered.

Due to this blind standard, in which all medications are treated equally within the institutionally created schedule, and the focus on timeliness, there is minimal flexibility and little room for nurses to exercise discretion. Ingrained in all nurses, beginning in their basic educational programs, is the notion of how important it is to give medications according to the "five rights" (Kron, 1962, p. 62) of medication administration. Also known as the "golden rules" (McGovern, 1988, p. 34), giving medications at the right time is one of the five rights, along with right patient, right medication, right dose, and right route. According to this dictate, nurses are obligated to administer medications on time, generally considered to be within 30 minutes before or after the scheduled time ("CMS 30-minute rule," 2010; Perry & Potter, 2009). For example, if a physician ordered a medication to be given at 0800, health care administrators consider it to be acceptable to administer that medication anytime between 0730 and 0830. In light of medication and regulatory standards, administrators and health care leaders judge medications given outside of the accepted parameters to be administered in error. The creed of timeliness is pervasive in the literature and is enshrined within policy and practice guidelines

(CARNA, 2014a; Health Region, 2009b; Hughes & Blegen, 2008). Medications prepared and administered outside the times specified in policies are often accounted for as errors in research studies, and are not distinguished from other errors such as the failure to use aseptic technique or administering a drug to the wrong patient (e.g., Westbrook et al., 2010). Policies and procedures around acceptable time parameters may vary (e.g., some practice settings allow 60 minutes leeway), but the consequence of the powerful golden rules discourse is that nurses are very conscious of time and are perpetually attuned to the clock.

A predicament is created in which it is rarely possible for nurses to meet the requirements of the tight medication schedule, as simple logistics and overlapping demands prevent nurses from being on time when trying to administer multiple medications. Medication work is embedded in the messiness of the real world, in which demands are extremely high, bells are ringing, patients need help to get to the bathroom, doctors are phoning to give new orders, and the list continues on. Medication work is not a discrete task that can be compartmentalized and completed without disruption. As LPN Brenda explained, it simply is not always possible to keep to established timeframes:

> Realistically you can't get the meds done within that time frame. It took me 15 minutes just to do that one patient's, because there's just so much going on in the morning. Everyone is like, "I need help with this," you're busy with that for 10 minutes, and then that's 10 minutes from doing meds that you don't have. (LPN Brenda)

Brenda's statement, "that's 10 minutes from doing meds that you don't have," reveals the reality of how distributing medications within the timed schedule shapes nurses' consciousness. Even though Brenda's focus on "getting meds out" doesn't necessarily override other patient wants and needs in the moment, she feels at an

impasse—that the time spent in other kinds of patient care is time that she does not have to spare.

In addition to time constraints, there are important operational constraints as well. Recall how the unit secretary coordinated her work so that scarce resources such the med books housing the MARs could be shared. Other resources in high demand are the med carts. Med carts were intended to be mobile, so they could be transported from room to room to provide easy access to needed supplies. Mobile med carts are marketed as tools to ensure safe and efficient medication procedures by streamlining processes, improving workflow, reducing medication errors, and minimizing interruptions (Omnicell®, 2013; Rubbermaid® Health Care, 2013; Tsai, Chaung, Chou, Liu, & Shih, 2009). However, in both research settings, the carts were generally parked in one spot in the hallway or left in the medication room at the centre of the unit so that many people could access them simultaneously. Nurse Manager Tammy described how this process has evolved:

> We don't ever, ever, ever take med carts into patient rooms. One of the downsides to doing that is that Nurse A is busy with the cart with one patient, so then no one else can access the cart. Our carts now have a very large amount of stock meds on them so they're not just individualized to that one patient. They have narcotics on them. Back in the olden days when we had one nurse providing meds for the entire unit, taking them into patient rooms would work. But that's not how we work anymore. That isn't patient-centred care. (Nurse Manager Tammy)

As nurses have similar workload demands, including the responsibility to administer medications scheduled for the same time, competition for resources is a persistent work constraint:

> On days there are a lot of people wanting to get to that cart, for various reasons. The mornings can be really rushed because you have the doctors coming up, and there are new drug orders to be processed, and the unit secretary wants the med book. The charge nurse probably wants it because the doctor wants to go through what the medications are. You prioritize constantly about who takes their turn at the med cart. (RN Karen)

It is impossible for three people to work at one med cart at the same time, so nurses have developed a highly choreographed process to allow their work to flow as smoothly as possible under such competitive conditions. The person who is assigned to go on first coffee break has first access to the med cart, the person on second coffee break has the right to use the cart second, and the person on third coffee break uses the cart last. This finely tuned process allows each team member to have priority time at the cart, although norms allow for interruptions in instances when high-priority needs arise. RN Karen explained,

> The first thing we do is a round. And then that's the next thing, is that everybody heads to the med cart. And if there's something pressing that we found on our round, that would be dealt with first. [If a] patient needed pain medication or something, that would be whoever's patient that was, they get first shot at the cart. And then the next question is who's on first break, because first break is 0830, and you have very little time to get a lot of work done before 0830, and if you don't take your break on time, it screws everything up. You're either going to be short or it puts everybody else behind, because we take three breaks, and like third break coming back from coffee is not very long before first is going for lunch. (RN Karen)

All of this delicate manoeuvring entails a great deal of coordination with other nurses and health care workers.

Due to the rigid schedule, the difficulty involved in accessing key resources, and the overriding drive to complete medication work within tight timeframes, nurses have developed strategies to manage the quandary as best they can. In one observation, I watched as LPN Brenda approached the med cart that she was sharing with the other people on her team, and I saw her take some MAR sheets out of the med binder. She also removed one of the medication drawers and took the drawer and MAR sheets into a patient lounge. At this time of the morning, the patient lounge was quiet and no patients

or family members were there. Brenda sat down and organized the MARs and drawer on a coffee table in front of her. She commented,

> I'm not sure if we are supposed to be doing this, but some of us do because it makes it so much easier. I haven't seen a note about it, so I assume it's okay. I know it was brought up at a staff meeting. (LPN Brenda)

This creative strategy allowed Brenda timely access to the resources she needed to accomplish her own work and did not interfere with the work of other nurses. Reflected in her comments was the recognition that removing the medication drawers from the cart and setting up a workspace in a public area of the hospital unit was risky and unlikely to be sanctioned by the administrative team. That is because the medications cannot be locked up or secured as they can be on the cart and could be taken or tampered with if they were left unattended out in the open. Removing the MARs from the binder is also a precarious practice, as they could be misplaced, lost, or filed in the wrong section of the binder when returned. Any of those occurrences could result in a missed medication dose or other error. Although none of these potential problems developed in the instance that I observed, Brenda's work process is simultaneously risky and prudent.

Working around the medication schedule. Although the medication schedule dominates nurses' thinking, in the observations I made, medications are commonly administered outside of the institutionally determined "correct" time. Faced with multiple patients, numerous responsibilities, and competing, simultaneous demands on their time, nurses worked around the medication schedule. They made thoughtful decisions about what medications were clinically important to give according to a precise timeframe, and ensured that those were administered promptly. They also made thoughtful, knowledgeable decisions about which medications could be delayed until higher priority

tasks were accomplished, and administered those when time allowed. RN Karen explained,

> I guess it's just experience. Like, we have a lot of patients who are on long-acting morphine (a narcotic analgesic), right, so if they are on MS Contin [a long-acting morphine], that 8 o'clock dose is important. That really shouldn't be given at 10 or 11. We wouldn't wait with that. You try and get as close to the time as you can for specific things. Blood pressure medications, digoxin [a heart medication], anti-emetics [drugs to treat nausea] are important to have on board when they are on a schedule. Those are some of the things that just pop into my head. (RN Karen)

LPN Brenda also described some of the factors that guide her decision making around the medication schedule:

> It depends on what the pills are. I mean, if it's something that that person is having every so many hours, then yeah, it becomes a big problem if they haven't had their 0800 pill until 0900, because they have another one coming at 1200. In that situation, you'd probably go to Riskpro [the system that is used to report errors] and just do up an error report, and just say, "This didn't happen until then," and give the reason for it, and that might even help us out. . . . If it's a one-time-a -day med and it's supposed to be at 0800 and it's given at 0845 or ten to nine then I'm not as concerned about it. So maybe that's kind of a lax attitude, but I mean. . . (LPN Brenda)

Embedded within these examples are the criteria that nurses use to guide their decision-making processes, including factors such as the acuity and complexity of patient needs, the degree of patient comfort or discomfort, the frequency of medication administration (e.g., every 4 hours versus every 24 hours), the timing required in relation to food intake, laboratory work, as well as other medications, anticipated clinical outcomes, the pharmacokinetics of the medication (such as onset and duration of action), and other patient needs.

Nurses viewed medications as a high priority task in the instances that I observed. Nurses delayed or even dropped activities that were less stringently monitored institutionally or deemed to be less important at that particular moment, such as providing

assistance with meals, bathing patients, completing dressings, and so on. LPN Brenda described the difficulties that are created for her and for patients because she is immersed in completing her medication work:

> It's frustrating when you are trying to get your pills done, and your patient says, "I want this," and you know what? I know you want this, and I would love to help you with it, but I need to do this first. I hate having to say that to a patient. I hate having to say, "I know you need this, but can you just wait until I get my pills done?" Like I haven't had a chance to listen to everybody's lungs and that's important. . . . And this morning when I was trying to do my meds, and there was a bell ringing across the hall, and I was like, "I know I should answer that but I need to do my pills, and that's not my patient, and they're not screaming, so they're not on the floor," so you let them wait. And you know that maybe it's not the best approach because when a bell is ringing you should answer it. You have enough distractions with your own people that pretty soon it's 0900 in the morning and you haven't got anything else done. (LPN Brenda)

Nurses also shifted tasks from hectic times, when much activity was clustered (such as when the unit is first waking up), to less demanding times, compressed tasks, and took shortcuts, essentially banking time for later. This all creates tension and guilt for the nurse caught up in the work of dispensing medications on time.

Interestingly, I observed many occasions when nurses "repaired the record" by documenting "on time" medication administration (by placing their initials in the ordered time slot), even when it was delayed beyond the allowable 30 to 60 minutes. According to policy, if a medication is administered more than 60 minutes before or after the scheduled time, the actual administration time and the reason that the medication was given early or late must be noted in the MAR (Health Region, 2009b). Instead of recording the actual time and reason for late administration, on many occasions the nurses I observed simply initialled the MAR without adding in that detail.

Routine initialling may be a function in part of the way that the MAR works, as it controls the type of response that is allowed. Recall the format of the MAR, with the

times designated for each medication, and the small predefined text boxes that demand a particular response (the nurse's initials in this case), that verifies that the medication was given at the ordered time. There is simply not enough room to legibly document the actual time of administration and explain why there was a deviation. A second explanation is that when nurses make conscious decisions to change the time of administration of medications, they do not record the specific time because it is not viewed as clinically significant or important to nursing or patient care outcomes. LPN Brenda provided this explanation when she commented that she "isn't concerned" about on-time administration if it is a once-a-day medication, as she is exercising sound clinical judgement. A third explanation was detectable in LPN Brenda's reference to a "lax attitude" about late administration of some medications. She is aware that she must administer medications on time or record it properly in order to adhere to the policies and standardized procedures governing medication work. She is also aware that her strategy of delaying administration of some medications is a well-thought-out decision that makes sense in the context of her daily work. The major consequence of repaired records is that a documentary reality is created that does not reflect what actually happened in the setting. In the textual reality that is produced, medication work appears to unfold smoothly, in a step-wise fashion, just as it is represented ideologically. The rich tapestry of work, thinking, and knowledge is obscured within this virtual world.

Summary

Medication work is essentially a messy, contextual, ambiguous, multifaceted pursuit that can be challenging and problematic. Conversely, medication work is directed by policies, professional guidelines, and standard processes that are sometimes difficult

to realize in such an environment. For instance, blind standards around the medication schedule have unintended consequences, and may force creative, reasonable, but covert work practices. Nurses who engage in work practices that are not authorized by institutional policy take the risk of being judged unsafe. The ISMP warned, "Many nurses find it difficult to administer medications to all their assigned patients within the 30-minute timeframe. This sometimes causes nurses to drift into unsafe work habits" ("CMS 30-minute rule," 2010, p. 1). I argue that while some of the covert work practices developed by nurses may run the risk of being unsafe, many of them demonstrate sophisticated judgement and are well-thought-out adaptations to rules or processes that simply do not work in the embodied world of nursing real people. Nurses are quite successful in stabilizing the inherently chaotic hospital environment, essentially "holding together and coordinating the threads and shreds of several lines of action" (Smith, 1987, p. 66) in order to ensure the smooth and seemingly effortless unfolding of medication work. In the next analytical chapter, I continue to build an account of standard work processes as they relate to medication work and the everyday discretionary work that nurses undertake.

Chapter 6: Standardization and the Discursive Construction of Rules

In Chapter 2, I introduced a selection of literature establishing patient safety as a high-priority concern within health care today. I continue to examine the literature here, concentrating more specifically on medications and how the discourses of safety and risk influence the construction of rules meant to make medication work safer.

In today's hospitals, ideological accounts of quality and safety dominate health practitioners' thinking about how to work with medications and impose activities that reinforce and support those formulations. Medication work is understood as an inherently risky activity, and standardized policies and procedures attempt to manage risk and tightly control the processes that are employed when working with medications. The term standardized implies the rules that have emerged are uniform and are meant to be applied consistently and universally, regardless of the circumstances. Constructed far from the bedside in the abstract realm of safety and quality, standard rules are stripped of context and isolated from the complex and poorly understood work of nurses. While seemingly logical and rational, standardized rules simply do not always work the way they are meant to in practice. Nurses work in settings characterized by variation, unpredictability and unrelenting change, making it difficult and time consuming to accommodate inflexible processes imposed by standardized policies and procedures. In this chapter, I provide evidence to demonstrate that it is virtually impossible for nurses to follow the rules while simultaneously producing safe, competent patient care. Nursing knowledge is situated, and the critical decisions that nurses make in the moment, considering all of the information at hand, are largely responsible for keeping patients safe.

Medication Work: Compelling Discourses of Safety and Risk

The safe use of medications is of particular interest within the patient safety movement, as medication errors are reported to be widespread and responsible for actual and potential harm to patients (Keers, Williams, Cooke, & Ashcroft, 2013). Within the patient safety literature, medication errors are one of the most commonly used proxy measures, along with mortality rates, wrong-site surgery, injuries due to restraint application, falls, pressure ulcers, and infection rates (Brady, Malone, & Fleming, 2009). The patient safety research literature investigating medication errors has placed particular focus on determining how often errors occur (Bohomol, Ramos, & D'Innocenzo, 2009; Ozkan, Kocaman, Ozturk, & Seren, 2011), who or what is responsible for the error (Brady et al., 2009; Chang & Mark, 2011; Joolaee, Hajibabaee, Peyrovi, Haghani, & Bahrani, 2011), and how errors can be prevented (Conrad, Fields, McNamara, Cone, & Atkins, 2010; Harding, 2012; Nguyen, Connolly, & Wong, 2010). However, "despite numerous research findings, we cannot estimate the actual rates because they vary by site, organization, and clinician; because not all medication errors are detected; and because not all detected errors are reported" (p. 4). These authors also concluded that the difficulties with measuring and reporting errors make it challenging to know if safety strategies are having meaningful impact (Hughes & Blegen, 2008).

The increasing preoccupation with risk in medication work is a thread that is particularly pervasive within the patient safety literature. Anderson and Webster (2001) claimed, "Administering medications is probably the highest-risk task a nurse can perform and accidents can lead to devastating consequences for the patient and for the nurse's career" (p. 34). The threefold message is clear: medication work is perilous, it can

be extremely harmful to the patient, and it may result in disciplinary measures for the nurse (Anderson & Webster, 2001; Elliott & Joyce, 2005). From nurses' earliest educational experiences, the act of giving medications to patients is framed as hazardous, with potentially catastrophic outcomes. A typical chapter in a fundamental nursing text, meant to prepare beginning nursing students to work with medications, will begin by citing the Institute of Medicine study on adverse events and the number of people who die each year in hospital due to medical error (Perry & Potter, 2009). The introduction of a workbook focused on safe medication administration cited the same study and reinforced the message that "one of the greatest responsibilities you will have as a nurse is administering medications" (Przybycien, 2005, p. 31). As the core message of risk and danger is reinforced over and over again, it becomes a key thread in the discourse organizing medication work. Medication errors, issues of harm to patients, and blame for harm are inevitably raised when medication work is perceived as inherently risky (McDonald et al., 2006).

Mounting evidence indicates that the vast majority of medication errors are not clinically significant. A report by the global Institute for Healthcare Improvement estimated that 90–95% of all reported errors cause no harm to patients (Griffin & Resar, 2009). Findings from a recent study demonstrated that not only are the vast majority of medication errors innocuous, minimal harm to patients is achieved in part because of the vigilance of nurses in taking action when an error is discovered (Johnson, Tran, & Young, 2011). The careful monitoring and close attention that nurses provide work to minimize the harm to patients that occurs as a result of inevitable mistakes in the medication process.

In spite of the important protective work that nurses accomplish, Treiber and Jones (2010), in their interpretive analysis of 158 accounts of nurses' self-described medication errors, discovered that even a minor error such as administering a vitamin to the wrong patient elicited feelings of devastation and terror. The researchers discovered six key symbolic themes in nurses' accounts, including "devastating reactions, . . . dealing with fear, . . . [and] lessons learned" (Treiber & Jones, 2010, p. 1331). In the study, the researchers reported, "Emotionally devastating visceral responses to errors were common and often incongruent with error severity" (Treiber & Jones, 2010, p. 1327). Those feelings were triggered not only from worry about the wellbeing of the patient, but also stemmed from a loss of professional identity as a safe and competent practitioner and fear of job loss or other disciplinary measures.

Fear of making a mistake with medications was a thread that also appeared in the work of nurses in my study. RN Holly explained,

> I am terrified of making a med error, and I always have been. That isn't new. That's from when I was first in nursing training, and the fear was just instilled in us. . . . That was just drilled into us, right from the beginning, from our nursing instructors, actually to the point where I would have nightmares. It was the same one, a recurring nightmare. And even now when I am stressed about work I'll have that same nightmare. It doesn't happen that often anymore but once in awhile. (RN Holly)

In all her extensive experience as a nurse, RN Holly has never made a medication error that had serious consequences for the patient, yet apprehension and fear have always featured largely in her daily practice. LPN Brenda also fears making a mistake, but believes her worries are protective:

> Yes, it is a fear that I have [making a medication error], and I don't know why. I have never (knock on wood) done that. I forgot as a student to take a nitro patch off, but I have never given a wrong dose of medication or given medication to the wrong patient, so I don't know where that comes from. And I hope it never goes

> away because it's a caution thing. Like you're less likely to make a big mistake if you're cautious. I don't know where it came from. (LPN Brenda)

I am not taking the position that nurses' fears are unwarranted, unjustified, protective, or fully understandable, but simply pointing to the discourse appearing in the literature, in nurses' talk and in their activities when working with medications. For instance, RN Holly has adopted a number of practices that help her avoid making a mistake, which she referred to as her "paranoia checks". She explained,

> I'm so paranoid about checking. I have to check and check and check. And I keep track of things, like if one syringe has 1 ml in it and the other syringe has 2 mls, then that is easy enough to figure out which is which. Or I use labels if both syringes have the same amount. Sometimes I just know that in my left hand I have Maxeran and in my right hand I have whatever. So there are strategies. And every time I give IV, I still check the book. Every time. (RN Holly)

The fears that both nurse informants expressed resonated clearly with my own experiences as a nurse and nurse educator, and were derived in part from an emphasis on individual performance, adherence to strict rule-based systems, and an internalized standard of perfection. This, in part, may explain why the thought of making a medication error is so enduring and alarming for nurses. Embedded within the discourse of fear of making a medication error is the message that mistakes are not acceptable, and when they are inevitably made can create feelings of guilt, shame, embarrassment, fear of censure and litigation, sorrow, and disgrace for those implicated (Canadian Nurses Association & University of Toronto Faculty of Nursing, 2004; Dennison, 2007).

The prospect of disciplinary action if mistakes are made is also embedded in the discourse. "The procedure manual exists as one instrument of this discursive framework, for nurses are warned that if they do not follow the procedure as it is set down, they will be legally accountable for any consequences to the patient" (Cheek & Gibson, 1996, p. 88). The provincial nursing regulatory body, CARNA (2014b), has provided examples

of unprofessional conduct on its website. Listed among grievous infractions such as patient neglect, sexual abuse, theft, fraud, and deceit are medication administration errors (CARNA, 2014b, "Reporting a Complaint," para. 8), sending an unmistakable message about the seriousness of making a medication mistake. In a recent article published by CARNA ("Publications Ordered," 2012), incidents heard by a hearing tribunal to scrutinize complaints about individual nursing practice were briefly described. In this particular issue, 12 of the 16 disciplinary actions that were portrayed contained an element of medication work that had been deemed to be unsafe or unprofessional. In one incident, a nurse failed to have wastage of a narcotic co-signed, which is contrary to the employer's policy. In addition to a condition appearing on the nurse's practice permit, that particular nurse was ordered to complete a course in communication and a program to improve his or her clinical skills. Another nurse who was found to have been unprofessional in his or her conduct received a condition on the nurse's practice permit and was required to take a course in responsible nursing for administering the wrong concentration of a medication, using an expired IV solution, and using a secondary IV line that had not been ordered by a physician. It is quite likely that there were additional circumstances at play that were not included in the publication, because taken alone, the sanctions imposed do not seem to be in proportion to the violations described. However, it is through these public processes that nursing work with medications is scrutinized, dissected, and critiqued and that nurses are disciplined.

Standardization: Creating Order and Control

As safety and risk discourses permeate contemporary health care systems, an ever-increasing emphasis on rules, standardized procedures, and accountability systems

result as organizations attempt to impose order and control over work. When risks such as medication errors are perceived as objective and measureable, it follows that they can be prevented through careful management. In particular, information systems and technologies that appear to subdue threats by quantifying them and rendering them manageable are highly sought out (McDonald et al., 2006). Although standardization is not new in terms of information systems, the drive to standardize health service work is much more recent, primarily motivated by the desire to improve efficiency and the quality of care (Ellingsen, Monteiro, & Munkvold, 2007). Proponents of standardization maintain that it is possible to impose routine, stability, and consistency on highly complex work environments in which variation and unpredictability are the norm, even though standard processes were originally developed in more predictable and controlled environments (Ball, Weaver, & Abbott, 2003; Meum, Monteiro, & Ellingsen, 2011; Parker & Lawton, 2000).

Standardized tasks, completed the same way every time according to pre-established protocols, are thought to reduce the chance of making a mistake (Hougaard, 2004). In this view, "safe care is seen as synonymous with care delivered according to a guideline or protocol" (Cooke, 2009, p. 260). Industrialized approaches to medication work are only possible when the work is conceptualized as a linear, rational process, consisting of a lengthy and discrete series of steps. When it is viewed this way, the steps of the process can be deconstructed, examined in isolation, and individually streamlined in an attempt to reduce risks, increase work efficiency, and cut costs. As I demonstrated in the prior analytical chapter, medication work does not always proceed in a linear fashion, but instead is often all-encompassing, circular, distributed diffusely over time

and space, and embedded globally into broader nursing work. The linear, rational construction of medication work is constraining and overlooks the pragmatic actions that nurses routinely undertake. I continue the analysis here, illustrating how attempts to standardize succeed in squeezing out individuated and situated aspects of nursing work and conceal the knowledgeable actions that nurses engage in.

Standardized Medication Work: Overruled?

Medication work is a highly controlled aspect of nursing practice, more so than other aspects of nursing work. An abundance of rules, policies, and standardized procedures characterize medication work and establish the responsibility of the nurse to administer medications "correctly," implying that there is one right way to accomplish the task. A large body of descriptive and prescriptive literature foregrounds the nurse's obligation to prevent mistakes and establishes rules such as adherence to the five rights[11] (Brady et al., 2009; Cohen & Shastay, 2009; Joolaee et al., 2011; McGovern, 1988), the three-times check—checking for all five rights when the medication is taken from supply, when it is prepared, and just before it is administered to the patient (Jones, 2009; Kim, Kwon, Kim, & Cho, 2011; Wolf, 1988), correct medication dosage calculations (Harne-Britner et al., 2006; Hutton, 2009; Ozkan et al., 2011), double checking of high-risk medications (Chua et al., 2009), and so on. These standard procedures attempt to impose uniformity and consistency while weeding out variation in the approaches that people might take when working with medications. The objective is to ensure that the same

[11] Although still largely referred to as the "five rights" of medication administration, additional rights have been added to the list over time in order to try and prevent medication errors (MacDonald, 2010). For instance, the *Medication Guidelines for Registered Nurses,* published by the College of Registered Nurses of Nova Scotia (2014), lists 10 rights of medication safety, including add-ons such as the right reason, right education, right to refuse, right evaluation, and right documentation.

procedure is used at all times, regardless of who is giving the medication, to what patient, in what setting, and under what circumstances.

Medication procedures have tightened and become increasingly elaborate over time. I use the example of the five-rights rule to illustrate this point. The five rights have been accepted by nurses for decades and have become enduring and omnipresent tenets of medication safety. These five rights are taught to beginning nursing students and reinforced time and again until following them becomes ingrained in the consciousness of nurses. RN Holly, a nurse who completed her educational program 40 years ago, explained, "The right person, the right medication, the right route, but especially the right patient, the right time, and the right dose. That was just drilled into us, right from the beginning, from our nursing instructors" (RN Holly). Cemented early in nurses' educational experiences, the belief that adhering to the five rights of medication administration will protect them from making an error is an enduring conviction. In a national survey of American nurses, nearly 90% agreed that most medication errors occur when a nurse neglects to follow the five rights of medication administration (Cohen & Shastay, 2009). Other authors claimed that up to half of the medication errors could be prevented with the careful application of the five rights (Joolaee et al., 2011). However, there is growing recognition that sole reliance on the five rights is not sufficient to prevent medication errors.

> Their capacity to prevent errors is vastly overstated, partly because the five rights focus solely on individual performance with no consideration for contextual factors or the multiple people and interrelated systems involved, and partly because they provide no procedural guidance. (ISMP, 1999, p. 1)

The five-rights rule was generated in an era when individual responsibility for preventing errors was the prevailing belief system, and mistakes were thought to be the result of poor

practice or human error (MacDonald, 2010). Despite these rules, mistakes can and do happen, even when nurses are convinced that they have followed the rules: "The repeated publication of the 'golden rules' to stop error year after year in the presence of continuing drug error on the ward, is a convincing demonstration that this dogmatic and person-centered approach does not work" (Anderson & Webster, 2001, p. 36).

The typical response to continued medication errors has been to formulate more rules. Over the years, additional rights have been added in further attempts to control all the nursing behaviours that can result in medication errors. This ever-increasing list includes elements such as the right documentation, the right to refuse, the right assessment, the right patient education, the right evaluation, the right indication, the right equipment, and on and on (CARNA, 2014a; MacDonald, 2010). The five rights have grown to the six, eight, and even 10 rights of medication administration (College of Registered Nurses of Nova Scotia, 2014). This provides a glaring example of the impracticality of the task of devising rule-based solutions to fit every possible situation in health care practice.

Regardless of how comprehensive the list of rules becomes, they can never account for the endless details and particulars that nurses pay attention to in their daily work with patients. Making more rules, in the belief that all of the possibilities will be captured, is futile. There is simply too much diversity contained within the multiplicity and range of situations that characterize medication work. Nurses are highly competent professionals who have the ability to practice without strict rules, and they are in danger of having the capacity to use their knowledge and judgment squeezed out by ever-tightening protocols. My data confirmed that in order to provide safe and meaningful

care, nurses use discretion to respond to the moment-by-moment events that can never be fully captured by standard processes and procedural guidelines. While nurses are committed to delivering medications safely, how they accomplish that does not wholly correspond with the rigid, step-by-step processes that are reflected in the many procedural and policy guidelines governing medication work locally, nationally, and internationally (CARNA, 2014a; CNA, 2014; WHO, 2011). In the next section, I use my data to illustrate how the step-wise systems and ideological practices fail to hold up in the everyday world.

Ideological Practices in the Everyday World

Nursing work: Loosely structured routine. Standardized safety procedures perform well in circumstances characterized by predictability, repetitiveness, and a limited range of possible responses. While an element of the routine certainly exists in nursing work, that routine is by necessity loose and flexible, as plans shift to accommodate the moment-to-moment ebb and flow of life on a hospital unit. A range of contextual issues arise in the day-to-day medication work of nurses that require the nurse to respond in ways that cannot always be anticipated and require the nurse to take actions outside of step-wise procedural rules. RN Karen explained,

> Your priorities change depending on everything that is happening. I start out looking at the medication book and planning all of my 0800 meds, and then something happens. I mean, there have been times where a patient didn't get his medications until 1000 because there was something that was way more important happening with more of a priority over here. You can say to someone, "I haven't given meds in 6 yet [referring to a room number]. Can you go and have a look? And see if they need anything?" You know, like maybe they have Dig [Digoxin]. Or maybe they've got something that can't wait. If I got really, really busy, and I knew things were going south in a hurry, I would check all of the meds for my patients at the same time, just to see if there was something that needed to be done right now, and if there was something that couldn't wait, . . . I would either ask for help, or I make that happen. I will make it happen in some way. (RN Karen)

Karen's original plan to prepare and administer 0800 medications, consistent with the standardized medication schedule and the rules governing the right time to give a medication, must change to accommodate a pressing need on the unit (such as a patient vomiting, falling out of bed, or complaining of chest pain). Karen responds to the urgent needs that arise, yet continues to hold the needs of multiple patients, numerous responsibilities, and competing, simultaneous demands in her mind. It is important to understand that nurses are never simply working with one patient and his or her medications, isolated from the whole context in which their work is taking place. Instead, nurses are responsible for an assignment of four to six patients, and they are members of a team, often providing leadership and guidance to others. Nurses may be working with those who are new to the role or setting, have a more limited scope of practice, or need support. Karen's thinking and actions, while deviating from the accepted protocols and standards for timely medication administration, helped to ensure that urgent needs were addressed, high-priority medications were administered before lower priority ones, the unit ran smoothly, and all of her patients were kept safe. This is the kind of discretionary work that I observed happening continually, as nurses retained a sense of their collective assignment, juggled what was happening in the context of the whole, took action to meet urgent needs as well as less-pressing needs, and reworked their plans so that they were responsive and flexible to all events that were occurring in the moment.

Standardized medication times provide another illustration of how medication work is treated in a routine, standard way, but nonetheless requires a flexible, in-the-moment response. Certain medications must be planned around food, either because they are meant to be taken on an empty stomach or taken with food. The precise timing is

entered into the medication record so that the ordered time of administration is congruent with the timing of meals. However, as I have already shown, the time that a medication is ordered to be given does not necessarily mean that it will always be given precisely at that time. In order to actually accomplish the correct timing of medications in relation to food, nurses engage in a number of interrelated work processes.

First, the nurse must be alert to the different medications that are either rendered more or less effective when taken with food. Recall how nurses scan the MARs at the beginning of their workday in order to get a sense of the "big things" (RN Karen) they have to plan around. Recall also how RN Karen identified insulin as one of the medications that nurses are sensitive to in that initial scan, partially because of the need to time the medication so precisely in relation to food. Nurses pay attention to those medications that must be precisely timed and prioritize them in their work plan. Second, the institutionally timed meals have to be appropriate and arrive for every patient. It is not uncommon for the wrong meal to be delivered or for meals to be missed altogether. Nurses must be alert for when meals arrive and check to be sure that all of their patients receive their ordered diet, particularly when it affects medication dosing. At times, nurses manage these concerns by preparing a small meal with the sparse food supplies that are kept on the unit rather than waiting for another meal to arrive. Third, there are occasions when patients are not eating meals at designated times or will not eat at all. Many patients are gravely ill and are unable to eat because of pain, nausea, fatigue, or other factors. They may have food intolerances, cultural food restrictions, or simple preferences that prevent them from eating the food that is provided in hospital. Some patients may be distraught and reluctant to eat. Nurses know that it would be counterproductive to

administer certain medications either with or without food (depending upon the prescription), imposing risks far more serious than late administration of a medication dose would. Therefore, while it may appear relatively effortless to ensure that medications are taken in the correct combination with food, it actually requires a great deal of knowledge, watchfulness, and vigilance to accomplish, and, as a consequence, medications are not always administered according to the scheduled time. Timing of medications is simply one of the innumerable rules and protocols that cannot always be accommodated in the everyday world of practice.

Time-intensive demands of ideological safety and quality initiatives. Although intended to improve the quality of care and enhance safety, many ideologically based initiatives demand the performance of time-intensive activities, are awkward and difficult to accomplish in practice, and do not always noticeably benefit the patient or improve outcomes in any way. The following example from my data illustrates this point. One evening shift, RN Mindy was assigned four patients, all of whom were designated "palliative care." Palliative care is an approach that is aimed at preventing and relieving suffering associated with life-threatening illness and improving the quality of life of people and their families (WHO, 2014b). One of Mindy's patients was Mrs. Smith, a young woman who was dying from metastatic cancer. Mrs. Smith was very ill; she was no longer conscious, nor was she able to communicate verbally. Mrs. Smith was being kept comfortable and pain free with a continuous fentanyl infusion, a powerful short-acting narcotic analgesic. In report, Mindy learned that the infusion was effective for Mrs. Smith, but that she would need to prepare a new infusion bag right away because the current one was nearly empty. Immediately following report, Mindy prepared the

narcotic infusion, and had the prepared bag double checked by her LPN co-worker. Mindy entered the patient room, talking gently to Mrs. Smith, and completed subtle assessments while simultaneously changing the narcotics bag. After leaving the room, Mindy picked up the patient chart and documented the new bag that she just changed over onto the patient-controlled analgesia (PCA) Medication Flow Sheet. As she was filling out the record, Mindy shared the following comment with me:

> I don't know why we have these sheets. They are redundant. I can see why they would use them on a surgical unit, but they aren't needed here. They [patients] are rarely bolusing[12] themselves. They are just on a continuous infusion that we monitor. We are in there so much anyway. Half the people don't fill out the sheet. The only reason that we do it is because the policy says we have to. And I'm not sure how it benefits me or my patients. (RN Mindy)

The policy that directed Mindy's work with this patient outlines expectations for nursing practices related to assessments, management, and monitoring of patients receiving narcotic pain management infusions, either as patient controlled or nurse controlled (Health Region, 2009a). In this case, Mrs. Smith's infusion was completely nurse controlled, as the patient herself was unconscious and incapable of using the self-administration feature of the infusion pump, yet the policy required that information be entered onto the charting form, such as self-rated pain scales and number of boluses attempted, as though the patient were managing the infusion herself. The policy also requires vital signs (blood pressure, pulse, respirations, and temperature) to be completed and recorded frequently, in accordance with the drug monograph (Health Region, 2009a, pp. 3–4). All of these assessments are critical in many situations in which narcotic infusions are used, as serious adverse effects such as depressed respirations, lowered

[12] A bolus is the rapid administration of a medication directly into the veins. This is done to allow for fast delivery, a quick rise in the concentration of the medication in the bloodstream, and an effective response.

blood pressure, and lowered heart rate can result. However, when patients are seriously ill and dying, comfort is the primary goal of care. Measuring vital signs (particularly blood pressure), a required assessment according to this protocol, is intrusive, uncomfortable, and often unnecessary. Other aspects of the policy such as patient education around self-bolusing and pain scores are not always applicable because of the health condition of the patients cared for on the unit.

As I illustrate here, the PCA policy is not useful to Mindy's work with this or with other dying patients. The standard protocol, designed to encompass all situations in which nurses care for patients with narcotic infusions, simply does not capture the essence of care that is required for those who are dying. The work required to adhere to the policy is an additional task that does not enhance quality of life or impact patient well-being. Mindy, like many other nurses, is caught up in the desire to provide meaningful, individualized nursing care while at the same time fulfilling her obligation to adhere to mandated policy directives.

The emergence of discretionary work. Not every RN follows the strict procedural guidelines dictated by policies governing nurses' work. In a different observation, I watched as RN Dawn completed an assessment of a patient who was also receiving a narcotic infusion. She did not check any of the vital signs that were required by policy, but she did complete the patient's pain score. Dawn commented that she would also write the total amount of the medication infused at the end of her 8-hour shift, but that she would not fill out the rest of the record. Dawn explained her decision:

> The policy asks for vital signs to be completed at certain intervals and other things that would not be appropriate for a palliative patient. It is the same PCA sheet that we use on the unit that is used all across the hospital, regardless. The policy is the

> same too, even though it makes little sense on a palliative unit. That's why not all of the RNs find the sheet to be useful in their practice. (RN Dawn)

Just as Mindy did, Dawn called on her experience and knowledge of caring for dying people and completed the tasks that were important to provide that care. In both of these instances, the RNs judged the formalized rules for what is necessary to ensure safe administration of a narcotic analgesic to be inappropriate and irrelevant in context. Both RNs knew this and made adjustments in their work, either by going through the motions and following the protocol in spite of the irrelevance of it, or by using discretion and modifying the protocol in order to provide appropriate, individualized, particularized care.

I observed many instances of discretionary work, in which nurses "violated" formal policies and procedures, but in well-thought-out, reasoned ways. When talking about their discretionary work, nurses often referred to how they know things "should" be done and provided unsolicited explanations to me about why they were not following established processes and procedures. RN Judy explained the thinking upon which her discretionary work was founded, which she referred to as "taking shortcuts":

> I take shortcuts at times because I have to, but I'm not always willing to do this. I go through a thought process to decide, because I won't always take the same short cut. It really depends on the drug, it depends on the patient, and it depends on what else is going on. I've thought about why I was willing to do this one time but not the next. (RN Judy)

Later, in the observation, I noticed one of the shortcuts that Judy had referred to earlier. I noticed that Judy stayed at the bedside chatting with some patients while she unobtrusively watched them take their medications, while in other instances, she left the medications at the bedside without observing the patient actually take them. Leaving medications at the bedside is considered unsafe practice within the ideologies that inform

the rules of safe practice. A regional policy directs personnel to remain with the patient until the medication has been consumed in order to verify that the medication has actually been administered as ordered (Health Region, 2009b, section 5.10.1). Visual verification of a patient ingesting a medication is expected to create the conditions for legally completing the permanent record, which documents each instance of medication administration. While it is certainly ideal practice to personally observe while each and every medication is ingested, it would also be enormously time consuming, and impractical to accomplish. Judy explained her thinking underlying this discretionary work:

> I wouldn't do that with everyone, but with this patient I would. She's alert, coherent, and very capable. She is also in a private room, so no one can accidentally walk through and take them by mistake. But that could change tomorrow, so I wouldn't necessarily do that every time even with the same person. (RN Judy)

Judy's well-thought-out accommodation is safe in the circumstances she described and helped her to accomplish her work within the tight time frames that she had available.

On another occasion, I watched as LPN Nadine prepared medications for one of her patients, entered the room, and sat at the bedside chatting with the patient. Nadine handed the medications to the patient, poured her a drink of water, and continued to sit and chat while the patient took the medications. On the surface, it appeared as though Nadine had plenty of time, a conception belied by the work she had to complete that morning. Nadine told me,

> That's the way we're "supposed to" do it. We are supposed to stay and watch people take their medications and make sure they don't have any trouble with that. But I don't always do it, . . . and lots of times I have gone into rooms and found pills sitting there. But especially with her [Nadine nodded toward the patient room], I need to watch. I don't trust her to actually take them if I don't stay and watch. And the way I talk to her is a strategy too. It distracts her, because

> I know she can get upset if we just say we need to see her take the pills. (LPN Nadine)

In these examples, both Judy and Nadine offered perfectly reasonable accounts to explain the thinking behind their work processes when they violate rules, yet they both characterized their actions as being "bad" (LPN Nadine) or as "taking shortcuts" (RN Judy). The portrayal of their own practice in this way reflects the ideological view that following formalized processes is the only acceptable course of action, and that nursing practice that runs counter to protocol may be seen as sloppy, incompetent, or even negligent. Other nurses in my study interpreted similar actions as reasonable expressions of professional judgment. For instance, RN Mindy acknowledged, "I don't necessarily do things the way I am supposed to," but characterized her practice as "safe and careful."

In the health care literature, practices that do not follow procedural guidelines are commonly referred to as workarounds, and are constituted as problems to be solved. Discursively constructed as "negative," workarounds are primarily viewed as destructive to the intended safety features that have been designed into systems (Halbesleben, Savage, Wakefield, & Wakefield, 2010; Koppel, Wetterneck, Telles, & Karsh, 2008; Yang, Ng, Kankanhalli, & Luen Yip, 2012). "Workarounds can potentially erode attempts at standardization and undermine intended benefits. They can compromise data integrity and place people at risk by circumventing quality and safety mechanisms" (Debono, Greenfiled, Black, & Braithwaite, 2010, p. 1). In the literature, researchers recognize that many workarounds develop because of barriers or inefficiencies inherent within the systems themselves, which fundamentally compromise existing work processes, yet stringent rules, guidelines, and policies, coupled with primarily technological solutions, uncritically attempt to "fix" the behaviours of clinicians. There is

little acknowledgement that the processes and solutions themselves may be the problem, and simply do not work within the local context, regardless of how people are manipulated and controlled. What also remains unrecognized in the discursive construction of workarounds is that nurses are not simply "working around" systems, but are producing systems of safety and efficiency that can actually be accommodated in the real world of nursing.

Unofficial sanctioning of discretionary work. There are some circumstances in which it is understood, if not officially sanctioned, that it is within acceptable limits for nurses to break certain protocols and procedures ruling medication work. Nurse Manager Tammy provided an example of when it may be acceptable and even desirable for a nurse to deviate from accepted protocols:

> An experienced nurse [who has] . . . a patient that uses Tylenol and does not have an allergy to Tylenol . . . [and] gives a Tylenol to [that] patient at 2 a.m., that would be an acceptable thing to do and then get a cover order for. The only things, though, that people do that for [are] Tylenol, cough lozenges, possibly a glycerine suppository. It's changing. Younger staff are much less likely to feel comfortable with this than older staff. In a rural facility it may be different. Here nurses are much more respectful of a physician's sleep and will really think it through to see if it warrants a wakeup call. (Nurse Manager Tammy)

Dispensing medication without a physician order is a violation of scope of practice. This illegal act could result in serious disciplinary action, including the loss of the nurse's professional practice permit. However, it appears that there are certain occasions when nurses are encouraged to break accepted policies and procedural guidelines by managers and physicians, who hold much more discretionary power than nurses themselves do. In her description, Tammy referred to "an experienced nurse" who might be expected to have more confidence and situational knowledge and expertise. She also referenced the time of day and thus the degree of disruption that a call to the

physician would pose, implying physician's sleep is a nursing priority. Particularly during the night when the physician is less readily available, nurses might be encouraged to manage independently with minor patient concerns that arise, consulting with the physician during daytime hours. The medication being administered also appears to be an important criterion. Common, easily available medications that pose little risk to the patient may be considered acceptable to give without an order.

Confronted with conflicting information about what the nurse knows is required for the patient, what she knows she is legally authorized to do, and knowing not to "bother" the doctor at night, nurses are faced with troubling dilemmas. RN Elise provided an example of how these kinds of dilemmas arise for nurses:

> If it's a new admission and we have their old charts, and they say, "I always take Ativan at home," and the doctor happened to miss it, sometimes we might give it at bedtime and get an order in the morning. (RN Elise)

As Elise pointed out, nurses are the ones at the bedside dealing with the immediate concerns of the patient as they arise. They are then placed in the position of having to decide whether to refuse patient requests, risking their anger, to give a medication without an order, risking discipline for breaking the rules, or to call the physician and risk his or her displeasure at being disrupted. Elise explained that what nurses know about the attending physician is an important consideration when trying to decide what to do. Elise knows which doctors would support her decision to give a medication and write a cover order, and which doctors would not:

> [One doctor] has kind of given us standing orders, like for his PICCs [peripherally inserted central catheters] that are occluded. He'll say, "just go ahead and tPA [tissue plasminogen activator; a medication to dissolve clots] it, you can write the order yourself. You don't need to call me for that." Again, he's very comfortable with our judgments. It's kind of an unofficial thing. (RN Elise)

RN Karen also spoke about how knowing particular physicians plays into her decisions about what to do when a patient is asking for an unordered medication:

> There are certainly some doctors that if you gave a medication that wasn't ordered, you'd be in a lot of trouble. You'd have charts thrown at you [laughs]. I've seen that. And it's not even Tylenol that you would give, even if the person has a screaming headache and says they take Tylenol at home. I would go to them and say, "So and so is your physician, and I can't bring you Tylenol because we don't have an order, but I'll get one as soon as I can." You negotiate. You do whatever. But, you know whose patients you can give things to and whose you can't. And, you know, I think we are pushing the limits sometimes. We push the rules a little; we bend them a little bit. (RN Karen)

While what nurses know about particular physicians plays into their decisions to break certain rules, so does their own knowledge about particular medications, safety parameters, and the conditions that increase or decrease the risk of administration. RN Dawn provided an example to illustrate that point:

> Well if I had a patient who needed a laxative, and it was in the evening, and there was no order, I would just negotiate it myself and then get the order later. One of our doctors has said many times, "If it's my patient, just go ahead and give it." But I'm always keeping in mind, do they have a rectal problem? Because we don't want to make it worse. I'd be pretty darn sure it was okay before I went ahead and did it. I'd make sure there were no contraindications for giving it. (RN Dawn)

Dawn explained that her cautious approach was in part based upon her desire to ensure that the particular medication was safe to be administered, and in part from her fear of repercussions in the event that something went wrong:

> I get uncomfortable. I get scared, because I know if anything were to go wrong, guess who's going to get into trouble? I worry that the hospital would not stand behind us, that the doctor would not stand behind us, and then we would be hung out to dry. (RN Dawn)

Recall the various legislative and regulatory frameworks that are meant to safeguard patients, such as the HPA (2000), the practice standards and scope of professional practice documents (CARNA, 2003, 2011), and the professional guidelines

for medication administration in Alberta (CARNA, 2014a). All of these authoritative documents govern the performance and set the required standards for registered nursing practice in the province. Any practice that violates policy, procedure, or professional standards is subject to scrutiny and possible disciplinary action, just as Dawn fears.

Blindly following rules is not the answer either though, as that would eliminate nurses' thinking and judgment to respond in a responsive, creative, individualized, reasoned way to the situation at hand. The following example from my data illustrates this point. Nurse Manager Tammy related a personal story about an incident when she was a patient in hospital and was ordered a narcotic analgesic (Tylenol #3) to manage her pain. Tammy told her nurse that Tylenol #3 would make her nauseated because of the codeine and asked to have plain Tylenol instead, which is essentially the same base medication without the addition of codeine and caffeine. The nurse refused to substitute the medications, because plain Tylenol was not ordered. The nurse also refused to contact the physician for an alternate order, as it was past midnight and not an urgent concern. The nurse's refusal was consistent with the rules governing medication work, but left Tammy in considerable pain, as she chose not to take the prescribed medication:

> I begged the nurse, but no. It makes no sense whatsoever. I told her that I could walk down to the gift shop and get the plain if only I could walk that far. We talk about critical thinking all the time, but the systems work against your ability to really critically think through. (Nurse Manager Tammy)

Given more flexibility and discretionary range, Tammy's nurse could have administered plain Tylenol, which is widely available to the public, rather than the more powerful medication that she was ordered. Instead, Tammy could not take the Tylenol #3 because of the adverse effects that would result, and she suffered the pain because no alternatives were available to her. This quandary is a natural outcome when nurses are operating

under the taken-for-granted understandings of safe practices that constrain nurses' discretion and create serious restrictions in their work.

Historically, standing orders[13] were common, and allowed nurses to give certain medications under particular circumstances. For example, it was common to have a standing order for plain Tylenol, which could be administered in circumstances like Nurse Manager Tammy described above. Standing orders permitted nurses to use their judgment (within prescribed boundaries) in administering a dose of medication to a patient without a prior specific prescription. Standing orders have been phased out of many settings in Alberta, including my study sites, in an attempt to make it easier to monitor and control prescribed medications and ultimately make medication work safer. While the elimination of standing orders is heralded as a progressive safety initiative, it certainly has created contradictory tensions for nurses, doctors, and patients. Removing standing orders has taken away much of the discretionary power that nurses once had to manage minor, predictable concerns. This has also placed nurses in the precarious, subordinate position of attempting to negotiate the territory between the immediacy of their everyday (and every night) practice and the authoritative positions held by physicians and administrators. The practices that have emerged as standing orders disappeared provide an example of how safety discourses organize nurses' discretionary work and what is perceived as rule breaking.

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[13] Standing orders are prewritten medication orders, administered under specified clinical situations at the discretion of the nurse. Recent clinical guidelines published by CARNA (2014a) asserted, "Standing orders should not be used because they are not client specific, do not specifically identify the conditions and circumstances that must be present before implementing and are not best practice" (p. 8). Protocols are now commonly used in place of standing orders. Protocols are "a set of orders or series of interventions to be implemented by another care provider (i.e. nurse) for a range of clients with identified health conditions and solely when specific circumstances and criteria exist" (CARNA, 2014a, p. 7).

Summary

Standardized processes and rule-based systems have gained a taken-for-granted status in the discourse ruling medication work and dominate ideological practices that control and discipline the work. Protocols and procedures establish the correct way to work with medications, reducing variance and constraining the possible responses within established standards. Following rules offers a way to assure RNs and to demonstrate to others that nurses' procedures are best practices and produce safety. As the industrial model is moving forward to organize out discretion, nurses subvert rules that simply do not work on the ground. It is not my intent to argue against standardization and rule-based systems, but to argue instead that a multilayered approach is necessary. Health care systems need to find ways to supplement standardized approaches by allowing for the incorporation of flexibility, discretion, and judgment into nursing work. Enforcing strict adherence to protocols leads to the possibility that risks and dangers could be unattended to, because nursing consciousness is organized toward following the rules and getting it right.

Discretionary work is troubling within a theoretical frame that values adherence to rules as the only way to demonstrate safety. The literature presents a strong focus on constituting nurses as the problem when strict processes are not adhered to successfully. It is important to recognize that nurses are often placed in no-win situations, as they are caught between the "discourse that nurses take up to guide their practice and the reality of the practice setting" (Canam, 2008, p. 301). Discretionary practices rooted in nurses' situated knowledge keep patients safe, but are rarely acknowledged in discourses of risk and safety. Ideological practices dominate, overshadowing the forms of knowledge that

develop from inside the work. Nurses suppress their own knowledge of what they do to keep patients safe, aligning instead with the ideological practices of safety. They are both captured by the discourse, and they reproduce the discourse through their unconscious participation in it. This is the contested terrain of knowledge: what nurses know from inside their work and the other forms of knowledge active within health care settings. Using the patient identification process as an analytic exemplar in the next two chapters, I pick apart the ideological practices of safety in more detail. I illustrate how reified processes meant to be best practices do not hold up under critical scrutiny and are not constructed from concrete experiences of people working with medications.

Chapter 7: "The Right Patient": An Analysis of the Social Organization of Knowledge

The institutionally mandated process for identifying the correct patient is formalized within procedural guidelines and policies, and is widely accepted within managerial and scientific circles as the best way to ensure that the right person receives the care that is intended for them. One of the main arguments buttressing the stringent identification process and the myriad of guidelines and protocols directing medication administration is that they are informed by evidence, and that following them closely will lead to "best practices." The premise is that use of scientific evidence can perfect the delivery of medication work through advancing sophisticated processes and technologies. In my observations, I did not witness one occasion in which a patient was misidentified. However, I also did not once observe a nurse adhering to the stringent, institutionally mandated process for identifying the correct patient (see Appendix J). Instead, nurses used more practical ways of identifying patients, which I describe in the following chapter, and were able to produce safe, skilled, competent care despite their use of alternate identification strategies. It is this puzzling disjuncture that I pick apart in the next two chapters of this dissertation.

In this chapter, I examine the strict procedural practice for verifying the right patient, and demonstrate how the evidence underpinning the process falls apart when it is scrutinized more closely. In tracing the development of the patient identification process, I follow the evidentiary support to determine how that evidence was produced. I soon discovered that every time I drilled down into the supporting evidence, it simply disappeared. I also use my data to show how textual accounts of the patient identification

process are created, which bear little resemblance to what is actually happening in practice. I also show how these textual accounts are then used to provide further evidence supporting the rules controlling medication work, creating specious confidence in the value and effectiveness of the strict patient identification processes.

The Emergence of Strict Procedural Processes to Identify the "Right Patient"

Patient misidentification, along with other priority safety concerns, became a focus of attention globally subsequent to the World Health Assembly's[14] Resolution 55.18 in 2002; the resolution urged countries to "pay the greatest possible attention to patient safety" (WHO, 2002, p. 1). Member states and the World Health Organization (WHO) agreed to work collaboratively to address the large-scale problem of patient safety. At a meeting in late 2003, Sir Liam Donaldson proposed the formation of a global alliance to tackle safety problems, and subsequently the WHO sponsored World Alliance for Patient Safety was formed in 2004 (WHO Safety Program Manager Sarita). The World Alliance for Patient Safety established a number of programs focused around six broad areas for action, including initiatives such as global patient safety challenges and an international patient safety classification system. One of the original action areas, "Solutions for Patient Safety" (WHO, 2007b, p. 1)[15] targeted patient misidentification, and provided strong impetus for the drive to solve the problem of patient identification in Canada and around the world (Accreditation Canada, 2009).

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[14] Composed of the health ministers of member states, the World Health Assembly is the decision-making body of the WHO and is the highest-ranking health policy setting body in the world.

[15] WHO (2007a) has defined patient safety solutions as "any system design or intervention that has demonstrated the ability to prevent or mitigate patient harm stemming from the processes of health care" (p. 2).

Evidence Underpinning the Two-Client-Identifiers Required Organizational Practice

Shortly after the WHO (2007a) patient safety solutions were developed, patient identification became a focal area for Accreditation Canada,[16] and the "Two Client Identifiers" (Accreditation Canada, 2013b, p. 32) standard was added to the accreditation program in 2009. Standards are added in the form of required organizational practices (ROPs), which are defined as "essential practices"[17] (Accreditation Canada International, n.d., para. 4) that organizations must have in place to enhance patient safety and reduce the risk of preventable harm. Hospital policy followed suit, and the two-client-identifiers standard was incorporated into patient verification procedures in the province (Health Region, 2012). According to the policy designed around the two-client-identifiers standard, patient identity must be verified prior to any health service (such as taking a blood sample or administering a dose of medication); two unique patient identifiers (such as the patient's first and last name, date of birth, and personal health number) must be matched and verified with the documentation ordering the health service; and the patient must verbally confirm his or her identity wherever possible (Health Region, 2012; see Appendix J for more specific detail about the process).

As I proceeded with the analysis in this IE study, and noted the depth of the disjuncture between the practices mandated by the two-client-identifiers ROP and my observations, I began to examine the knowledgeable practices being activated in the two

[16] Accreditation Canada International (n.d.) is an independent not-for-profit organization whose mandate is to accredit health care organizations in Canada and internationally. The accreditation program is built on evidence-based standards and directed toward the improvement of safety and quality in health care.

[17] Essential practices are informed by the best available evidence and are developed with input from health care experts (Accreditation Canada International, n.d.).

different domains. This led me to scrutinize the evidence underpinning the practices held as imperative for safe patient identification, and then to contrast that form of evidence with the alternate evidence that underpins this study: my observations and interview data describing what is actually happening in nursing patient identification work. Following this analytical path, I uncovered some of the hidden priorities underlying the current emphasis on patient identification, and can show that the evidence that has been generated inside the patient safety movement derives from a particular, narrow location.

Studies utilized to develop the guidelines for the two-client-identifiers ROP.

The phrase *evidence based* derives from the movement known as evidence-based medicine, which is the "process of systematically finding, appraising, and using contemporaneous research findings as the basis for clinical decisions" (Rosenberg & Donald, 1995, p. 1122). Over time, the evidence-based movement[18] has expanded to include other disciplines and health care more broadly. The basic premise is that by using methods of scientific inquiry, best practices can be determined, which will lead to improved patient outcomes. Best practices are developed and disseminated through a complex set of textual rules such as professional guidelines, protocols, and procedural practices, such as the ROPs. Once a practice becomes labelled as a best practice, supported by current evidence, it becomes the accepted standard. This is the case for the standard process mandated by the ROP for two client identifiers.

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[18] Evidence-based health care "involves practitioners or policy makers using their expertise to combine the best available evidence, knowledge of available resources with patient or population circumstances, values and preferences in decision making" (National Collaborating Centre for Methods and Tools, as cited in Canadian Nurses Association, 2014, Evidence-Based Medicine section, para. 1). The term *evidence-informed* decision making has emerged "as an approach . . . that aims to ensure that decision making is well-informed by the best available research evidence" (WHO, 2014a, "What is Evidence-Informed," para. 1).

The two-client-identifiers ROP, which establishes the importance of correctly identifying patients, is based on the evidence from two cited studies in which errors in patient identification and actual or potential adverse events were statistically examined. The first is the United States Department of Veteran Affairs (VA) National Center for Patient Safety (NCPS) study that found patient misidentification was implicated in a number of incidents in which people were harmed (Mannos, 2003). The NCPS, established in 1999 to develop and nurture a culture of safety through the Veterans Health Administration, examined aggregated information from its internal database and noted that more than 100 individual root cause analysis[19] investigations involved patient misidentification (Mannos, 2003). Based on a retrospective analysis of documentary evidence, a brief summary of these root cause analyses was described in Mannos' (2003) publication distributed by the center. My requests to review the investigation reports have gone unanswered, so I am left to rely on the information that the brief summary offers. The NCPS summary reported that nearly half of the incidents of misidentification involved either laboratory activity or medication administration, and that these events most commonly occurred in high-transit areas such as the cystoscopy room, blood bank, emergency department, admitting area, waiting room, intensive care unit, and operating room (Mannos, 2003). No detail was provided about the methodology used to collect or analyze the data, rendering it impossible to apply standard scientific critiquing guidelines to assess the rigour of the study. As it was published in an internal publication, the report was not subjected to a peer or scientific review process, yet the report has assumed an

[19] Root cause analysis is a standardized approach to analyzing critical incidents. This analytic tool helps to identify what happened, why it happened, and what can be done to prevent a similar incident from occurring again (Hoffman, Beard, Greenall, U, & White, 2006).

authoritative status, spurring the Joint Commission on Accreditation of Health Organizations (as cited in Mannos, 2003) in the United States to recommend "using at least two patient identifiers when taking blood samples or administering medications or blood products" (p. 1). No background or supporting material was provided to explain how the two-patient-identifier process was determined.

As the NCPS report cited, the majority of the patient misidentification incidents occurred in high-transit areas, where patient turnover is rapid and a large number of people cycle in and out of the area (Mannos, 2003). It is logical to create strict procedures around patient identification in areas like this, where people are coming and going and there is little continuity in the patient base. In these sorts of settings, care proceeds chronologically, as each patient arrives and leaves the care episode within systems that are organized to accommodate patient movement through each instance of care. Contrasted to the way that patients enter and leave nurses' work in the relative stability that a hospital unit offers, high-transit areas function much like a factory assembly line.

In my own experience as a family caregiver, I have accompanied my mother for blood tests, chemotherapy, and other treatments numerous times. Every time that my mother arrived at the laboratory for blood work (a high-transit area), she took a number from the dispenser and waited for her number to be called. Every time, my mother was asked for two pieces of identification to verify her identity, and her identification was compared with the laboratory requisition ordering the blood work. After her blood work was completed, my mother left the area, completing the episode of care. I have been pleased by the attentiveness to correct identification that laboratory personnel provide under these circumstances. However, hospital units do not work like this, even when

there is a high turnover of patients. Each patient's care on a hospital unit is the responsibility of a particular nurse, and patients do not generally travel through the unit like they do in some other areas. As I have already demonstrated, applying the same standardized processes without taking into account the particular work context, the available technology and resources, and the local conditions simply does not make sense in nurses' work with medications on a hospital unit.

The second study that established patient misidentification as a source of potential or actual medical error is from the United Kingdom's National Patient Safety Agency (NPSA), a division of the National Health Service (National Patient Safety Agency [NPSA], 2005) that operates at arm's length. The NPSA has developed a system wherein one or more patient safety incidents[20] can be reported on the NPSA's website by patients, families, staff, or members of the public. Each incident reported is entered into the central database. The NPSA reported 236 safety incidents or near misses that occurred relating to missing or incorrect patient identification wristbands between 2003 and 2005 (NPSA, 2005). As a result of the concerns that were reported to them, the NPSA recommended that all inpatients should wear standardized wristbands that identify them, and outlined a set of procedures to be incorporated into relevant local policies (NPSA, 2005). As with the VA report (Mannos, 2003), the NPSA (2005) findings are difficult to assess for usefulness, rigour, and credibility of data. The NPSA does not investigate any of the reports that they receive: they simply monitor and report the concerns and use the information to make recommendations directed toward reducing risks and improving

[20] The NPSA (2011) has defined patient safety incidents as any "unintended or unexpected incident which could have or did lead to harm for one of more patients receiving NHS [National Health Service] care" (para. 2).

patient safety. In this system of reporting, duplicate reports of the same incident could be received. In addition, because the incidents are not investigated, it is difficult to determine the accuracy and validity of the incident as reported. Another major problem with the reporting system used by the NPSA is that people's experiences and narratives are distilled down into predefined categories and tick boxes. While some of the information being collected may be easy to extract and simplify (such as the date or location where an incident occurred), other aspects of an incident may be impossible to condense into a predefined category. These kinds of reporting mechanisms make it very difficult to assess the usefulness of the data. The system is unscientific and the statistical manipulation of the data is not transparent. In an era of evidence, this seems particularly odd when the data are used to generate widespread policy initiatives such as standardized wristbands, required by the National Health Service, as a result of the incidents reported to the NPSA.

References supporting the two-client-identifiers ROP. In addition to the two research studies that provide supporting evidence, context, and rationale for the development of the guidelines for patient identification, the Accreditation Canada (2013b) ROP document includes four additional references, which I critically examine in this section of the paper. Accreditation Canada's primary cited source supporting revised client identification systems is a review that was published by the Australian Commission on Safety and Quality in Health Care (2008),[21] exploring the potential benefits of various technological solutions to patient misidentification. The review was conducted by a

[21] The Australian Commission on Safety and Quality in Health Care (2014) is a government agency that "leads and coordinates national improvements in safety and quality in health care across Australia" (What We Do section, para. 1).

management consulting firm specializing in information technology to improve business performance and concentrated on readily available and relatively cost-effective technological solutions aimed at the consistent identification of patients (Australian Commission on Safety and Quality in Health Care [ACSQHC], 2008). The Australian commission's report did not indicate whether technological solutions were predetermined as the only possible remedy, or whether other kinds of remedies were considered and rejected.

Current and emerging technological solutions such as standardized wristbands, barcoding, radio frequency identification tags, biometrics, wireless networks, smart cards, and digital images were all included in the consultant's review (ACSQHC, 2008). The Australian commission's report summarized key strengths and limitations of the various technological approaches and cited select resources; the summary was not based in scientific scholarship and did not provide a comprehensive review of the literature either supporting or contesting the effectiveness of each approach (ACSQHC, 2008). Other possible approaches to patient identification processes were not addressed. Nonetheless, the authors concluded the review by noting that technology is a key enabler of the patient identification process (ACSQHC, 2008). They cautioned that technological identification processes are not the sole solution, recommending that strategic, system-wide approaches are important to solve the problem of patient misidentification (ACSQHC, 2008). As no critical review of any of the literature was included in the Australian commission's document, it is difficult to judge the credibility of the recommendations that emerge from this report. It is also relevant to note that the review was conducted by a management consulting firm, with interest and expertise in improving organizational efficiency and

effectiveness through technological innovations, which may have resulted in biased findings.

Another resource cited in Accreditation Canada's (2013b) ROP for two client identifiers that underpinned the recommendations for required performance was a report from a large, privately operated cancer centre in the United States (Parisi, 2003). A panel of expert employees, broadly representing various stakeholder groups within the facility, brainstormed potential causes of patient misidentification and developed a standard policy for implementation across the hospital. Parisi (2003) reported that occurrences of patient misidentification would be tracked and trended through the hospital's own quality improvement department in order to "ensure and evaluate success" (p. 79). Although Parisi (2003) projected positive outcomes of the project, no evaluation or outcome data were reported in the article, and no further reports surfaced during an Internet search for this information. In a personal communication with the study author, I was able to determine that there was no further follow up on the patient identification project (L. Parisi, personal communication, July 18, 2013), yet this unevaluated quality improvement project implemented in one hospital in the United States has been used as evidence to buttress the two-client-identifiers ROP in Canada's national context, and is used to support significant, time-consuming changes to the regulatory environment in which nurses practice.

The third resource cited in the Accreditation Canada's (2013b) ROP for two client identifiers summarized a quality improvement initiative undertaken at a large university hospital in the United States, aimed at improving blood transfusion safety (Sandler, Langeberg, & Dohnalek, 2005). The hospital adopted a bar code safety system that linked

patient wristbands with blood collection tubes and blood components, all of which are labelled with unique bar code labels. Sandler et al. (2005) reported that their hospital achieved 100% accuracy using the bar code system with the more than 125 transfusions that were completed at the time the article was published. The authors concluded, "Bar code technology offers a practical and efficient approach to improving transfusion safety by eliminating errors in identifying patients, their blood samples and blood components for transfusion" (Sandler et al., 2005, p. 24). However, even though the researchers reported 100% accuracy in their study, a sample of 125 transfusions is not nearly large enough to demonstrate significance in the North American population. Transfusion errors are relatively rare. For instance, in New York State where reporting of transfusion errors is mandated by the state, researchers found that errors occurred once for every 19,000 units of blood administered, in a total pool of nearly 9 million units of blood transfused over the study period (Linden, Wagner, Voytovich, & Sheehan, 2000). A much larger pool of blood units transfused over a longer period of time is needed to demonstrate that the confidence that has been placed in bar coding technology is warranted and is responsible for the results found in Sandler et al.'s (2005) study.

The final and most influential resource cited in Accreditation Canada's (2013b) reference list for the two-client-identifiers ROP is the WHO (2007b) document that described patient identification as one of the inaugural patient safety solutions. Recall from earlier in this chapter that patient safety solutions surfaced as a key action area launched by the World Alliance for Patient Safety (2004) as a way to foster international collaboration and action on patient safety. In 2005, the Joint Commission International was nominated to conduct the research and suggested priorities for the safety solutions

(WHO Program Safety Manager Sarita). I interviewed a WHO Safety Program Manager who was involved in the development of the safety priorities. She described the process that was used for their development:

> The Joint Commission International did desk research mainly. They searched the literature, sent out surveys, and put together a committee of experts from around the world to look at the kinds of safety problems that could be addressed. It was based on burden, importance, and impact to patients. The commission did the groundwork and then the expert committee decided on the solutions. The experts were nominated jointly by the WHO and the Joint Commission. We suggested people we knew had expertise or interest in patient safety. The committee met twice a year to discuss the solutions and issues and to make sure that the content of the solutions was correct, but the work of deciding on the solutions was all done by the committee. (WHO Safety Program Manager Sarita)

Patient safety solutions were initially formulated around nine global problem areas such as patient misidentification, as well as other potentially harmful problems such as look-alike, sound-alike medication names, communication during patient handovers, single use of injection devices, and so on (WHO, 2007b). The aim of the solutions was to identify, gather, and disseminate existing knowledge about patient safety for adoption around the world, regardless of cultural and economic differences. The WHO (2007b) document has been enormously influential. The drive to meet the standards generated by the international organization has pervaded the global patient safety context and almost immediately entered into Canadian safety and accreditation standards in the form of the two-client-identifiers ROP (Accreditation Canada, 2013b).

As Sarita, the WHO Safety Program Manager, explained, the WHO (2007b) patient safety solutions were developed and disseminated under the guidance of an international steering committee of experts. Many countries were represented on the committee, although the United States was disproportionately represented (12 out of 35 members) in comparison to other nations (WHO, 2007b). Most of the 35 steering

committee members were renowned specialists in the area of patient safety, working within various government health organizations, accreditation bodies, academic settings, and commercial enterprises. A majority of committee members were physicians (19 out of 35), although there were nurses, pharmacists, lawyers, social workers, and others serving as representatives as well. It is interesting to note that while most of the work of identifying patients happens on the ground and involves front-line workers such as laboratory technicians, nurses, hospital clerks, and so on, people closely connected to practice were notably absent from the committee. The problem of patient misidentification and the solutions that were generated appear to have been conceptualized outside of the concrete and practical world where identification actually happens.

The WHO abandoned work on the safety priorities project in May 2007 and terminated the patient safety solutions program in 2009 (WHO Safety Program Manager Sarita), just 1 year after the two-client-indenters ROP was introduced into the standards for accreditation in Canada. The work was stopped because of emerging evidence that the format was not useful for supporting implementation of safety improvements among the member states. Sarita explained the lack of success of the project, saying,

> We tried to make a midline solution, but in the end it failed. The technology-poor and resource-poor countries were interested in more specific information about how to achieve the suggested actions. Some actions were too broad, like "have systems in place," and they didn't know what that meant. They wanted more concrete actions, things they could do in their own hospitals. The developed countries wanted more too, but in a different way. They asked, "Is that it? We know all that already. What is WHO doing? You are telling us something so basic. Of course we have systems in place." So in the end it was not very successful. (WHO Safety Program Manager Sarita)

It appears that on the global scale, basic safety initiatives standardized across diverse regions are difficult to accomplish. In the formal evaluation of the project, WHO acknowledged that the reality in the field is complex (Farley, 2011), rendering standardized practices wieldy and ultimately impossible to implement. That is the crux of the problem with standardized processes filtering into nursing work: the complexity of the field and multiple layers of activity cannot be accommodated within a standard, singular process that attempts to encompass vastly diverse and dissimilar circumstances, even when, from the outside perspective, the work appears to be the same.

The Dominance of ROPs

As I demonstrated in the previous section, the evidence underpinning the solutions to solve the patient misidentification problem is primarily based on expert consensus and the weak evidence that is available in the published literature. Despite these limitations and acknowledgement that the patient safety solutions were not an effective strategy, the WHO (2002) resolution and actions arising from it continue to be hugely influential. Once they have entered into the rhetoric, solutions such as the two-client-identifiers process permeate the discourse and are difficult to disrupt. Accreditation Canada (2013b) maintains that "evidence has shown decreases in client identification errors when revised client identification systems are used" (p. 33), and strongly promotes the practices mandated by the ROP for two client identifiers to solve the misidentification problem.

Embedded in the national accreditation program (Accreditation Canada, 2013b), the two-client-identifier process is not optional for health care organizations interested in achieving or maintaining accreditation status, a highly desirable credential in today's

environment. Organizations that can meet accreditation standards are judged to be safe and have demonstrated their interest in continuous quality improvement. This is an important way that publicly funded health care organizations can demonstrate accountability to the public. Public accountability is a key trend identified in numerous provincial and federal policy reports (CIHI, 2012; Kirby & LeBreton, 2002; Mazankowski, 2001; Romanow, 2002; Wade et al., 2002). For these and other reasons, organizations are hugely invested in achieving accreditation status.

Although participation in accreditation is voluntary throughout much of Canada, it is mandatory for organizations within the Alberta health system (Alberta Health & Wellness, 2008). Substantial time, effort, and financial resources are expended preparing for Accreditation Canada's on-site visits, which help to ensure that the organization can demonstrate compliance to standards. Nurse Manager Tammy explained,

> Accreditation is *so* important to the larger organization. The amount of resources that are devoted to it—the time, the money, the hours are incredible. We know when the visit is going to be and we start ramping up months before that. (Nurse Manager Tammy)

The ramping up that Tammy described is critical to ensure a successful on-site visit. If the organization did not meet Accreditation Canada's tests for compliance to standards and ROPs, a decision of "not accredited" could be rendered. This would signal a significant failure and would require the organization to immediately notify the provincial Minister of Health and Wellness (Alberta Health & Wellness, 2008). The considerable expense incurred by organizations seeking accreditation, the possibility of losing provincial funding, and the damage to public accountability if a "not accredited" decision is received, virtually guarantees that all ROPs are emphasized within health care organizations in Alberta.

Whether mandatory or voluntary, accreditation is a highly sought after credential nationwide, as it is an indicator that the organization is evaluating its processes and adopting an approach of continuous quality improvement (Accreditation Canada, 2012b). The Health Council of Canada (2007) has recommended that "all health care facilities should be accredited as a condition of public funding" (p. 45), but acknowledged that accreditation is a powerful lever regardless of the funding issue. As a consequence, patient safety ROPs are extremely influential and drive managerial decision making. Organizational policies are based on ROPs, which then filter down into the everyday work of nurses and others, organizing much of the day-to-day activity observed in health care facilities across the country.

Compliance With ROPs: Ideological Evidence

Although accreditation status is used to assure the public that organizations are safe and interested in improving their processes, I challenge the assertion that organizations are actually safer because they have been able to demonstrate compliance with accreditation standards. Organizations certainly may be safe for patients, but how patient safety is accomplished in the everyday actions of nurses and other workers is obscured by the ideological appearance of safety as organizations ramp up for an accreditation visit. The core of this analytical thread is the critical examination of processes that are used for organizations to demonstrate compliance to standards. This provides insight into the limitations of the evidence that support the accreditation credential. This analysis is not intended to undermine important efforts to improve patient safety, but rather to provide material evidence that disrupts the ideological practices that dominate current conceptions of patient safety. In this analysis, I also suggest that the

textual practices of demonstrating compliance to accreditation standards result in a seriously flawed conception of the actual practices used by nurses to identify patients safely and correctly.

I use the compliance data compiled on Accreditation Canada's (2013b) two-client-identifiers ROP to illustrate this point. When the new ROP on patient identification was introduced into the program in 2008 (Accreditation Canada, 2009), it forced health care agencies to examine their existing practices, identify gaps or barriers, and put required resources, policies, and procedures in place in order to meet the new requirements. In 2009, the year following its introduction, Accreditation Canada reported 67% compliance with the two-client-identifiers ROP and targeted this area as highly urgent,[22] and in need of immediate attention (Accreditation Canada, 2009). Compliance rates are determined through self-reporting mechanisms and on-site surveys, and Accreditation Canada judges organizations to have either "met" or "not met" the particular compliance criteria that are specified for each ROP. Compliance increased to 90% in 2010 (Accreditation Canada, 2011) and 92% in 2011 (Accreditation Canada, 2012a); these figures demonstrated a desired level of achievement within the aggregated data. This appears to be an astounding accomplishment, providing unquestioned evidence that the Accreditation Canada (2013b) processes mandated by the two-client-identifiers ROP are indeed being followed. However, rates of adverse events or errors for survey sites are not included in accreditation reports, so it is not possible to link compliance with positive outcomes or improved patient safety.

[22] Accreditation Canada targeted all ROPs with a compliance rate of 75% or lower for improvement in that year.

The assertions of improvement, supported by data collected through self-assessment tests of compliance and on-site visits, are incongruent with my empirical data gathered through close observation and interviews. I observed hundreds of occasions of medication administration, and the only times I witnessed adherence to the two-client-identifiers procedures was in my role as a family caregiver, accompanying my mother for blood work and chemotherapy. A front-line nurse manager, with years of nursing experience, shared her own observations with me:

> I have put some thought into this, and went back over my own personal history. I cannot recall a time when I have ever seen a nurse do it [use the two-client-identifiers process]. I've talked to the charge nurse, I've talked to nurses one on one, and I've talked about it at staff meetings. No one does it. Lab has it down to a science—they always, always do it. But nurses have more challenge around this because we get to know our patients. We don't even necessarily do one identifier. That's the reality. (Nurse Manager Tammy)

It is vitally important that I emphasize that in all of the occasions of medication administration I observed, nurses did not make an error in correctly identifying patients. While they did not use the institutionally approved process, nurses did identify patients, albeit using unsanctioned and unrecognized methods. The actual practices that nurses use to know and correctly identify their patients will be explicated in the next chapter. These empirical data demand a second look at the wisdom of enforcing ideological constructions of patient safety onto work that is not well understood and that is fundamentally incongruent with the sorts of mechanistic routines upon which the patient safety discourse has been built.

Data compiled through accreditation surveys show a high degree of compliance with patient identity verification procedures; however, data collected in this study did not support that finding. The depth of the disjuncture between the textual account of patient

identification procedures and the actual practices that nurses take up in their medication work is striking. In an attempt to understand how this disjuncture happened, I tracked back into the institutional complex to trace out how compliance rates are produced. I discovered that compliance rates related to Accreditation Canada's (2013b) ROP standard for patient identification are determined in a number of ways, and almost all of them are textual. The two-client-identifiers ROP has one test for compliance: "The team uses at least two client identifiers before providing any service or procedure" (Accreditation Canada, 2013b, pp. 33–34). In their self-assessment reports, organizations are expected to provide evidence that they are meeting the test for compliance. The evidence can include policy documents, memos, descriptions of educational sessions that have been offered to staff, and so on (see Appendix K for a sample). During an on-site visit by the accreditors, nurses may be asked about the procedure that is used to verify patient identity, but rarely are they observed as they go about their work. Even if a nurse is accompanied by the accreditor on a medication round, the ramping-up process conducted in preparation for the accreditation visit will no doubt result in nurses' performance of the required identification standards. However, as Nurse Manager Tammy explained, the accreditors seldom accompany nurses during the site visit: "Their [the surveyors] presence is there; they could go to the bedside with the nurse and watch, but they don't usually do that" (Nurse Manager Tammy). Wade, a Surveyor for Accreditation Canada, provided further explanation for how on-site surveys are conducted:

> We have a number of strategies we use to see whether an organization is meeting the standards. The organization has already gone through a self-assessment and identified areas of improvement. We confirm what they are doing using two mechanisms: observing it in action or in a text—reading a document or talking to someone who has a role. We also do what we call clinical tracers, where we look at three client files and follow the patient path through the organization, just to see

> how things flowed. We look at things like, is there a wristband, is the ID [identification] on the chart? We also do one-on-one interviews with the clinical manager, and we would ask questions like, "How do you know you have the right clinicians?" "How do you ensure that the right care is given to the right patient?" And we always make sure we check the policies and procedures. (Accreditation Canada Surveyor Wade)

The assumptions embedded here are that if there is a policy on patient identification, then people will follow it; if an inservice is held, then people will attend and understand; and if they can articulate the correct process that is meant to be used, they actually can and will do it. However, that assumption is flawed, primarily because it relies on an ideological construction of practice that does not match what is actually happening. As Nurse Manager Tammy explained, simply telling people to follow a particular process without consideration for materiality of the work is futile: "You can't just tell people what to do, because that doesn't take into account the reality of everything the nurse is dealing with" (Nurse Manager Tammy).

These data from the local site of accreditation practices help to explain why the compliance rate is reported to be so high. The existence of a policy is used as evidence for compliance, not whether the policy is enacted in practice. If actual practices were examined, free from the constraining need to perform a certain way to meet accreditation standards, compliance would not be achieved: "We never did get a recommendation[23] on the two patient identifier [at the last accreditation visit]. I don't know how they missed that, that we failed miserably" (Nurse Manager Tammy).

[23] Following an on-site surveyor visit when compliance to standards is assessed, recommendations are made in areas where compliance is not met. To get "a recommendation" is to fail to meet the standard. Organizations are then expected to take action and use the recommendations to guide ongoing quality improvement activities (Accreditation Canada, 2013a).

The accreditor's certainty that the two-client-identifiers process is used generates knowledge that is not based in evidence, but instead is based on a form of evidence that is textually abstracted from the site of health care practitioners' actual functioning. Using the primarily textual and numerical information that is gathered, an account of patient identification work is constructed that bears little resemblance to reality. It may appear in all of the formal reporting as though nurses are applying the two-client-identifiers rule, but they are not. Documenting compliance to the accreditation standard for patient identification certainly demonstrates something, but not necessarily safety for patients.

There are major consequences when a disjuncture exists between an authorized view of what is going on and what is actually happening in practice. Dorothy E. Smith (1990) noted, because there is a process in place to decrease identification errors and it appears as though nurses are using the process, organizations are reassured that patients will be safer as a result; the "ideological circle" (p. 156) is intact, and no one need scrape below the surface to see what is actually happening. The textual account provides more evidence to continue to use the process, further reinforcing discursive safety practices. As I show here, when the authorized knowledge accounting for reality is flawed, further actions and decisions based on what is understood to be going on produce even more dissonance between what is actually happening and the specious knowledge that is used to regulate and control. It is this ideological circle that coordinates tensions and contradictions and may ultimately disrupt nurses' knowledgeable experience.

Summary

The stringent institutionally mandated processes for patient identification are uncritically accepted as a best practice. Judged within the dominant standards used to assess the credibility of evidence, the formalized patient identification processes are derived from flawed and imperfect evidence. My critique about the credibility of the evidence surrounding patient misidentification is not meant to suggest that the process is worthless or necessarily flawed, but is simply meant to disrupt the certainty with which the standard has been adopted and to question attempts to apply it universally without regard for the contextual nature of nursing work. Nurses and other practitioners are increasingly scrutinized and monitored for adherence to ideological formulations of safety that rule medication work. Ruling practices of safety hook people into generating virtual accounts that are accepted as fact and are thought to demonstrate safe identification work. Nurses and organizations provide textual evidence to support their use of standardized patient identification processes in order to achieve accreditation status, as part of the ramping up for accreditation.

In the next chapter, I provide evidence to illustrate how patients are routinely identified in hospital settings. My observations illustrate the strategies that nurses use to know their patients within the context of their everyday work. I suggest that, in many instances of nurses' work with patients, the use of the two-client-identifiers process could disrupt the carefully developed work processes of nurses if strictly enforced. I also show how health practitioner knowledge about how patients are known is glossed over in a system in which certain types of evidence are uncritically accepted as "truth," leaving little room for the contextual, practical knowledge developed on the ground.

Chapter 8: How Nurses Know "The Right Patient": Continuing the Analysis of the Social Organization of Knowledge

In the prior chapter, I demonstrated how specious knowledge about patient identification processes is created based on expert consensus, the weak evidence that is available in the published literature, and the misleading textual accounts of patient identification work that are produced to demonstrate compliance to ideological standards. Here I continue the analysis, introducing data from experts whose knowledge has not been recognized in a substantial way: nurses who are actually doing patient identification in their everyday work, and who know it from that unique location. I illustrate how nursing knowledge and reasoned decision making enters into identification work and disrupts the institutionally accepted and standardized process that is deemed to be the only correct way of identifying patients. I maintain that the forms of knowledge that nurses use to identify patients are legitimate, and can inform health care practice, making a significant contribution to patient safety if heeded. I also maintain that continuing to conceptualize quality and safety without a solid understanding of the front-line work that nurses are engaged in provides an inaccurate and unrealistic view of practice. I use my data to provide insight into what is happening in the materiality of nursing work, and demonstrate how nurses actively and creatively know their patients outside of the standardized processes that permeate contemporary health care settings.

Everyday Patient Identification Work: What Actually Happens

As I outlined in the previous chapter, the institutionally mandated process for patient identification is derived from the Accreditation Canada (2013b) two-client-identifiers ROP, and is the only authorized way that patients are to be identified in health

care settings. In my observations, nurses did not use the processes and rules required by policy to identify patients (see Appendix I). I watched time and time again as either a single identifier was used, or no visible identification process was discernible. Not once did I witness the medication record being compared to the identification bracelet, as is required by the policy. However, as I talked to nurses about the identification process that they were using, I became aware that they were not deliberately defying the policy, nor were they ignorant of the standards. Nurses were simply using different, more practical ways of knowing their patients that made sense in the context of their work. RN Karen provided a glimpse into how she identifies patients. She was aware of and defended the alternate approaches that she employs for getting to know her patients. She is confident that she is not only giving the right medication to the right person, but that she is actively thinking about each person as she works:

> I don't check wristbands, because a lot of our patients don't have them anyway because of edema or other things. They'll be taped to their nightstand or are non-existent. How it starts is that you have your report sheet with all of your patients' names on it right there. And you know that Room 6 has Beatrice Smith, so when I go to the medication book and I'm pouring meds for Room 6, I always check the name on the sheet to verify, yes, that's Beatrice Smith. And I have her face in my head because I've already met her. I go into her room, and if she is able to speak to me *I will call her by name and strike up a conversation with her* while I'm opening up her meds. (RN Karen)

Policy and practice standards clearly instruct the nurse to use the armband as a unique patient identifier, yet it is not always a practical or viable method for nurses in their practice. As Karen says, there are times when the armband is missing, or is in the room but not attached to the patient. The bracelet may not be easily accessible, as it may be on the arm farthest away from the nurse, necessitating her to juggle the paper cups of medications, water, and documents that she may have brought into the room with her.

More importantly, though, Karen described how she "strikes up a conversation" with her patient while she is opening the medication packages. In that conversational moment, Karen is gathering additional information about the patient, and learning her voice, face, appearance, wants, needs, and other subtle cues that make each person a unique individual, turning a routine moment of nursing practice into a knowledgeable interaction with Beatrice.

Another experienced nurse explained why she does not always use identification bands and shared her strategy for identifying patients:

> I don't check their name band every time. I check the MAR, the book, the bottle, that it was the patient, and I call them by name and from report I knew who they were and from earlier in the day from when I went and talked to them first thing, I knew who they were. When I gave the medication I always called them by name. (RN Holly)

These accounts demonstrate how nurses know patients, a subtle but deliberate method that both RNs weave into their overall care. Although Holly referred to the process she used as a subconscious one, it is in fact a careful, methodical system fully integrated with the many things that constitute her shift of duty whereby she begins to know her patients even before she meets them. Holly learns about patients initially in report, where she creates an impression of the person based on information such as the person's age, gender, diagnosis, treatments, and so on. This allows her to anticipate the nursing care that each patient may require as well as what kinds of medications that each patient will receive. For example, her 20-year-old diabetic patient would be expected to be on insulin, two pieces of data that match up in Holly's mind. All of this information is used to build a cognitive vision that is held in her mind and modified and adjusted as new information becomes available to her. After she meets the patient, Holly described how

she holds a visual image that remains in her mind that she can carry forward to subsequent shifts and meetings with the same patient.

As both these experienced nurses alluded to, getting to know patients is an on-going, evolving, cognitive process that begins with the initial entry into the work setting and continues throughout the duration of the patient–nurse relationship. It is also important to note that this never happens in isolation. Instead, the nurse is always holding multiple pieces of information in her mind: her patients, the other patients on the unit, the staff members she is working with, the unique characteristics of the setting, the supports that are available, as so on. This carefully constructed knowledge work supports the nurse to constantly link the patient and the care that is appropriate for that patient, in context with everything else that is going on in the moment. It is my impression that this is an advanced nursing skill that would be fundamentally undermined within systems that require nurses to move mechanically through predetermined steps or algorithms intended to standardize and routinize nursing practices. The kinds of processes that a directive such as the two-client-identifiers demands cannot be simply added on to current nursing practice with the expectation that nurses' current ways of knowing will be preserved. As strict processes such as these are mandated and adherence to them tracked, they may dominate practice, squeezing out former ways of doing things, replacing them with other priorities built on rationalities that do not support nursing work.

Barriers to the standardized process for identifying patients. Inside the materiality of nursing medication work, nurses use their knowledge, developed on the ground, to identify patients in practical, reasoned ways. As my data illustrate, the cognitive pictures the nurses formulate are the primary way that nurses know patients,

and stand in for formalized identification procedures. That is the key analytic thread and the fundamental point that I make in this chapter. However, it is also worthwhile to note that even in the absence of nurses' patient identification knowledge practices, following the formalized process for patient identification may be very difficult to accomplish. I use the example of accessibility to the MAR to illustrate this point.

Each patient has his or her own MAR, which is filed in a common binder (i.e., the med book) and kept on the med cart. According to the policy and professional practice guidelines ("Oops, Sorry," 2012), the MAR is to be compared to the patient identification band each and every time medications are given so that the right medication for the right person can be verified on the spot. However, this rule was not adhered to, and the MAR remained on the med cart when nurses entered patient rooms. In all cases, I observed nurses preparing medications for their patients by referring to the MAR as they worked, removing the medication from stock and placing it into a paper cup, labelling the paper cup with the patient's name and room number, and then entering the room with the medications to administer. Without the MAR in hand, there is nothing to compare the wristband or other patient identification to.

The med carts are not wheeled into individual patient rooms because they are a shared resource in high demand. To meet the institutional requirement of comparing the medication record to the patient identification band, the MAR would have to be removed from the medication book and carried into the patient room along with the medications and other supplies needed. The MAR could then be used to verify identity before giving the medications, the nurse could document on the MAR, and then return it to the medication binder. There are consequences and potential problems with this solution as

well. The MAR is what triggers medication work, so if it is inadvertently misplaced, it could give rise to missed doses later in the medication schedule. Even if it is not forgotten or goes missing, it could simply be absent from the book for an extended period (and inaccessible to others) as the nurse gets caught up in a myriad of nursing activities while in the patient's room.

Nurse Manager Tammy has thought deeply about the entire process of patient identification because of her role in scrutinizing nursing work and evaluating how it stands up to accreditation standards. She is concerned about non-adherence to the expected process of patient identification and has strategized about how she might improve compliance. Tammy explained how difficult it is to meet the accreditation standard:

> When we had our accreditation here recently, that was one of the big things that was emphasized: "Are you doing two patient identifiers?" We really need to be doing that for any kind of care and in particular for medications. We are not doing a very good job at it, because a lot of patients are wearing an ID [identification] band but they [nurses] don't necessarily check the name and the date of birth. They really emphasize date of birth as a good one because the chances of having two patients with the same last name and the same birth date [are] so slim. However, the really interesting thing about it is that when you are in the hallway at your medication cart, you look at your MAR, pour your meds, do your next check on your meds, and then you walk into the room but you do not carry the MAR into the room with you, you do not take the cart into the room, so in essence you are trying to memorize that patient. They very much emphasize that room number is not acceptable. We are not to pour meds or do any kind of intervention with the patient by their room number, but I suspect that that is happening a lot. Because they [nurses] are thinking, "Okay, this is for 218-1, Mr. Smith," so they're kind of using the room number as one of the identifiers, because they don't have anything to go with into the room. I've put some thought into this, and talked to some of the nurses. They all have a cheat sheet. They might have six patients, and they have all the patient information on their cheat sheet, and many times they will take a patient label and put it there next to the patient name. The problem with that is that you have a bunch of labels in a row and you go into a room, could you inadvertently look at the one that is just below or the one above it. I would rather see them carry the MAR into the room with them, and verify from the MAR right to the patient, and then sign it off. (Nurse Manager Tammy)

As Tammy described, the work systems that nurses have developed do not easily allow for patient identification to happen according to the authorized view of it. Tammy does understand the difficulties that are created for nurses, and appreciates that the standard process does not always fit with the reality of the work. However, as a manager, she also must ensure that nurses adhere to processes that are mandated by the institution.

What difference would it make? As I demonstrated in the prior chapter, the two-client-identifiers process may be very appropriate in some settings and circumstances, particularly where patients cycle in and out in a discrete fashion (e.g., laboratory settings). However, on hospital units where nurses have a particular work assignment and get to know their patients in the ways that Holly and Karen described, the value of adhering to the rigid identification process is questionable at best. In the following data excerpt, LPN Brenda spoke about how she knows she "should be" following the institutional policy for identification, but that she does not because it does not make sense in the context of her work:

> I'm terrible for that. I'm bad. I don't check ID [identification] because I know their [the patient's] face. If you were in a big city situation where the patients are changing all the time, I would look at the armband. I just feel like I know that person—I know their face and I know their name—but I think it's a habit that I should be in regardless. I think I should check the ID every time, maybe not every single time, but at the start of the day. But I think that comes from my schooling, I should check the name band every time. Maybe that's where it comes from. I think I should be doing it, because in my head I've been told that I should be doing that every single time. But I don't think it would really make a difference if I did check the name band every single time on a patient that I knew. Like the patient in [Room] 6, he is who he is, and I know who he is. It wouldn't make a difference, but if I was in the habit of it, if I ever went and worked somewhere else, then I would be in the habit. (LPN Brenda)

While Brenda acknowledged that she "should" be checking identification each and every time, she does not believe that it is a practice that would make any difference at all to

safety when she chooses not to. She knows the unique circumstances of her own work, and talked about how she would do things differently in another context.

On another occasion, I watched as RN Mindy prepared medications for one of her patients. She had two different IV medications to give, so she took them out of stock, prepared them, and then entered the room. The patient, a young woman dying of cancer, had been confined to her bed for weeks. As we entered the room, I could see the woman in her bed with her family around her, and a tangle of IV lines and pumps, which were infusing medications to her around the clock. Mindy walked confidently to the bedside, expertly changed the IV bags and started infusing the two medications she had prepared. All the while, Mindy was talking softly to the patient, assessing her comfort and asking about her children. Mindy did not check the patient's identity in a way that was visible to me. Outside of the room, Mindy said, "I don't do the two unique identifiers in this case. I *know* this patient; I've worked with her for months. It makes no sense at all to bug her, asking her who she is" (RN Mindy). It is difficult to see how her patient care would have been improved had Mindy followed the institutional policy and checked the patient's identification using two unique identifiers. As Brenda so adroitly noted, checking identification in this way makes no difference for a patient that she already knows.

Nurse Manager Tammy's knowledge lined up with that point of view as well:

> Even as a manager, it's hard to see the value . . . for the nurse that knows the patient, is that a good use of time? Yes, I got the check mark for accreditation, but is that just a task that loses meaning when it becomes like this? You're going through the motions, you're doing it, but you're not *really* doing it. But where is the value in the time you spend doing that?" (Nurse Manager Tammy)

As I demonstrated in the previous chapter, ROPs necessary for accreditation dominate the current health management agenda. This dominance ensures that certain

practices, such as those identified within the two-client-identifiers ROP are heavily emphasized, placing prime responsibility on organizational leaders to plan and implement strategies to demonstrate compliance. ROPs drive policy development, staff education, audits, and other surveillance activities, and organize the distribution of scarce resources within the health setting. If the extensive time and financial and human resources that are poured into accreditation processes such as the two-client-identifiers ROP do not lead to better outcomes, then what is the purpose of all of the effort invested? There are serious implications to this externally generated, intense focus on particular activities. Whenever nurses' and nurse managers' time is organized and mediated toward specific aspects of their work, attention is diverted away from other aspects. Rather than concentrating so intently on processes that meet accreditation standards, but make little difference to patient outcomes, health care workers could be placing their time and energy into the kinds of patient care issues that arise in their everyday work.

The institutional process for identifying patients prior to administering medications is logical in a theoretical, ideological realm. It is irrefutable that patient misidentification has been implicated in incidents in which people have been harmed and that accurate patient identification can prevent errors of this type. It seems to make perfect sense that in order to be sure that the right medication is administered to the right person, there must be a standardized verification process. In practice, however, the logical rationality of this approach breaks down, creating moments of tension for those actually doing the work. It does not make sense for nurses to check two unique identifiers before each and every medication administration when they have been in the room many times previously that day, have helped the person to the bathroom, know the names of the

person's children and grandchildren, know their intimate fears about not being able to return home, and so on. On a very real level, nurses know their patients in ways that go far beyond mere recognition of their name and face. Repeatedly asking that person their name and checking their identification band becomes redundant for nurses in some circumstances, and could interfere with other important nursing work if adherence was enforced.

Nevertheless, nurses and nurse managers are caught up in the discourse surrounding patient identification and what should be done in order to meet professional and organizational standards. As I demonstrated in the previous chapter, the rule-based system requiring two patient identifiers for every treatment and medication is flawed and is based on evidence that does not strongly link to the practices that are required. Knowledge about what is needed in the setting and what is known about the issues that arise is subordinated to a "correct" version of knowledge that suggests that the only way to achieve competent practice is through adherence to a routinized, formal stricture. This authorized, theoretical knowledge about nursing practice is what nursing performance is measured against, placing nurses in a difficult quandary.

The time-intensive nature of the institutionally mandated patient identification process. It is interesting to consider what might happen if nurses did follow the institutional process for patient identification at all times and in all circumstances. Although the identification check seems like a simple task to add on, it is actually time intensive to complete, and invasive at times for patients and families. Recall Mindy's work with her palliative patient. Checking the name band in that instance would have required physically disturbing the patient and her family, turning on lights, lifting

the bedcovers, and rousing her by moving her arm so that the identification bracelet could be read. It also would have required careful manipulation of the numerous IV lines and furniture. This process could have required a request for family to move away from where they are positioned at the bedside in order to navigate the space. Once accomplished, this would require additional settling work to restore the patient's comfort. Multiply that by the number of medication administration occasions per day, and it is easy to envision how the process would consume a great deal of nursing time, already a scarce resource in most health care settings. In my personal experience accompanying my mother for chemotherapy treatments, a nurse commented to me, "We are just too busy to be checking ID [identification] bands all the time. And patients think we don't know what we are doing if we are constantly checking!" This same nurse explained that her nurse administrators gave nurses permission on her unit to check identification bands only once, and then to use their usual process after that. This appears to be an informal recognition from leadership that it would not be sensible or desirable to demand compliance to a standard rule when nurses routinely use their good knowledge and expertise to identify patients in ways that make sense in the real world of practice.

The two-client-identifiers process emerges as cumbersome and time consuming. It is evident that if nurses did adhere strictly to the patient identification process, other (perhaps more important) nursing activities would be sacrificed to accommodate this additional work. Nurse Manager Tammy explained, "Nurses have less time than ever before, but if they were doing this [the two-client-identifiers process] something else would have to slide" (Nurse Manager Tammy).

In addition, although time is important, it is not the only critical resource at stake here. The learned skills of moving unobtrusively around a patient's bed, taking careful note of what is happening, and offering comfort without physically disturbing the patient is a core mark of good nursing care, and these skills are at risk of being lost within new approaches to care. The key point here is that nursing work is impossible to break down into its contingent tasks, and nurses are not actually adhering to the mandated process in most cases, so it is impossible to know what other work might be compromised if nurses consistently applied the institutionally mandated process to identify patients. What is apparent is that nurses' time is becoming an increasingly scarce resource as increasing safety and quality initiatives are added to their existing workload, and enforcing strict policies would effectively reorganize nursing work in unknown ways.

Nurses' Safety Work: Global and Specific`

My observations from the bedside vantage point demonstrate that the strict processes developed to meet ROPs such as patient identification are not routinely followed in the everyday work of nurses. Working closely with individual people, the nurse's view is at once more global, holding all of the contextual factors, and at the same time more specific, as she or he centres on the conditions that make sense to keep the person safe in particular instances. That is the key concern that guides practice and actions in the day-to-day work, much more than organizational safety priorities that are developed as standardizing practices far removed from the busy nursing units where care is being provided. I use an empirical example to illustrate this point, which reflects both the global and specific knowledge that informs nursing practice.

As I observed LPN Nadine's medication work one morning, I watched as she went directly to her patients' rooms following report. She entered each room, and chatted with her patients in a familiar, humorous, and sociable way. All of her patients were elderly and were in the hospital for long-term, chronic conditions. As she chatted with patients, she helped each person to sit up either in bed or in a chair at the bedside, and passed each patient a facecloth to freshen up before breakfast arrived. I was impressed by the efficiency of her work, and how skilfully she was able to draw out significant assessment information through her informal questions. All of the patients responded very positively to her. Nadine explained her rationale for approaching her work in this way:

> My process is different from others that I see. I don't go straight to the med cart. I want to get everyone up and sitting, especially the elderly people here, because they can't take their medications safely if they aren't sitting. (LPN Nadine)

As all of the patients that she cared for that day were long-term patients, Nadine was already familiar with them. She used her knowledge of the growth and development of the elderly, as well as her situated knowledge of each person and his or her particular needs, to plan and conduct her care in a way that kept her patients safe. Nadine knew that it was more important to have these particular patients sitting in an upright position to prevent choking and aspiration than it was to start work on her medications immediately.

I continued to watch as Nadine entered Mrs. Green's room with all of her medications prepared. Nadine sat down at the bedside and handed Mrs. Green the medications and a drink of water. Nadine did not identify Mrs. Green using the institutionally mandated two-client-identifiers process, or any other visible process. Nadine continued to sit beside Mrs. Green, chatting with her and surreptitiously

observing her closely. On the surface, Nadine presented an unhurried and serene front that belied her high workload. As Mrs. Green began to take her medications, Nadine noticed that she was clearing her throat, coughing, and having difficulty swallowing the pills. Nadine asked, "Do you need help with that?. . . What would make it easier for you to take these pills? . . . Do you want me to crush your pills in future? . . . Is that a new problem for you?" (LPN Nadine). Mrs. Green was vague in her responses and continued to try to swallow the pills with some coaching and instruction from Nadine. Nadine tried two different strategies: placing the pills in a teaspoon of applesauce for easier swallowing, and offering warm drinking water rather than cold. Both strategies were helpful to Mrs. Green, who, with continued coaching, was slowly able to take her medications safely.

Back in the hallway, Nadine said to me, "She hasn't had trouble with that before. I wonder what is going on with her?" (LPN Nadine). Again, because of her familiarity with this particular patient, her knowledge of how Mrs. Green has taken her medications in the past, and her vigilance, Nadine was able to detect a problem that could herald significant medical or functional issues.

At the med cart, Nadine wrote, "give with applesauce" and "warm water" on yellow sticky notes, and placed the notes in the MAR next to the medication orders for Mrs. Green. These notes are meant to alert other nursing staff to the difficult swallowing that Mrs. Green experienced and to inform Nadine's colleagues of strategies that were helpful. Nadine later followed up by informing the physician and consulting with the pharmacist about alternate formulations (such as liquids) for Mrs. Green's medications. Nadine's actions in this instance were critical to the safety of the patient, but would not

be captured in any specific ROP. Her actions, although vital and absolutely necessary for Mrs. Green's wellbeing, reflected nurses' routine application of nursing knowledge. This is an example of the everyday knowledgeable work that nurses are engaged in, which are intensely concentrated on keeping patients safe, but in ways that are not always noticed, tracked, or measured. Although Nadine's actions were integral in keeping Mrs. Green safe, her practice could be judged as inadequate or non-compliant, because she did not use the strict procedural method of identifying her patients as mandated by Accreditation Canada's (2013b) two-client-identifiers ROP. This is a notable weakness in how patient safety is being discursively and ideologically organized: critical safety work is overshadowed and the important work that nurses are actively engaged in to keep patients safe is being compromised.

Summary

Continuing the examination of the patient identification process in this chapter, I illustrated how ideological formulations of safe practice dominate and overshadow nursing knowledge that is developed from inside the work. When the definition of what counts as good evidence is expanded to the important, empirical, ethnographic evidence reported here, it becomes apparent that the current formulations of safety that dominate the discourse are limited. They systematically exclude the specialized knowledge that nurses and others have about how patient identification actually happens. If the tightly prescribed and standardized processes such as the two-client-identifiers rule are successful in regulating nurses' actions in the future, nurses will have reduced time and opportunities for the careful noticing work that they accomplish in their day-to-day practice.

The ideological process of ensuring the right patient for medication administration in all cases is simply not consistent with what nurses know and what may be occurring in the moment-to-moment fluctuations that characterize nurses' shifts of duty. Regardless of the logic embedded in the seemingly rational processes surrounding authorized versions of patient identification, strict adherence to these processes would fundamentally disrupt nursing work. Patient identification work in front-line practice is based on everyday knowledge, developed in its embedded place. My data provide evidence to show that while patient identification does not unfold according to the institutionally mandated processes, nurses do in fact identify individuals based on their expert knowing of the patients. Nurses' knowledge is developed through their presence close to the bodies of people. This helps nurses to recognize patterns of behaviour, anticipate problems, and call on past experiences and knowledge to determine future courses of action. In a very real sense, the nurse is the expert on the spot, preserving safety through close attention, vigilance, and timely action. However, the safe practices that nurses engage in are largely unknown, partly because their day-to-day work is overshadowed by the intense scrutiny on particular actions such as patient identification processes. My data build an account of how nurses are constructing safety into medication work, helping to develop a more robust understanding of nurses' contributions to safety.

Chapter 9: Conclusions, Recommendations, and Implications for Research

The most significant finding that I explicate in this research is that the essential discretionary work that nurses are routinely engaged in is seriously constrained by the stringent rules that dominate medication work, and is in danger of being organized out of their practice. As increasingly inflexible processes and standardized procedures infiltrate medication work, it is difficult, and sometimes impossible for nurses to simultaneously use discretion and follow the rules. I also found that the current dominant formulations of safety are limited, and systematically exclude the specialized knowledge that nurses have about their work. My analysis takes a sharp departure from existing literature on the topics of medication work and medication safety and clearly displays what is actually happening in practice and how nurses' work with medications is organized to happen the way it does. This critique offers possibilities for action, and can disrupt the ruling regime, which excludes nurses' ways of knowing about medication work. In this concluding chapter, I briefly highlight selected findings of this research, and explore the significance that the findings have for practitioners, educators, health care organizations, and the development of health policy. Finally, I identify the boundaries and limitations of this project and make recommendations for future research projects.

Major Findings

Taking the standpoint of nurses in this project and tracing their accounts into the institutional complex informed my understanding of how ruling works in their daily lives. As I watched nurses work with medications, I observed many instances in which their practice did not strictly adhere to the standardized processes and rules that are widely believed to prevent errors if consistently and rigorously followed. Nonetheless, the work

that nurses produced was skilled, safe, and competent. Inside this broad contradiction, I noted many other aspects of nurses' medication work that I found puzzling. On the one hand, nurses relied heavily on individual, habitual, and ritualistic practices—such as the five rights of medication administration (Kron, 1962)—creating broad frames that organized their work with medications. Driving their practice was the desire to deliver medications safely and correctly while simultaneously adhering to policy and practice standards. Conversely, I noted that nurses' habits and rituals were enmeshed in discretionary work, which often required them to break rules that were incompatible with their expert knowing of their own work. All of the instances of rule breaking I observed embodied discretion in action, the well-thought-out adaptations that nurses inherently make to the rigid rules that structure their work. Nonetheless, rule breaking is a risky proposition for nurses, as their professional competence is scrutinized and judged within powerful regulatory frames.

I use the terminology of "rule breaking" throughout this analysis with some disquiet, as I do not intend to contribute to the rule based discourse that dominates nursing work with medications. Instead, I use the language of rule breaking to illustrate how powerfully the discourse has entered into nursing work, and shapes practice, thinking and collective consciousness about the "right" way to work with medications. I hope to counter the discourse with the evidence I have produced in this study, which clearly demonstrates that discretionary work (which often breaks rules) is a critical element of safe nursing practice.

I have illustrated that there is a disquieting disjuncture between theoretical, ideological accounts of medication work and the actual practices of nurses working on

the ground. Intersecting, competing knowledge frames are at work between what nurses know from their location embedded as they are in the messiness of the everyday world, and from what others know from their own location, theorizing and producing evidence to support best practices. For instance, I demonstrated how nurses' systematic medication work was interjected with other work, as their attention was frequently and repeatedly drawn to other labours not directly related to dispensing medications to patients. Disruptions are referred to in the dominant safety discourse as interruptions and distractions, and are a key target for elimination in the effort to improve safety (CARNA, 2014a; Potter et al., 2014; Raban & Westbrook, 2014; Tucker & Spear, 2006). However, as my data illustrate, the incessant disruptions and subsequent discretionary work that I observed are integral to the broader terrain of nursing work. As on-the-spot experts, nurses constantly use specialized knowledge and judgment to determine what is required of them in the moment to ensure safe, appropriate patient care. Continuing efforts to organize interruptions and distractions out of nursing work may allow some aspects of it to move forward more seamlessly; however, the work will be fundamentally changed, and the consequences of that are largely unknown. The primary concern with these and other ideologically based initiatives is that externally derived systems of knowledge supersede what nurses know about their own work and dominate the delivery of health care.

Finally, rule-based systems and standardized processes have gained a taken-for-granted status in the discourse, and dominate ideological practices controlling medication work. My analysis explicates how one of these uncritically accepted rules, the two-client-identifiers process, is derived from imperfect and flawed evidence. Although I examined

the two-client-identifiers process in this study, any number of ideologically based rules could have been dissected to illustrate this point. Although beyond the scope of this project, the practice of double checking medication doses provided another example of a rule derived from inconsistent evidence. In one of my research study settings, nurses were required to have every dose of narcotic medication that they administered double checked. This is a more rigorous obligation than what is recommended in the literature or in many other hospital settings (ISMP, 2003, 2005a, 2013b; "Santa Checks," 2009; White et al., 2010). This extremely stringent requirement proved difficult and at times impossible for nurses to accomplish in their practice, particularly during off-peak hours or in areas where few nurses were working. Although I did not trace the extralocal relations, I did learn that the practice was instituted following a serious medication error that occurred several years earlier in another area of the hospital.

Ultimately, it is not known whether double checking of medication doses leads to improved safety. In their systematic review of the evidence, Asulami, Conroy, and Choonara (2012) concluded, "There is insufficient evidence to either support or refute the practice of double checking the administration of medications" (p. 833). Other authors supported this claim, providing conflicting and inconclusive evidence about the usefulness and efficacy of independent double checks (Armitage, 2008; Dickinson, McCall, Twomey, & James, 2010; Jarman, Jacobs, & Zielinski, 2002). Despite the uncertain outcomes and dubious impact on safety, the policy and practice persist unquestioned and uncontested. Even more troubling is the unknown impact that a stringently applied standard policy, such double checking every administered dose of narcotic medication, has on nursing practice and patient care, particularly as it is well

documented that delays in the administration of narcotic analgesics is a serious problem that results in complications and unnecessary patient suffering (Berry & Dahl, 2000; Lynch, 2011; Yuxiang et al., 2012).

Significance of Findings

Contested knowledge practices. This research provided a detailed analysis of the contested knowledge and medication practices in two acute care hospital settings. Key to understanding nurses' work with medications is recognizing the ruling relations embedded in the ongoing struggle between institutional knowledge practices that are considered legitimate, acceptable, and valid and what nurses know about their own work. Nurses' knowledge is grounded experientially, derived from the materiality of actually doing the work. Knowledge originating in abstract or theoretical realms produces an ideological account, which may contrast sharply with what nurses know. Although different modes of knowing have the potential to contribute to the development of a comprehensive, inclusive account of medication work, difficulties surface when one mode of knowledge subordinates the knowledge practices of nurses who are at the centre of medication work. My empirical data illustrate what happens inside nurses' medication work when ideological safety initiatives dominate health care practice, and nurses' knowledge about their own work is suppressed.

This research calls attention to nurses as knowing subjects of their own actions, highlights taken-for-granted components of nursing work, and contributes to the emerging body of knowledge about what nurses do. It is distinctive because I focus on the materiality of nursing work, rather than on what is presumed to be happening, what others understand about nursing work, or what nurses say about what they are doing. As

nurses are also captured by ideological descriptions and discourse, they themselves gloss over their own knowledgeable practices. This is reflected in their dialogue when they dismiss their expertise as routine and their informed actions as simply "happening" (RN Karen). Competently performed, everyday medication work has a taken-for-granted character that appears effortless.

Recall RN Judy and the intelligent, intricate work she did to ensure that the correct medications are given to the correct patients, according to priority, and within the broader context of everything happening on the hospital unit. Judy balanced the needs of one patient against the next, managed a number of routine yet significant issues, searched out medications that were not readily available, calmed and settled patients so they could take their medications safely, verified the appropriateness of ordered medications, alerted the physician and others to urgent concerns, learned each patient's idiosyncrasies and adapted the institutional regime to accommodate them, acted as a resource to less experienced team members, and so on. Judy demonstrated a multiplicity of thinking and doing in her actions, which appeared effortless and seamless but which required expertise and proficiency to accomplish. Nevertheless, in dialogue with Judy and other nurses about similar activities, they described their actions as simply "making it happen" (RN Karen). All of their essential but unrecognized work recedes into the background and is only brought into focus through careful observation. Predictably, when nurses themselves do not recognize and cannot articulate their vital contributions to safe patient care, their work remains unrecognized by others. Medication work processes that are not known to others will not be recognized, measured, or captured in attempts to understand nursing

work. Consequently, medication practices are primarily informed by ideological accounts, even when nurses are consulted.

Recognizing knowledge as a socially organized practice, derived from a particular location, helps to explain how medication work can be constructed as a step-wise, discrete process when nurses know it does not work this way. The linear conceptualization of medication work has important consequences for nurses. When work can be broken down into discrete tasks, each step can be scrutinized and dissected, producing certain institutional advantages. Arising out of economic restrictions and the desire for increased managerial control over all health care resources, nursing work is a prime target for scrutiny and reorganization (Melon, 2012; Rankin, 2001, 2009). Reorganizing medication work practices for efficiency becomes possible when nursing work can be understood and managed by cataloguing tasks into predetermined textual descriptions and compressing tasks more tightly. Nursing work, a costly resource, is easier to manage and control within this ideological frame.

Embedded in the discourse is the notion that inefficiencies and other challenges can be solved by "fixing" nurses, at least in part. For instance, in a quality improvement project aimed at identifying and reducing "avoidable" (Buchini & Quattrin, 2012, p. 326) interruptions, the authors proposed a number of system-wide and nursing solutions. Some of the proposed solutions suggested nurses avoid phone calls, avoid the management of patient call bells, reduce information requests from patients and families, reduce requests from doctors or other colleagues, and so on. While there is much that nurses can do to organize their own work environment, disruptions are often the result of unfolding or ongoing contingencies and are outside of nurses' control. Recall RN Judy, whose work

was disrupted several times by phone calls, patient call bells, and requests from co-workers. If Judy had ignored the needs arising in the moment to focus solely on medication work (as much as it is possible to do), she would have missed the opportunity to clarify a doctor's order, a patient would have suffered in pain for an additional 30 minutes, and a critical heart dysrhythmia may have been missed by an inexperienced colleague. Attempts to reduce interruptions overlook what is actually happening on the ground and are unlikely to succeed, as nurses continue to pay attention to these valid in-the-moment demands on their time and attention. While there is certainly merit to quality improvement initiatives of this sort, nurses have expert knowledge about patients and safe medication work that is equally important to consider, and their perspectives are critical for developing a more nuanced understanding of medication work.

Grounding this analysis in the standpoint of nurses, I provide a detailed investigation of the knowledgeable work processes that characterize medication work. Dominant discourses of patient safety, efficiency, professionalism, and standards of practice comprise a ruling apparatus that influences and controls nursing work. While ruling relations organized a great deal of nursing talk and activity, they did not completely dominate the work. Nurses worked in ways that opposed ruling at times, although not always openly. Nurses had little choice but to outwardly comply with safety and quality initiatives, embedded as they are in regulatory frames that are used to judge their competent practice. Unsanctioned work practices were widespread, but not overtly displayed to others. Nurses themselves were very aware of when their work deviated from authorized ways of working, and would comment, "I know I'm not supposed to do it this way" (LPN Brenda) or "I know I should be doing this instead" (RN Mindy),

offering unsolicited explanations to justify their actions. Nurses also repaired records, creating accounts that bore little resemblance to what actually happened within their work. Covering over their actual ways of working may be an expedient way for nurses to avoid confrontation and condemnation, but doing so also conceals the knowledgeable work practices that nurses routinely employ. Nurses themselves must begin to understand that their knowledge is "as good" as the knowledge that others have, engage honestly in dialogue, and openly critique practices that enforce ideological versions of their work. The foundation for this must be laid early on, in the educational process for nurses. It will be critical for me to share these findings with nurse educators through scholarly writing, conference presentations and workshop activities, and to engage others in discussions about the implications that result when nurses do not have confidence in their own knowledge and reinforce ideological notions that constrain work. This analysis, illustrating how troubles and difficulties in medication work are organized, offers nurses in all areas of practice a way to formulate a critique and respond to others, using what they know.

Textual production of knowledge: Virtual reality. Textual representations of how nursing work occurs become the authorized way of knowing and are accepted as fact. When something is recorded in text, it substitutes for reality, even if it bears little resemblance to what actually happens in daily practice. In my research observations, nurses frequently created inaccurate records, documented on-time medication administration when medications were not dispensed on time, initialled to verify that they had double checked a medication dose when they had not, and so on. Nurses do not intend to be subversive or insubordinate when they repair records in this way. Rather, the

nurses create a record that adheres to the authorized account of their work as a means to expedite the process to allow them to accomplish tasks faster and more efficiently. For example, if a medication is administered outside of the ordered timeframe, policy directives require the nurse to note the time the medication was given and provide a reason for the deviation. Recall the MAR (see Appendix F), a streamlined text that can be read, used, and worked on quickly and briefly. Note the tiny boxes that provide room for initials, and leave little space for commentary or contextual data. There is simply not enough space to record reasons for late administration, which is often necessary when patients refuse medications, are unable to take them, are absent from the unit at the time of administration, and so on. Nurses know that those delays and details are generally bureaucratic and inconsequential to patient care. Moreover, the MAR easily becomes messy and difficult to read if too much additional information is squeezed in. Nurses know that the cleaner the MAR is, the safer it is to use. Additionally, a clinical learning report[24] is required whenever a medication is administered late. All of that record keeping takes time and effort, and, in the cases I observed, nurses judged the recording processes to be irrelevant to clinical outcomes. Therefore, the official processes were rarely followed, as nurses simply created accounts that "fit" the authorized version. Although records were not always accurate, nurses consistently created clinically useful patient records. Even so, repaired records contribute to the problematic creation of a virtual reality in which medication work apparently unfolds smoothly and seamlessly.

[24] A clinical learning report is commonly referred to as an *incident report* and is used to provide information about medication errors and other incidents related to patient safety. The language of the clinical learning report reflects the intent to learn from mistakes rather than blame individuals for their occurrence.

My analysis also demonstrated how textual evidence is produced to support accreditation efforts, which are critical for organizations to demonstrate public accountability. Textual accounts reassure the public that organizations are building processes to ensure safe patient care, and are invested in ongoing improvements. Managers and policy makers may be reassured by accreditation survey results and validated in their belief that the efforts already in place work to improve safety. The survey results can be marketed and shown to others as a demonstration of their good performance. For instance, yearly accreditation reports highlight the notable improvements that have been made in various performance measures each year, and commend organizations for their excellent work in demonstrating ongoing improvements in safety (e.g., see Accreditation Canada, 2011). However, my analysis shows that the evidence generated for accreditation surveys is fundamentally flawed. The criteria and indicators are limited in their conceptualization of safety and the review processes themselves fail to discover large aspects of what is being done (or not done) that results in patient safety or risk.

The obvious caveat is that when health care leadership's understanding of what is happening is flawed because it is based on incomplete or incorrect data, the decisions that are made as a result will also be flawed. Leaders and policy makers, relying on the evidence produced through aggregated systems of measurement and other aggregated tools, assume that ideologically derived practices are working to the benefit of patient safety. This reinforces the discourse and further entrenches those practices within medication work, making it even more difficult to disrupt. In order to make real inroads in improving patient safety, it is critical to have a more accurate representation of

medication work at the outset. Sharing these findings with national policy makers working within organizations such as Accreditation Canada would be a first step in attempting to disrupt the discourse around the dominance of performance measurement tools.

The social organization of rule breaking. In this research, I produced an analytic map demonstrating how nurses are organized to "break the rules" that dominate their work with medications. Nurses are caught in a troubling quandary, as they attempt to adhere to rules and comply with professional ideals and standards while simultaneously providing safe, appropriate patient care that sometimes requires subversion of the rules. Time and again, nurses are compelled to either forego discretion to adhere to standardized practices or they are organized to make a decision to break the rules in order to ensure the smooth unfolding of patient care. This fundamental contradiction produces tension for nurses and troubling consequences for patients.

As more emphasis is placed on strict adherence to procedure, thinking and discretionary actions are in danger of being organized out of medication work. Recall Nurse Manager Tammy's experience with a completely rule-driven nurse, who refused to administer an over-the-counter analgesic (plain Tylenol) because she did not have a physician's order for its administration. Tammy remained in pain overnight, frustrated and angry, as she tried to argue her point with the nurse. Clearly, Tammy's experience provides an example of poor and unsafe care, both from a nursing and institutional perspective. The nurse caring for Tammy followed the rules without allowing her thinking or judgment to disrupt an ideologically based protocol, likely fearful of reprimand. Institutional policies and procedures are not intended to put barriers to

appropriate care in place. They are not meant to place limits on discretionary thinking and expertise; however, when rigidly adhered to, standardized rules and protocols can seriously disrupt medication work.

The rule-bound nurse rarely appeared in my observations of informants. Instead, I most often observed the frequent and intelligent discretionary actions that required rule breaking. In contrast to the actions of the rule bound nurse, discretionary work produced positive outcomes for patients. I watched as nurses treated pain without delaying the dose until a colleague was available to double check it, set up an unauthorized workspace in patient lounges to be able to administer medications to patients as quickly as possible, accessed medications from a secret stash when they were not available in any of the institutional stores, and so on. All of these knowledgeable activities broke rules, but also maintained a smooth workflow focused on patients. Rule breaking did not equate to diminished safety in any of the occurrences that I observed. Instead, the impact on patients was primarily positive, as the evolving needs of patients, families, and the entirety of the work setting organized nursing work in the moment. As Alper et al. (2012) found in their research, violations are often necessary and desirable, particularly in instances where rule compliance would slow down processes. However, rule breaking has consequences to nurses, both potential and actual.

When nurses are found to be breaking rules, they may be constructed as sloppy, incompetent, or deficient, even inside their own consciousness and professional identity. A number of informants referred to their practice as bad or awful when telling me about occasions when it was necessary for them to work outside sanctioned processes. All of the nurses I observed were trying hard to do what they know is right, to comply with

standards and professional expectations, and to produce what patients need from nurses. When nurses are unable to provide good patient care while simultaneously using authorized work practices, they suffer feelings of guilt and inadequacy. Nurses are troubled about rule breaking for many reasons: they know that their practice is measured for adherence to standards, and they are aware they can be held accountable for their actions, may be disciplined, and may be seen as a sloppy or as a bad nurse. I do want to make it clear that while I value, respect, and admire nurses and the work they do, I am not an apologist. I recognize that there certainly are moments of sloppy or lazy nursing care. Not all nurses are careful and thoughtful, and many nurses have moments of carelessness. However, my analytic point is that, in the main, rule breaking happens within a really complex social organization, not within individual nursing practice. Moreover, the established systems are effective in their ability to screen and monitor for the nurse whose practice is substandard. RN Jasmine, a member of the regulatory body's conduct committee, explained,

> We are getting more and more rules all the time, and they make it harder for the nurse to do her job. But I am thankful for them, because of what I see here. There are times when the nit-picky rules are good, because it is a way that can actually stop someone who needs to be stopped. (RN Jasmine)

When nurses are positioned as rule breakers, it can also create contentious relationships with other health care practitioners and leaders. For instance, nurses are criticized and blamed for keeping secret stashes of medications hidden on patient care units. This practice evolved to allow for easier access to needed medications when pharmacy services are not available, but is strictly forbidden. "Unauthorized medication collections create hazards" (McLarney, Cashin, Cashin, Colegrave, & Luscombe, 2012, pp. 25–26), since they are outside the control and monitoring of the Pharmacy

department. Both study units kept an unauthorized collection of medications secreted away, fully aware that the collection was not allowed. One nurse explained that the pharmacist would hunt down the stash occasionally and confiscate the medications, but nurses would build the collection again. This was not to circumvent established safety procedures, but simply to ensure that patients received needed medications without disrupting their care or consuming excessive nursing time. Nurses are the ones who are hunting down needed medications when there is limited access, a time-consuming and frustrating process. RN Allison explained,

> Pharmacy doesn't like it, but the reality is that there's times when you need something that's not there, and you don't have time to wait. We don't keep any narcotics in there, just medications that aren't in stock like, Pantoloc and ASA [acetylsalicylic acid or aspirin] oral antibiotics. We used to keep it in the cupboard, but Pharmacy would come along and take it. Now we have it in a locked drawer so they can't get at it. (RN Allison)

Rather than working collaboratively to solve the problem of limited access to necessary medications, a dynamic is set up in which nurses are hiding medications and are frustrated that other health care practitioners do not understand why the stash is necessary; pharmacists are then confiscating medications and are frustrated that nurses are wilfully breaking rules. A more effective strategy would be for nurses and pharmacists to talk through the problem, find potential solutions together, and to come to an agreement that works for both parties. A committee could be formed to accomplish this, or the existing Pharmacy and Therapeutics committee could provide the necessary structure to address the concerns. The most critical aspect, however, is to ensure representation from nurses and pharmacists who are actually doing the work, so the issues on the ground can be explored and viable solutions can be implemented.

Rules are necessary to health care organizations and provide much needed structure, but as institutions become more inflexible, they become less amenable to adaptation. Medication systems are trending toward the introduction of technologies that promise to standardize and tighten processes even further. As processes tighten, nursing work is further constrained, well-established work processes may be squeezed out, and it becomes more difficult for practitioners to utilize their professional discretion. This analysis demonstrates that rigid rules, institutionally authorized, are problematic for nursing work and patient care.

Implications and Recommendations for Future Research

In this project, I provided a description of what nurses actually do as they work with medications and explicated aspects of the work that are taken for granted and are difficult to articulate. This careful description alone would be valuable, as an accurate account of the contributions that nurses make assists the profession to gain recognition and develop a "voice of agency" (Buresh & Gordon, 2006, p. 28). However, this analysis went beyond description to illustrate "how ruling gets done" (Ng, 2006, p. 187) and to make the links between a common everyday work practice and the broader health policy, economic, political, and historical systems that coordinate that work. This is particularly important as new processes and technological practices are introduced, changing how nursing work is accomplished. "A prerequisite for developing and changing nursing practice is determining what is actually occurring" (Ellefson & Kim, 2004, p. 115), a way of knowing offered though this inquiry. My goal is to disseminate the findings of this research broadly, calling attention to the critical contributions that nurses make. I am hopeful that my efforts will be used in a very pragmatic way.

Implications for nurses. This analysis will assist nurses to recognize the work that they are engaged in as knowledgeable practice, vital to the broader project of safe medication work. What is accepted as automatic, routine practice is highlighted so that nurses and others can begin to appreciate the complexity and intricacy of the work. Most RNs in Canada receive a publication from the national nursing organization called *Canadian Nurse* (2014), which publishes research findings as well as key updates and messages about important events occurring in health care nationally. Submitting an article to this journal would be one strategy I could use to disseminate key messages to nurses in Canada about the findings derived from this research, and the implications that their work has for patient safety in this country. Although there is no national publication for LPNs, *CARE* magazine, published by the College of Licensed Practical Nurses of Alberta (2014), could potentially serve a similar purpose. My goal is for many nurses to take up the key messages from this research and begin to talk about their work in a material way.

This analysis will also provide validation for nurses trying to reconcile the moral distress they often experience about their practice. One nurse who read this analysis in an earlier form commented,

> Thank you! I always thought it was just me who was sloppy and a bad nurse for breaking rules, but I didn't know what else to do. . . . I had to do that sometimes to get things done properly. How I got there wasn't as faithful to what the book said, as I wanted it to be. I lost confidence in myself because I knew I wasn't doing what the book said. I wouldn't talk about my successes as much. . . . I recognize everything you say, and it makes me feel as though I'm not just a bad nurse. (RN Jasmine)

Showing nurses how processes, system influences, and ruling relations are activated in highly contradictory ways will enable them to understand how they are

implicated in socially organized practices. This understanding can provide language and the tools for nurses to "talk back and act back" (Rankin, 2009, p. 275) in order to change practice. Nurses need to be able to speak about their work in a material way, critique ideological practices, and lobby for changes that are compatible with the realities of the practice setting. For instance, nurses could influence policy development around problematic processes such as standardized medication times, double checking of medication doses when working alone, and patient identification. The analysis in this dissertation can assist nurses to influence such changes.

Other nurses who have read my developing analysis are also interested in the findings. As I talk with informants and colleagues about what I am learning through this research project, I am energized by the positive responses I receive and the way my findings resonate with a broad cross section of nurses. I am planning to present the key findings at national and international nursing conferences in the near future. My goal is to make the findings relevant to nurses and the concerns they have about their work with medications. I am hopeful that the interest I have seen as I have shared preliminary findings will translate into critical dialogue among a broader nursing audience, within sites of resistance, and political action in each nurse's own practice setting.

Implications for nurse educators. The findings from this study are also useful to nurse educators. A better understanding of the pragmatic knowledge and actualities of medication work can help educators to mediate reality with the authorized ways of knowing it. This is not a new problem in nursing education. Much has been written about what is termed the *theory practice gap*: the disconnect between what is taught in the classroom and how care is actually delivered in practice (Eggertson, 2013; Landers,

2000; Rolfe, 1998). Ideological, theoretical accounts dominate in nursing education, leaving student nurses ill prepared for the realities of practice, and without the tools to negotiate the context easily. It is critical for nurse educators to remain grounded in the materiality of medication work, and provide students with the tools they need to succeed in clinical practice settings. Talking to students about how medication work actually unfolds in practice settings is critical. For example, teaching students about the essentially disrupted nature of medication work and providing them with concrete strategies to manage disruptions validates reality and more closely represents what is actually happening in practice. It is futile and counterproductive for educators to simply admonish students and advise them to avoid interruptions.

As a nurse educator, this is a point of resistance for me. In the early stages of this research, when I was reviewing the literature and beginning to locate my own study within that context, I began a critical analysis of the literature around math calculations for medication practice. Another nursing teacher who questioned the stringent math requirements that are commonly considered to be a foundational nursing skill sparked my interest. I discussed what I was learning with my research supervisors and other colleagues and, with their support, began to trouble the certainty with which math exams are believed to measure safe medication practice. In 2011, along with Dr. J. Rankin and Dr. A. Lane, I published a paper critiquing math exam practices, showing how the reasoning and evidence supporting math skills as a core nursing competency are seriously flawed (Dyjur et al., 2011).

At the same time, my own educational institution required student nurses to achieve a 90% pass rate on yearly math tests. Students were allowed two attempts, but if

they failed to achieve the pass rate, they suffered the serious consequence of failing the course they were currently enrolled in. Over the years, I had the extremely disturbing experience of watching a number of fourth-year students fail to graduate because they failed their math exams. As their clinical practice teacher, I could see no discernible difference in their work with medications than students who had successfully passed the math exams. I began to critique math exam practices openly, present critical analyses to others, and actively lobby for change. As a result, my nursing program changed the stringent math policy to allow for a more tempered approach. It was not easy to disrupt the math competency discourse, and over time I can see it creeping back into educators' talk. I will continue to trouble the discourse in my own educational practice, providing other educators with the tools to critique the disjunctures inherent in teaching beginning nurses.

Implications for health care organizations and policy development. My analysis seeks to change the balance of power and highlight the largely unknown and unspoken knowledge practices that are critically important to how things work on the ground. It is essential for health care managers attempting to understand and improve patient care to pay close attention to the materiality of nursing work and consider carefully what nurses know about how their work unfolds. Introducing change without a clear, comprehensive understanding of the nursing work it is attempting to reorganize is counterproductive and can fundamentally change practice in unknown and unintended ways, yet it is commonplace for that to happen. One strategy that nurse leaders could implement would be to actively involve nurses in initiatives that have the potential to impact their work, and seek their input in a variety of ways. Nurses who are actually

engaged in medication work could be invited to join committees, work on various initiatives, provide feedback about proposed changes, and so on. Observing nursing work and inquiring about difficulties and challenges would also be helpful to understand the materiality of the work.

It is important for nurse leaders to acknowledge and understand the circumstances that are creating the need to break rules in medication work, to resist the pressure to standardize work processes, and to build in solutions to support nurses in their safety work. One way this could be accomplished is through the development of individualized, flexible policies and procedural guidelines that allow for discretionary practices to occur. For instance, the strict standardized policies around timing of medications could be relaxed, an action that has already been recommended by the ISMP (2011) to allow for more nursing judgment. The guidelines could be written so that there is leeway for nurses to use their judgement about which medications should be given strictly on time and which medications can be delayed without clinical consequences to the patient. As I demonstrated in my analysis, nurses already do this with competence in actual practice. Flexible guidelines that more closely mirror the reality of knowledgeable medication work would authorize material practices and allow for a more authentic representation of nursing work.

To influence the development of policies and regulations that impact medication work, nurses and nurse leaders could respond to the call for input when new guidelines are being developed or when committees and working groups are formed at the regulatory level. For instance, when the medication administration guidelines were being reviewed by the provincial regulatory body (CARNA, 2014a), policy makers sought

input from every RN in Alberta. Immersed as I was at the time in this project, I reviewed the proposed changes with great interest and submitted my response. I also encouraged others to do the same, and I will continue to look for opportunities to influence policy development.

Implications for future research. Technologies are entrenching further into health care (Rankin & Campbell, 2014), but have not infiltrated everywhere at this point. Both of the study settings in this research were technology poor, using pen and paper documentation systems, unit dosing, and so on. This research captured a moment in history, detailing the work that nurses are engaged in prior to the introduction of technological changes such as computerized charting or bar-coded medication administration systems. That is important because once technologies or new processes are introduced, work processes change and knowledgeable practices may be lost completely (see Boonen, In progress). Future research projects, situated in technologically advanced settings, are needed to build the analysis that I have started here.

Although beyond the scope of this research, the discourse around expert nurses was evident in some of the medication literature. The novice-to-expert model developed by Patricia Benner (1982) is often used to describe the process of learning to practice nursing. This theoretical model characterizes beginning nurses as rule followers, while expert nurses are characterized as responsive to evolving situations and are able to engage in "thinking-in-action" (Benner, Hooper-Kryiakidis, & Stannard, 1999). I did not attempt to apply this or any other theoretical model to my data. However, it may be

relevant to note that regardless of years of experience,[25] the same kinds of troubles and difficulties surfaced in the medication work of all nurses in the study. In future projects it may be useful to investigate medication work as it arises in beginning nurses' practice, linked as it is to the practices of more seasoned practitioners.

Limitations of the Research

It should be noted that it is not possible to trace out the entire institutional complex in a single study, nor was that the goal of this research. The complex web of relations and processes that can be traced out from the local setting is large, interconnected, and always in motion (Smith, 2005), rendering it impossible to explore fully within one or even many studies. Instead, I have mapped out a particular piece of the institution. The lack of natural boundaries can be difficult for the researcher, as potentially the inquiry could go on indefinitely, tracking further into the institution. George W. Smith (1990) acknowledged this dilemma and explained, "At some juncture in the research . . . I had to determine that the state of my knowledge was adequate for the purpose of describing the lineaments of a regime" (p. 646). I found it difficult to determine what threads to let go of and which to pursue, as they all held important implications for nurses' time and work. Ultimately, I followed the leads that yielded useful data, and I plan to pursue other leads in subsequent research projects.

[25] Fifteen nurses participated in my research study, ranging in years of experience from 3–38 years. The majority had 15 years or more work experience, and six nurses had 6 or less years of experience.

Conclusion

I argue that the routinized time-intensive quality improvement initiatives require nurses to respond to ideological interests that arise outside of the local setting in which their work takes place. While it is apparent that all health practitioners are committed to supporting a safe practice environment, current initiatives, formulated within a theorized or conceptual view of safety and disciplined within regulatory and accountability systems, cannot and do not accommodate the real world of nursing, yet they serve to organize nursing work in highly contradictory ways. Safety and quality initiatives generally do not arise from an intimate knowledge of how acute care nursing unfolds, in the local setting where it happens. Moreover, ideological approaches to safety and quality will never be able to accommodate the knowledgeable discretionary work that is integral to nursing practice. Increasingly scrutinized, and monitored for adherence to the ideological formulations of safety, nurses are obliged to adopt standardized, automatic processes that are meant to make systems consistent and fail safe. When nurses are organized to forego discretion in favour of disciplined, standardized practices vested in texts and technologies, nurses' consciousness is reorganized. Knowledgeable, engaged, interested, responsive nursing work that is critical to patient safety is obfuscated.

The kinds of strategies that nurses, as expert knowers of their own practice, use to keep patients safe are not well understood. As scrutiny on nurses' adherence to safety initiatives is intensified, how nurses actually produce a terrain of safe care may be lost. This dissertation provided an important glimpse into how this organization is happening, and provided a more nuanced understanding of medication work. This research is a caveat for people interested in quality and safety to look beyond the theorized and

abstracted formulations of error and safety, to refrain from separating medication work from its embedded place in the broader practice, to consult with nurses in front-line practice, and to develop more robust ethnographic understandings of nurses' contributions to safe patient care. I argue that this would result in more realistic strategies to reduce errors and keep patients safe.

References

Accreditation Canada. (2009). *2009 Canadian health accreditation report: A focus on patient safety*. Ottawa, Canada: Queen's Printer.

Accreditation Canada. (2011). *How safe are Canadian health care organizations? 2011 report on required organizational practices*. Ottawa, Canada: Queen's Printer.

Accreditation Canada. (2012a). *Canadian health accreditation report. Required organizational practices: Emerging risks, focused improvements*. Ottawa, Canada: Queen's Printer.

Accreditation Canada. (2012b). *Patient safety strategy. Phase 3: Achieving safe care 2012–2014.* Ottawa, Canada: Queen's Printer.

Accreditation Canada. (2013a). *Qmentum.* Retrieved from http://www.accreditation.ca/qmentum

Accreditation Canada. (2013b). *Required organizational practices handbook 2014.* Ottawa, Retrieved from http://www.accreditation.ca/sites/default/files/rop-handbook-2014-en.pdf

Accreditation Canada International. (n.d.). *Patient safety/ROPs*. Retrieved from http://www.internationalaccreditation.ca/accreditation/patientsafety.aspx

Akram, G., & Mullen, A. B. (2011). Paediatric nurses' knowledge and practice of mixing medication into foodstuff. *International Journal of Pharmacy Practice, 20,* 191–198. http://dx.doi.org/10.1111/j.2042-7174.2011.00179.x

Alberta Health & Wellness. (2008). *Mandatory accreditation in Alberta's health system* (Directive D5-2008). Retrieved from http://www.health.alberta.ca/documents/Directive-D5-2008-Accreditation.pdf

Allen, D. (2004). Re-reading nursing and re-writing practice: Towards an empirically based reformulation of the nursing mandate. *Nursing Inquiry, 11*, 271–283. http://dx.doi.org/10.1111/j.1440-1800.2004.00234.x

Allen, D., & Pilnick, A. (2005). Making connections: Healthcare as a case study in the social organization of work. *Sociology of Health & Illness, 27*, 683–700.

Alper, S. J., Holden, R. J., Scanlon, M. C., Patel, N., Kaushal, R., Skibinski, K., . . . Karsh, B.-T. (2012). Self reported violations during medication administration in two pediatric hospitals. *British Medical Journal Quality & Safety, 21*, 408–415. http://dx.doi.org/10.1136/bmjqs-2011-000007

Anderson, D. J., & Webster, C. S. (2001). A systems approach to the reduction of medication error on the hospital ward. *Journal of Advanced Nursing, 35*, 34–41. http://dx.doi.org/10.1046/j.1365-2648.2001.01820.x

Armitage, G. (2008). Double checking medicines: Defense against error or contributing factor? *Journal of Evaluation in Clinical Practice, 14*, 512–519. http://dx.doi.org/10.1111/j.1365-2753.2007.00907.x

Ash, J. S., Sittig, D. F., Dykstra, R. H., Guappone, K., Carpenter, J. D., & Seshadri, V. (2007). Categorizing the unintended sociological consequences of computerized provider order entry. *International Journal of Medical Informatics, 76S*, S21–S27. http://dx.doi.org/10.1016/j.ijmedinf.2006.05.017

Aspden, P., Corrigan, J. M., Wolcott, J., & Erickson, S. M. (Eds.). (2004). *Patient safety: Achieving a new standard for care: Executive summary*. Retrieved from http://www.nap.edu/catalog/10863.html

Aspden, P., Wolcott, J., Bootman, J. L., & Cronenwett, L. R. (Eds.). (2007). *Preventing medication errors: Quality chasm series.* Washington, DC: National Academies Press.

Asulami, Z., Conroy, S., & Choonara, I. (2012). Double checking the administration of medications: What is the evidence? A systematic review. *Archives of Disease in Childhood, 97,* 833–837. http://dx.doi.org/10.1136/archdischild-20111-301093

Attree, M., & Newbold, D. (2009). Risk, safety, and reliability. From cult to culture? *Journal of Nursing Management, 17,* 145–150. http://dx.doi.org/10.1111/j.1365-2834.2009.01000.x

Australian Commission on Safety and Quality in Health Care. (2008, October). *Technology solutions to patient misidentification: Report of review*. Retrieved from http://www.safetyandquality.gov.au/wp-content/uploads/2012/01/19794-TechnologyReview1.pdf

Australian Commission on Safety and Quality in Health Care. (2014). *Australian Commission on Safety and Quality in Health Care.* Retrieved from http://www.safetyandquality.gov.au/

Baker, H. M. (1995). *Nurses, medications and medication errors: An ethnomethodological study.* Unpublished doctoral dissertation, Central Queensland University, Queensland, Australia.

Baker, G. R., & Norton, P. (2003). *Patient safety and healthcare error in the Canadian healthcare system: A systematic review and analysis of leading practices in Canada with reference to key initiatives elsewhere.* Ottawa, Canada: Queen's Printer.

Baker, G. R., Norton, P. G., Flintoft, V., Blais, R., Brown, A., Cox, J., . . . Tamblyn, R. (2004). The Canadian adverse events study: The incidence of adverse events among hospital patients in Canada. *Canadian Medical Association Journal, 170,* 1678–1685. http://dx.doi.org/10.1503/cmaj.1040498

Ball, M. J., Weaver, C., & Abbott, P. A. (2003). Enabling technologies promise to revitalize the role of nursing in an era of patient safety. *International Journal of Medical Informatics, 69,* 29–38.

Ballard, K. A. (2003). Patient safety: A shared responsibility. *Online Journal of Issues in Nursing*, *8*(3). Retrieved from http://www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume82003/No3Sept2003/PatientSafety.aspx

Barber, N., Cornford, T., & Klecun, E. (2007). Qualitative evaluation of an electronic prescribing and administration system. *Quality & Safety in Health Care, 16,* 271–278. http://dx.doi.org/10.1136/qshc.2006.019505

Beaney, A. M. (2010). Preparation of parenteral medicines in clinical areas: How can the risks be managed – a UK perspective? *Journal of Clinical Nursing, 19*, 1569–1577. http://dx.doi.org/10.1111/j.1365-2702.2010.03195.x

Bedouch, P., Allenet, B., Grass, A., Labarère, J., Brudieu, E., Bosson, J.-L., & Calop, J. (2009). Drug-related problems in medical wards with a computerized physician order entry system. *Journal of Clinical Pharmacy and Therapeutics, 34*, 187–195. http://dx.doi.org/10.1111/j.1365-2710.2008.00990.x

Bell, N. M., & Campbell, M. L. (2003). A child's death: Lessons from health care providers' texts. *Journal of Sociology and Social Welfare, 30*(1), 113–126.

Benner, P. (1982). From novice to expert. *The American Journal of Nursing, 82*, 402–407.

Benner, P., Hooper Kyriakidis, P., & Stannard, D. (1999). *Clinical wisdom & interventions in critical care: A thinking-in-action approach*. New York, NY: Springer.

Berry, P. H., & Dahl, J. L. (2000). The new JCAHO pain standards: Implications for pain management nurses. *Pain Management Nursing, 1*, 3–12. http://dx.doi.org/10.1053/jpmn.2000.5833

Besner, J., Doran, D., McGillis Hall, L., Giovanetti, P., Girard, F., Hill, W., . . . Watson, L. (2005). *A systematic approach to maximizing nursing scopes of practice*. Retrieved from http://www.albertahealthservices.ca/Researchers/if-res-hswru-mnsop-final-report-2005.pdf

Bisaillon, L. (2012). An analytic glossary to social inquiry using institutional and political activist ethnography. *International Institute for Qualitative Methodology, 11*, 607–627.

Bobb, A., Gleason, K., Husch, M., Feinglass, J., Yarnold, P. R., & Noskin, G. A. (2004). The epidemiology of prescribing errors: The potential impact of computerized physician order entry. *Archives of Internal Medicine, 164,* 785–792.

Bohomol, E., Ramos, L. H., & D'Innocenzo, M. (2009). Medication errors in an intensive care unit. *Journal of Advanced Nursing, 65*, 1259–1267. http://dx.doi.org/10.1111/j.1365-2648.2009.04979.x

Boonen, M. (In progress). *Nurses in space* (Doctoral dissertation). Tilberg University, the Netherlands.

Brady, A.-M., Malone, A.-M., & Fleming, S. (2009). A literature review of the individual and system factors that contribute to medication errors in nursing practice. *Journal of Nursing Management, 17,* 679–697. http://dx.doi.org/10.1111/j.1365-2834.2009.00995.x

Brown, C., Hofer, T., Johal, A., Thomson, R., Nicholl, J., Franklin, B. D., & Lilford, R. J. (2008). An epistemology of patient safety research: A framework for study design and interpretation. Part 1. Conceptualizing and developing interventions. *Quality & Safety in Health Care, 17,* 158–162. http://dx.doi.org/10.1136/qshc.2007.023630

Brown, D. J. (2006). Working the system: Re-thinking the institutionally organized role of mothers and the reduction of "risk" in child protection work. *Social Problems, 53,* 352–370. http://dx.doi.org/10.1525/sp.2006.53.3.352

Buchini, A., & Quattrin, R. (2012). Avoidable interruptions during drug administration in an intensive rehabilitation ward: Improvement project. *Journal of Nursing Management, 20,* 326–334. http://dx.doi.org/10.1111/j.1365-2834.2011.01323.x

Bunker Rosdahl, C., & Kowalski, M. (Eds.). (2012). *Textbook of basic nursing* (10th ed.). Philadelphia, PA: Lippincott.

Buresh, B., & Gordon, S. (2006). *From silence to voice: What nurses know and must communicate to the public.* Retrieved from http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1024&context=books

Burke, T. A., McKee, J. R., Wilson, H. C., Donahue, R. M., Batenhorst, A. S., & Pathak, D. S. (2001). A comparison of time-and-motion and self-reporting methods of work measurement. *Journal of Nursing Administration, 30*, 118–125.

Burroughs, T. E., Waterman, A. D., Gallagher, T. H., Waterman, B., Jeffe, D. B., Dunagan, W. C., . . . Fraser, V. J. (2007). Patients' concerns about medical errors during hospitalization. *Journal on Quality and Patient Safety, 33*(1), 5–14.

Butterwick, S., & Dawson, J. (2005). Undone business: Examining the production of academic labour. *Women's Studies International Forum, 28*, 51–65. http://dx.doi.org/10.1016/j.wsif.2005.02.004

Calhoun, C., Gerteis, J., Moody, J., Pfaff, S., & Virk, I. (Eds.). (2007). *Classical sociological theory* (2nd ed.). Malden, MA: Blackwell.

Campbell, M. L. (1994). The structure of stress in nurses' work. In B. S. Bolaria & H. D. Dickinson (Eds.), *Health, illness & health care in Canada* (pp. 592–608). Toronto, Canada: Harcourt Brace.

Campbell, M. L. (1998). Institutional ethnography and experience as data. *Qualitative Sociology, 21*, 55–73. http://dx.doi.org/10.1023/A:1022171325924

Campbell, M. L. (2000). Knowledge, gendered subjectivity, and the restructuring of health care: The case of the disappearing nurse. In S. M. Neysmith (Ed.), *Restructuring caring labour: Discourse, state practice and everyday life* (pp. 187–208). Don Mills, Canada: Oxford University Press.

Campbell, M. L. (2003). Dorothy Smith and knowing the world we live in. *Journal of Sociology and Social Welfare, 30*(1), 3–22.

Campbell, M. L., & Gregor, F. (2004). *Mapping social relations: A primer in doing institutional ethnography*. Walnut Creek, CA: AltaMira Press.

Campbell, M. L., & Manicom, A. (1995). Introduction. In M. L. Campbell & A. Manicom (Eds.), *Knowledge, experience, and ruling relations: Studies in the social organization of knowledge* (pp. 1–17). Toronto, Canada: University of Toronto Press.

Canadian Council for Practical Nurse Regulators. (2013). *Code of ethics for licensed practical nurses in Canada.* St. Johns, Canada: Author.

Canadian Health Services Research Foundation. (2005). *Evaluation of patient safety and nurse staffing*. Ottawa, Canada: Author.

Canadian Institute for Health Information. (2012). *Health care in Canada: A focus on wait times.* Ottawa, Canada: Author.

Canadian Institute for Health Information. (2013). *National health expenditure trends 1975–2013*. Retrieved from https://secure.cihi.ca/free_products/NHEXTrendsReport_EN.pdf

Canadian Nurse. (2014). *Canadian Nurse.* Retrieved from http://www.canadian-nurse.com/

Canadian Nurses Association. (2008a). *Code of ethics for registered nurses.* Ottawa, Canada: Author.

Canadian Nurses Association. (2008b). *Position statement: Canadian regulatory framework for registered nurses*. Ottawa, Canada: Author.

Canadian Nurses Association. (2014). *Competencies*. Retrieved from http://www.cna-aiic.ca/en/becoming-an-rn/rn-exam/competencies

Canadian Nurses Association, & University of Toronto Faculty of Nursing. (2004, January). *Nurses and patient safety: A discussion paper.* Retrieved from http://cna-aiic.ca/~/media/cna/files/en/patient_safety_discussion_paper_e.pdf

Canadian Nurses Protective Society. (2007). Medication errors. *InfoLAWs, 5*(2), 1. Retrieved from http://www.cnps.ca/index.php?page=97

Canadian Nurses Protective Society. (2012). Supervision. *InfoLAWs, 20*(1), 1. Retrieved from http://www.cnps.ca/upload-files/pdf_english/supervision.pdf

Canadian Patient Safety Institute. (2004). *Building the foundation for a safer health system.* Ottawa, Canada: Author.

Canadian Patient Safety Institute, & Accreditation Canada. (2014). *Making care safer from hospital to home: A collaborative report from Accreditation Canada & Canadian Patient Safety Institute*. Ottawa, Canada: Author.

Canadian Pharmacists Association. (2013). *CPS 2013: Compendium of pharmaceuticals and specialities.* Ottawa, Canada: Author.

Canam, C. J. (2008). The link between nursing discourses and nurses' silence: Implications for a knowledge-based discourse for nursing practice. *Advances in Nursing Science, 31*, 296–307.

Carayon, P., Wetterneck, T. B., Hundt, A. S., Ozkaynak, M., DeSilvey, J., Ludwig, B., . . . Rough, S. S. (2007). Evaluation of nurse interaction with bar code medication administration technology in the work environment. *Journal of Patient Safety, 3*, 34–42. http://dx.doi.org/10.1097/PTS.0b013e3180319de7

Cescon, D. W., & Etchells, E. (2008). Barcoded medication administration: A last line of defense. *Journal of the American Medical Association, 299*, 2200–2202. http://dx.doi.org/10.1001/jama.299.18.2200

Chang, Y.-K., & Mark, B. A. (2009). Antecedents of severe and nonsevere medication errors. *Journal of Nursing Scholarship, 41*, 70–78. http://dx.doi.org/10.1111/j.1547-5069.2009.01253.x

Chang, Y. K., & Mark, B. (2011). Effects of learning climate and registered nurse staffing on medication errors. *Nursing Research, 60*, 32–39. http://dx.doi.org/10.1097/NNR.0b013e3181ff73cc

Cheek, J., & Gibson, T. (1996). The discursive construction of the role of the nurse in medication administration: An exploration of the literature. *Nursing Inquiry, 3*, 83–90.

Chua, S. S., Tea, M. H., & Rahman, M. H. A. (2009). An observational study of drug administration errors in a Malaysian hospital (study of drug administration errors). *Journal of Clinical Pharmacy and Therapeutics, 34*, 215–223. http://dx.doi.org/10.1111/j.1365-2710.2008.00997.x

Clancy, C. M. (2007). Mistake proofing in health care: Lessons for ongoing patient safety improvements. *American Journal of Medical Quality, 22*, 463–465. http://dx.doi.org/10.1177/1062860607308146

CMS 30-minute rule may have unintended consequences. (2010). *Nurse Advise-ERR, 87*(7), 1–3.

Cohen, H., & Shastay, A. D. (2009). Getting to the root of medication errors. *Plastic Surgical Nursing, 29*(4), 1–9.

College and Association of Registered Nurses of Alberta. (2003). *Nursing practice standards*. Edmonton, Canada: Author.

College and Association of Registered Nurses of Alberta. (2011). *Scope of practice for Registered Nurses*. Edmonton, Canada: Author.

College and Association of Registered Nurses of Alberta. (2013, May). *Entry-to-practice competencies for the registered nurses profession.* Retrieved from http://www.nurses.ab.ca/content/dam/carna/pdfs/DocumentList/Standards/RN_EntryPracticeCompetencies_May2013.pdf

College and Association of Registered Nurses of Alberta. (2014a, January). *Medication guidelines*. Retrieved from http://www.nurses.ab.ca/content/dam/carna/pdfs/DocumentList/Guidelines/MedicationGuidelines_Jan2014.pdf

College and Association of Registered Nurses of Alberta. (2014b). *The complaint process.* Retrieved from http://www.nurses.ab.ca/content/carna/home/learn-about-carna/complaints---conduct/complaint-process.html

College of Licensed Practical Nurses of Alberta. (2014). *CARE magazine.* Retrieved from http://www.clpna.com/legislation-practice-policy/care-magazine/

College of Nurses of Ontario. (2014). *Medication practice standard.* Retrieved from http://www.cno.org/Global/docs/prac/41007_Medication.pdf

College of Registered Nurses of Nova Scotia. (2014). *Medication guidelines for registered nurses.* Retrieved from https://www.crnns.ca/documents/MedicatonGuidelines.pdf

Conrad, C., Fields, W., McNamara, T., Cone, M., & Atkins, P. (2010). Medication room madness: Calming the chaos. *Journal of Nursing Care Quality, 25*, 137–144.

Controlled Drugs and Substances Act, R.S.C. 1996, c 19 [Canada]. Retrieved from https://www.canlii.org/en/ca/laws/stat/sc-1996-c-19/latest/sc-1996-c-19.html

Cooke, H. (2009). Theories of safety and risk: What is their relevance to nursing? *Journal of Nursing Management, 17*, 256–264. http://dx.doi.org/10.1111/j.1365-2834.2009.00994.x

Crouch, S., Crouch, M., & Chapelhow, C. (2013). *Medicines management: A nursing perspective*. New York, NY: Routledge

D'Antonio, P. (2007). The legacy of domesticity. In P. D'Antonio, E. D. Baer, S. D. Rinker, & J. E. Lynaugh (Eds.), *Nurses' work: Issues across time and place.* (pp. 33–48). New York, NY: Springer.

Debono, D., Greenfield, D., Black, D., & Braithwaite, J. (2010). Workarounds: Straddling or widening gaps in the safe delivery of healthcare. *Proceedings of the 7th International Conference in Organisational Behaviour in Health Care (OBHC)-Mind the Gap: Policy and practice in the reform of health care,* Birmingham, England.

Dennison, R. D. (2007). A medication safety education program to reduce the risk of harm caused by medication errors. *The Journal of Continuing Education in Nursing*, *38*, 176–184.

DeVault, M. L. (1991). Feeding the family: The social organization of caring as gendered work. Chicago, IL: The University of Chicago Press.

DeVault, M. L. (2002). Talking and listening from women's standpoint: Feminist strategies for interviewing and analysis. In D. Weinberg (Ed.), *Qualitative research method*s (pp. 88–111). Malden, MA: Blackwell.

DeVault, M. L. (2008). Introduction. In M. L. DeVault (Ed.), *People at work: Life, power, and social inclusion in the new economy* (pp. 1–22). New York, NY: New York University Press.

DeVault, M. L., & McCoy, L. (2006). Institutional ethnography: Using interviews to investigate ruling relations. In D. E. Smith (Ed.), *Institutional ethnography as practice* (pp. 15–44). Lanham, MD: Rowman & Littlefield.

Diamond, T. (1986). Social policy and everyday life in nursing homes: A critical ethnography. *Social Science & Medicine, 23*, 1287–1295. http://dx.doi.org/10.1016/0277-9536(86)90291-1

Dickinson, A., McCall, E., Twomey, B., & James, N. (2010). Pediatric nurses' understanding of the process and procedure of double-checking medications, *Journal of Clinical Nursing, 19*, 728–735. http://dx.doi.org/10.1111/j.1365-2702.2009.03130.x

Dyjur, L. M., Rankin, J., & Lane, A. (2011). Maths for medications: An analytic exemplar of the social organization of nurses' knowledge. *Nursing Philosophy, 12*, 200–213. http://dx.doi.org/10.1111/j.1466-769X.2011.00493.x

Ebright, P. R., Patterson, E. S., Chalko, B. A., & Render, M. L. (2003). Understanding the complexity of registered nurse work in acute care settings. *Journal of Nursing Administration, 33*, 630–638.

Eggertson, L. (2013). The gap between clinical practice and education. *Canadian Nurse, 109*(7), 22–26.

Ellefsen, B., & Kim, H. S. (2004). Nurses' construction of clinical situations: A study conducted in an acute-care setting in Norway. *Canadian Journal of Nursing Research, 36*, 114–131.

Ellingsen, G., Monteiro, E., & Munkvold, G. (2007). Standardization of work: Co-constructive practice. *The Information Society, 23*, 309–326.

Elliott, M., & Joyce, J. (2005). Mapping drug calculation skills in an undergraduate nursing curriculum. *Nurse Education in Practice, 5*, 225–229. http://dx.doi.org/10.1016/j.nepr.2004.12.003

Eisenhauer, L. A., Hurley, A. C., & Dolan, N. (2007). Nurses' reported thinking during medication administration. *Journal of Nursing Scholarship, 39*, 82–87. http://dx.doi.org/10.1111/j.1547-5069.2007.00148.x

Evetts, J. (2009). New professionalism and new public management: Changes, continuities and consequences. *Comparative Sociology, 8*, 247–266. http://dx.doi.org/10.1163/156913309X421655

Farley, D. O. (2011). *Evaluation of the WHO patient safety solutions aides memoir: Executive summary.* Retrieved from http://www.who.int/patientsafety/implementation/solutions/patientsafety/PSP_H5-Solutions_Report-fnl-sumry_Apr-2012.pdf

Folkmann, L., & Rankin, J. (2010). Nurses' medication work: What do nurses know? *Journal of Clinical Nursing, 19*, 3218–3226. http://dx.doi.org/10.1111/j.1365-2702.2010.03249.x

Foote, S. O., & Coleman, J. R. (2008). Medication administration: The implementation process of bar-coding for medication administration to enhance medication safety. *Nursing Economic$, 26*, 207–211.

Fowler, S. B., Sohler, P., & Zarillo, D. F. (2009). Bar-code technology for medication administration: Medication errors and nurse satisfaction. *MedSurg Nursing, 18*, 103–120.

Frampton, C., Kinsman, G., Thompson, A. K., & Tilleczek, K. (2006). Social movements/social research: Towards political activist ethnography. In C. Frampton, G. Kinsman, A. K. Thompson, & K. Tilleczek (Eds.), *Sociology for changing the world: Social movements/social research* (pp. 1–17). Halifax, Canada: Fernwood.

Furaker, C. (2009). Nurses' everyday activities in hospital care. *Journal of Nursing Management, 17*, 269–277. http://dx.doi.org/10.1111/j.1365-2934.2007.00832.x

Gibson, T. (2001). Nurses and medication error: A discursive reading of the literature. *Nursing Inquiry, 8*, 108–117. http://dx.doi.org/10.1046/j.1440-1800.2001.00098.x

Gorini, A., & Pravettoni, G. (2013). Nurses' violations of a medication administration protocol in Italy: An observational study. *Clinical Nursing Studies, 1*(2), 80–89. http://dx.doi.org/10.5430/cns.v1n2p80

Grahame, P. R., & Grahame, K. M. (2000). Official knowledge and the relations of ruling: Explorations in institutional ethnography[Electronic version]. *Journal for Pedagogy, Pluralism & Practice, 2*(1). Retrieved from http://www.lesley.edu/journal-pedagogy-pluralism-practice/peter-grahame-kamini-grahame/knowledge-relations-ruling/

Grant, M. J. C., & Larsen, G. Y. (2007). Effect of an anonymous reporting system on near-miss and harmful medical error reporting in a pediatric intensive care unit. *Journal of Nursing Care Quality, 22*, 213–221. http://dx.doi.org/10.1097/01.NCQ.0000277777.35395.e0

Griffin, F. A., & Resar, R. K. (2009). *IHI global trigger tool for measuring adverse events* [White paper] (2nd ed.). Cambridge, MA: Institute for Healthcare Improvement.

Grigg, S. J., Garrett, S. K., & Craig, J. B. (2011). A process centered analysis of medication administration: Identifying current methods and potential for improvement. *International Journal of Industrial Ergonomics, 41*, 380–388. http://dx.doi.org/10.1016/j.ergon.2011.01.014

Halbesleben, J. R., Savage, G. T., Wakefield, D. S., & Wakefield, B. J. (2010). Rework and workarounds in nurse medication administration process: Implications for work processes and patient safety. *Health Care Management Review, 35*, 124–133. http://dx.doi.org/10.1097/HMR.0b013e3181d116c2

Halligan, M., & Aleksandra, Z. (2011). Safety culture in health care: A review of concepts, dimensions, measure and progress. *Quality & Safety in Health Care, 20*, 338–343. http://dx.doi.org/10.1136/bmjqs.2010.040964

Harding, A. D. (2012). Increasing the use of 'smart' pump drug libraries by nurses: A continuous quality improvement project. *American Journal of Nursing, 112*(1), 26–35. http://dx.doi.org/10.1097/01.NAJ.0000410360.20567.55

Harding, L., & Petrick, T. (2008). Nursing student medication errors: A retrospective review. *Journal of Nursing Education, 47*, 43–47. http://dx.doi.org/10.3928/01484834-20080101-05

Harne-Britner, S., Kreamer, C. L., Frownfelter, P., Helmuth, A., Lutter, S., Schafer, D. J., & Wilson, C. (2006). Improving medication calculation skills of practicing nurses and senior nursing students. *Journal for Nurses in Staff Development, 22*, 190–195. http://dx.doi.org/10.1097/00124645-200607000-00007

Harrison, D. (2006). The role of military culture in military organizations' responses to woman abuse in military families. *The Sociological Review, 54*, 546–574. http://dx.doi.org/10.1111/j.1467-954X.2006.00629.x

Hassink, T., Jansen, M., & Helmons, P. (2012). Effects of bar code-assisted medication administration (BCMA) on frequency, type and severity of medication administration errors: A review of the literature. *European Journal of Hospital Pharmacy, 19*, 489–494. http://dx.doi.org/10.1136/ejhpharm-2012-000058

Health Canada. (2014). *Drug product database.* Retrieved from http://webprod5.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp

Health Council of Canada. (2007, February). *Health care renewal in Canada: Measuring up?* Retrieved from http://www.healthcouncilcanada.ca/dl_check.php?id=168

Health Council of Canada. (2013). *Which way to quality? Key perspectives on quality improvement in Canadian health care system*. Toronto, Canada: Author.

Health Professions Act, R.S.A., 2000, c. H-7 [Alberta]. Retrieved from http://www.health.alberta.ca/documents/Health-Professions-Act.pdf

Health Region. (2007). *Policy CC-VIII-94, medication therapy – prescribing*. Alberta, Canada: Author.[26]

Health Region. (2009a). *Interim procedure CC-VIII-75, narcotic infusions: Patient controlled analgesia (PCA) or continuous*. Alberta, Canada: Author.[1]

Health Region. (2009b). *Policy CC-VIII-90, medication – preparation, administration, disposal.* Alberta, Canada: Author.[1]

Health Region. (2012). *Patient identity verification* (Policy Level 1, PS-06). Retrieved from https://extranet.ahsnet.ca/teams/policydocuments/1/clp-patient-identity-verification-ps-06-policy.pdf

Heimer, C. A., Coleman Petty, J., & Culyba, R. J. (2005). Risk and rules: The 'legalization' of medicine. In B. Hutter & M. Power (Eds.), *Organizational encounters with risk* (pp. 92–131). Cambridge, United Kingdom: Cambridge University Press.

Hendrickson, G., Doddato, T. M., & Kovner, C. T. (1990). How do nurses use their time? *Journal of Nursing Administration, 20*(3), 31–37.

Hoffman, C., Beard, P., Greenall, J., U, D., White, J. (2006). *Canadian root cause analysis framework: A tool for identifying and addressing the root causes of critical incidents in healthcare.* Retrieved from http://www.paediatricchairs.ca/safety_curriculum/domain6.docs/CPSIRootCauseAnalysisFramework.pdf

[26] The Health Region remains unnamed to protect the anonymity of informants and confidentiality of the information gathered with permitted access.

Holme, A. (2009). Exploring the role of patients in promoting safety: Policy to practice. *British Journal of Nursing, 18,* 1392–1395.

Honey, M., & Lim, A. G. (2008). Application of pharmacology knowledge in medication management by final year undergraduate nursing students. *Contemporary Nurse, 30,* 12–20. http://dx.doi.org/10.5172/conu.673.30.1.12

Hougaard, J. (2004). Developing evidence-based interdisciplinary care standards and implications for improving patient safety. *International Journal of Medical Informatics, 73,* 615–624. http://dx.doi.org/10.1016/j.ijmedinf.2004.04.015

Hughes, R. G., & Blegen, M. A. (2008). Medication administration safety. In, *Patient safety & quality: An evidence based handbook for nurses.* Rockville, MD: Agency for Healthcare Research & Quality.

Hutton, M. (2009). Numeracy and drug calculations in practice. *Primary Health Care, 19*(5), 40–45.

Hyde, A., Treacy, M. M., Scott, A. P., MacNeela, P., Butler, M., Drennan, J., . . . Byrne, A. (2006). Social regulation, medicalization and the nurse's role: Insights from an analysis of nursing documentation. *International Journal of Nursing Studies, 43,* 735–744. http://dx.doi.org/10.1016/j.ijnurstu.2005.10.001

Institute for Safe Medication Practices. (1999). The "five rights." *Medication Safety Alert, 4,* 1–3.

Institute for Safe Medication Practices. (2002). *Pathways for medication safety: Looking collectively at risk.* Retrieved from https://www.ismp.org/tools/pathways.asp

Institute for Safe Medication Practices. (2003). The virtues of independent double checks – they really are worth your time. *Medication Safety Alert, 8*(5), 1.

Institute for Safe Medication Practices. (2005a). Lowering the risk of medication errors: Independent double checks. *Canada Safety Bulletin, 5*(1), 1–5. Retrieved from http://www.ismp-canada.org/download/safetyBulletins/ISMPCSB2005-01.pdf

Institute for Safe Medication Practices. (2005b). *Mosby's nursing PDQ for medication safety*. St. Louis, MO: Mosby's.

Institute for Safe Medication Practices. (2011). Guidelines for timely medication administration: Response to the CMS "30 minute rule." *Nurse Advise-ERR, 9*(1), 1–4. Retrieved from http://www.ismp.org/newsletters/acutecare/articles/20110113.asp

Institute for Safe Medication Practices. (2013a). Implementation planning for a medication bar code system. *Canada Safety Bulletin, 13*(13), 1–6. Retrieved from http://ismp-canada.org/download/safetyBulletins/2013/ISMPCSB2013-13_ImplementationBarCodeSystem.pdf

Institute for Safe Medication Practices. (2013b). Independent double checks: Undervalued and misused. Selective use of this strategy can play an important role in medication safety. *Canada Safety Bulletin, 13*(7), 1–5. Retrieved from http://www.ismp.org/newsletters/acutecare/showarticle.aspx?id=51

Jacques, R. (1993). Untheorized dimensions of caring work: Caring as a structural practice and caring as a way of seeing. *Nursing Administration Quarterly, 17*(2), 1–10.

Jarman, H., Jacobs, E., & Zielinski, V. (2002). Medication study supports registered nurses' competence for single checking. *International Journal of Nursing Practice, 8*, 330–335. http://dx.doi.org/10.1046/j.1440-172X2002.00387.x

Jinks, A. M., & Hope, P. (2000). What do nurses do? An observational study of the activities of nurses on acute surgical and rehabilitation units. *Journal of Nursing Management, 8*, 273–279. http://dx.doi.org/10.1046/j.1365-2834.2000.00182

Johnson, M., Tran, D. T., & Young, H. (2011). Developing risk management behaviours for nurses through medication incident analysis. *International Journal of Nursing Practice, 17*, 548–555. http://dx.doi.org/10.1111/j.1440-172X.2011.01977.x

Jones, S. W. (2009). Reducing medication administration errors in nursing practice. *Nursing Standard, 23*(50), 40–46. http://dx.doi.org/10.7748/ns2009.08.23.50.40.c7213

Jones, T. L. (2010). A holistic framework for nursing time: Implications for theory, practice and research. *Nursing Forum, 45*, 185–196. http://dx.doi.org/10.1111/j.1744-6198.2010.00180.x

Joolaee, S., Hajibabaee, F., Peyrovi, H., Haghani, H., & Bahrani, N. (2011). The relationship between incidence and report of medication errors and working conditions. *International Nursing Review, 58*, 37–44. http://dx.doi.org/10.1111/j.1466-7657.2010.00872.x.

Keers, R. N., Williams, S. D., Cooke, J., & Ashcroft, D. M. (2013). Causes of medication administration errors in hospitals: A systematic review of quantitative and qualitative evidence. *Drug Safety, 36*, 1045–1067. http://dx.doi.org/10.1007/s40264-013-0090-2

Keohane, C. A., Bane, A. D., Featherstone, E., Hayes, J. Woolf, S. Hurley, A., . . . Poon, E. G. (2008). Quantifying nursing workflow in medication administration. *Journal of Nursing Administration, 38*, 19–26. http://dx.doi.org/10.1097/01.NNA.0000295628.87968.bc

Kim, J., & Bates, D. W. (2012). Medication administration errors by nurses: Adherence to guidelines. *Journal of Clinical Nursing, 22*, 590–598. http://dx.doi.org/10.111/j.1365-2702.2012.04344.x

Kim, K. S., Kwon, S.-H., Kim, J.-A., & Cho, S. (2011). Nurses' perceptions of medication errors and their contributing factors in South Korea. *Journal of Nursing Management, 19*, 346–363. http://dx.doi.org/10.1111/j.1365-2834.2011.01249.x

Kirby, M. J. L., & LeBreton, M. (2002). *The health of Canadians – the federal role: Final report on the state of the health care system in Canada*. Retrieved from http://www.parl.gc.ca/content/sen/committee/372/soci/rep/repoct02vol6-e.pdf

Kohn, L.T., Corrigan, J. M., & Donaldson, M. S. (Eds.). (2000). *To err is human: Building a safer health system: Executive summary*. Available from http://www.nap.edu/catalog/9728.html

Koppel, R., Wetterneck, T., Telles, J. L., & Karsh, B.-T. (2008). Workarounds to barcode medication administration systems: Their occurrences, causes and threats to patient safety. *Journal of the American Medical Informatics Association, 15*, 408–423. http://dx.doi.org/10.1197/jama.M2616

Kramer, M., Brewer, B. B., Halfer, D., Maguire, P., Beausoleil, S., Claman, K., . . . Boychuk Duchscher, J. (2013). Changing our lens: Seeing the chaos of professional practice as complexity. *Journal of Nursing Management, 21*, 690–704. http://dx.doi.org/10.1111/jonm.12082

Kron, T. (1962). Stepping beyond the 5 rights of administering drugs. *The American Journal of Nursing, 62*(7), 62–63.

Landers, M. G. (2000). The theory practice gap in nursing: The role of the nurse teacher. *Journal of Advanced Nursing, 32*, 1550–1556. http://dx.doi.org/10.1046/j.1365-2648.2000.01605.x

Latimer, J. (2000). *The conduct of care: Understanding nursing practice*. Oxford, United Kingdom: Blackwell.

Leape, L. L., Berwick, D. M., & Bates, D. W. (2002). What practices will most improve safety? Evidence-based medicine meets patient safety. *Journal of the American Medical Association, 288*, 501–507. http://dx.doi.org/10.1001/jama.288.4.501

Legislation Revision and Consolidation Act: Narcotic Control Regulations. (2009). CRC, c .1041. Retrieved from http://www.canlii.org/en/ca/laws/regu/crc-c-1041/latest/crc-c-1041.html

Liaschenko, J. (1998). The shift from the closed to the open body – ramifications for nursing testimony. In S. D. Edwards (Ed.), *Philosophical issues in nursing* (pp. 11–30). London, United Kingdom: Macmillan Press.

Liaschenko, J., & Peter, E. (2004). Nursing ethics and conceptualizations of nursing: Profession, practice and work. *Journal of Advanced Nursing, 46*, 488–495. http://dx.doi.org/10.1111/(ISSN)1365-2648

Linden, J. V., Wagner, K., Voytovich, A. E., & Sheehan, J. (2000). Transfusion errors in New York State: An analysis of 10 years' experience. *Transfusion, 40,* 1207–1213. http://dx.doi.org/10.1046/j.1537-2995.2000.40101207.x

Lundgren, S., & Segesten, K. (2001). Nurses' use of time in a medical–surgical ward with all-RN staffing. *Journal of Nursing Management, 9,* 13–20. http://dx.doi.org/10.1111/j.1365-2834.2001.00192.x

Lynch, M. E. (2011). The need for a Canadian pain strategy. *Pain Research & Management, 16*(2), 77–80.

MacDonald, M. (2010). Examining the adequacy of the 5 rights of medication administration. *Clinical Nurse Specialist, 24,* 196–201. http://dx.doi.org/10.1097/NUR.0b013e3181e3605f

Manias, E., Aitken, R., & Dunning, T. (2004). Medication management by graduate nurses: Before, during and following medication administration. *Nursing & Health Sciences, 6,* 83–91. http://dx.doi.org/10.1111/j.1442-2018.2004.00178.x

Mannos, D. (2003). NCPS patient misidentification study: A summary of root cause analyses. *Topics in Patient Safety, 3*(1), 1–4. Retrieved from http://www.patientsafety.va.gov/docs/TIPS/TIPS_Jul03.pdf

Maricle, K., Whitehead, L., & Rhodes, M. (2007). Examining medication errors in a tertiary hospital. *Journal of Nursing Care Quality, 22,* 20–27.

Maslove, D. M., Rizk, N., & Lowe, H. J. (2011). Computerized physician order entry in the critical care environment: A review of the current literature. *Journal of Intensive Care Medicine, 26,* 165–171. http://dx.doi.org/10.1177/0885066610387984

Mazankowski, D. (2001, December). *A framework for reform: Report of the Premier's Advisory Council on Health.* Retrieved from http://www.health.alberta.ca/documents/Mazankowski-Report-2001.pdf

McClanahan, S., Goodwin, S. T., & Perlin, J. B. (2011). A formula for errors: Good people + bad systems. In P. L. Spath (Ed.), *Error reduction in healthcare: A systems approach to improving patient safety* (2nd ed., pp. 3–20). San Francisco, CA: Jossey-Bass.

McCoy, L. (1998). Producing "what the deans know": Cost accounting and the restructuring of post-secondary education. *Human Studies, 21*, 395–418. http://dx.doi.org/10.1023/A:1005433531551

McCoy, L. (2006). Keeping the institution in view: Working with interview accounts of everyday experience. In D. E. Smith (Ed.), *Institutional ethnography as practice* (pp. 109–125). Lanham, MD: Rowman & Littlefield.

McCoy, L. (2008). Institutional ethnography and constructionism. In J. A. Holstein & J. F. Gubrium (Eds.), *Handbook of Constructionist Research* (pp. 701–714). New York, NY: The Guilford Press.

McCoy, L. (2009). Time, self and the medication day: A closer look at the everyday work of 'adherence.' *Sociology of Health & Illness, 31*(1), 128–146. http://dx.doi.org/10.1111/j.1467-9566.2008.01120.x.

McDonald, R., Waring, J., & Harrison, S. (2006). Rules, safety and the narrativisation of identity: A hospital operating theatre case study. *Sociology of Health & Illness, 28*, 178–202. http://dx.doi.org/10.1111/j.1467-9566.2006.00487.x

McGovern, K. (1988). 10 golden rules for administering drugs safely. *Nursing88, 18*(8), 34–42.

MacKinnon, K. A. (2008). Labouring to nurse: The work of rural nurses who provide maternity care. *Rural & Remote Health, 8,* 1–15.

McLarney, R., Cashin, E., Cashin, R., Colegrave, C., & Luscombe, M. (2012). Unauthorized mediation collections on inpatient units. *Canadian Nurse, 108*(5), 22–27.

McWilliam, C. L., & Wong, C. A. (1994). Keeping it secret: The costs and benefits of nursing's hidden work in discharging patients. *Journal of Advanced Nursing, 19*, 152–163. http://dx.doi.org/10.1111/j.1365-2648.1994.tb01063.x

Melon, K. A. (2012). *Inside triage: The social organization of emergency nursing work* (Unpublished master's thesis). University of Calgary, Calgary, Canada.

Menachemi, N., Saunders, C., Chukmaitov, A., Matthews, M. C., & Brooks, R. G. (2007). Hospital adoption of information technologies and improved patient safety: A study of 98 hospitals in Florida. *Journal of Healthcare Management, 52*, 398–409.

Meum, T. T. (2013). Co-constructing standards in nursing: A socio-technical approach to standardization in practice (Doctoral dissertation). University of Tromsø, Norway.

Meum, T. T., Monteiro, E., & Ellingsen, G. (2011). The pendulum of standardization. In S. Bodker, N. O. Bouvin, V. Wulf, L. Ciolfi, & W. Lutters (Eds.), *ECSCW 2011: Proceedings of the 12th European Conference on Computer Supported Cooperative Work* (pp. 101–120). London, United Kingdom: Springer.

Mykhalovskiy, E. (2001). Troubled hearts, care pathways and hospital restructuring: Exploring health services research as active knowledge. *Studies in Cultures, Organizations and Societies, 7,* 269–296. http://dx.doi.org/10.1080/10245280108523561

National Patient Safety Agency. (2005). *Wristbands for hospital inpatients improves safety.* London, United Kingdom: Author.

National Patient Safety Agency. (2011). *What is a patient safety incident?* Retrieved from http://www.npsa.nhs.uk/nrls/reporting/what-is-a-patient-safety-incident/

Ndosi, M., & Newell, R. (2008). Nurses' knowledge of pharmacology behind drugs they commonly administer. *Journal of Clinical Nursing, 18,* 570–580. http://dx.doi.org/10.1111/j.1365-2702.2008.02290.x

Ng, R. (2006). Exploring the globalized regime of ruling from the standpoint of immigrant workers. In C. Frampton, G. Kinsman, A. K. Thompson, & K. Tilleczek (Eds.), *Sociology for changing the world: Social movements/social research* (pp. 174–188). Halifax, Canada: Fernwood.

Nguyen, E. E., Connolly, P. M., & Wong, V. (2010). Medication safety initiative in reducing medication errors. *Journal of Nursing Care Quality, 25,* 224–230. http://dx.doi.org/10.1097/NCQ.0b013e3181ce3ae4

Oath of Hippocrates. (2002). In *Harvard classics* (Vol. 38). Retrieved from http://www.cirp.org/library/ethics/hippocrates/

O'Byrne, P. (2008). The dissection of risk: A conceptual analysis. *Nursing Inquiry, 15*(1), 30–39. http://dx.doi.org/10.1111/j.1440-1800.2008.00372.x

O'Hagan, J., MacKinnon, N. J., Persaud, D., & Etchgary, H. (2009). Self reported medical error in seven countries: Implications for Canada. *Healthcare Quarterly, 12*, 55–61. http://dx.doi.org/10.12927/hcq.2009.20967

Omnicell®. (2013, November 26). *Savvy mobile medication workstation*. Retrieved from http://www.omnicell.com/Products/Medication_Dispensing/Savvy_Mobile_Medication_System.aspx

Oops, sorry, wrong patient! A patient verification process is needed everywhere. (2012). *Alberta RN, 67*, 18–22.

O'Shea, E. (1999). Factors contributing to medication errors: A literature review. *Journal of Clinical Nursing, 8*, 496–504. http://dx.doi.org/10.1046/j.1365-2702.1999.00284.x

Ozkan, S., Kocaman, G., Ozturk, C., & Seren, S. (2011). Frequency of pediatric medication administration errors and contributing factors. J*ournal of Nursing Care Quality, 26*, 136–143. http://dx.doi.org/10.1097/NCQ.0b013e3182031006

Pape, T. M. (2003). Applying airline safety practices to medication administration. *MedSurg Nursing, 12*, 77–94.

Pape, T. M. (2013). The effect of a five-part intervention to decrease omitted medications. *Nursing Forum, 48*, 211–222. http://dx.doi.org/10.1111/nuf.12025

Parker, D., & Lawton, R. (2000). Judging the use of clinical protocols by fellow professionals. *Social Science & Medicine, 51*, 669–677. http://dx.doi.org/10.1016/S0277-9536(00)00013-7

Parisi, L. L. (2003). Patient identification: The foundation for a culture of patient safety. *Journal of Nursing Care Quality, 18*, 73–79.

Pedersen, R., Ellingson, G., & Monteiro, E. (2011). The standardized nurse: Mission impossible? In M. Chiasson, O. Henfridsson, H. Karsten, & J. DeGross (Eds.), *Researching the future in information systems* (pp. 163–178). Berlin, Germany.

Pence, E. (2001). Safety for battered women in a textually mediated legal system. *Studies in Cultures, Organizations and Societies, 7*, 199–229. http://dx.doi.org/10.1080/10245280108523558

Perry, A. G., & Potter, P. (2009). *Clinical nursing skills & techniques* (6th ed.). St. Louis, MO: Mosby.

Potter, P. A., Perry, A. G., Ross-Kerr, J. C., Wood, M. J., Astie, B. J., & Duggleby, W. (Eds.). (2014). *Canadian fundamentals of nursing* (5th ed.). Toronto, Canada: Mosby Elsevier.

Pronovost, P. J., Miller, M. R., & Wachter, R. M. (2006). Tracking progress in patient safety: An elusive target. *Journal of the American Medical Association, 296*, 696–699. http://dx.doi.org/10.1001/jama.296.6.696

Przybycien, P. (2005). *Safe meds: An interactive guide to safe medication practice*. St. Louise, MO: Elsevier Mosby.

Publications ordered by hearing tribunals. (2012). *Alberta RN, 68*(1), 18–20.

Pump up the volume: Tips for increasing error reporting. (2009). *Nurse Advise-ERR, 7*(7), 1–3. Retrieved from http://www.mc.vanderbilt.edu/documents/7north/files/Nurse%20Advise%20ERR%20July%202009.pdf

Quinlan, E. (2009). The 'actualities' of knowledge work: An institutional ethnography of multi-disciplinary primary health care teams. *Sociology of Health & Illness, 31*, 625–641. http://dx.doi.org/10.1111/j.1467-9566.2009.01167.x

Raban, M. Z., & Westbrook, J. I. (2014). Are interventions to reduce interruptions and errors during medication administration effective: A systematic review. *British Medical Journal of Quality & Safety, 23,* 414–421. http://dx.doi.org/10.1136/bmjqs-2013-002118

Rack, L. L., Dudjak, L. A., & Wolf, G. A. (2012). Study of nurse workarounds in a hospital using bar code medication administration system. *Journal of Nursing Care Quality, 27*, 232–239. http://dx.doi.org/10.1097/NCQ.0b013e318240a854

Radley, D. C., Wasserman, M. R., Olsho, L. E. W., Shoemaker, S. T., Spranca, M. C., & Bradshaw, B. (2012). Reduction in medication errors in hospitals due to adoption of computerized provider order entry systems. *Journal of American Informatics Association,* 1–7. http://dx.doi.org/10.1136/amjiajnl-2012-001241

Ranji, S. R., Rennke, S., & Wachter, R. M. (2014). Computer provider order entry combined with clinical decision support systems to improve medication safety: A narrative review. *British Medical Journal of Quality & Safety, 23,* 773–780. http://dx.doi.org/10.1136/bmjqs-2013-002165

Rankin, J. M. (2001). Texts in action: How nurses are doing the fiscal work of health care reform. *Studies in Cultures, Organizations and Societies, 7,* 251–267. http://dx.doi.org/10.1080/10245280108523560

Rankin, J. M. (2009). The nurse project: An analysis for nurses to take back our work. *Nursing Inquiry, 16,* 275–286. http://dx.doi.org/10.1111/j.1440-1800.2009.00458.x

Rankin, J. M., & Campbell, M. L. (2006). *Managing to nurse: Inside Canada's health care reform.* Toronto, Canada: University of Toronto Press.

Rankin, J. M., & Campbell, M. L. (2014). Exploring questions of care and gender in nurses' institutionally organized work. In G. Olthius, H. Kohlen, & J. Heir (Eds.), *Moral boundaries redrawn: The significance of Joan Tronto's argument for professional ethics, political theory, and care practice*. Brussels, Belgium: Peeters in Leuven Press.

Richardson, A., & Storr, J. (2010). Patient safety: A literature review on the impact of nursing empowerment, leadership and collaboration. *International Nursing Review, 57,* 12–21. http://dx.doi.org/10.1111/j.1466-7657.2009.00757.x

Rolfe, G. (1998). The theory-practice gap in nursing: From research-based practice to practitioner-based research. *Journal of Advanced Nursing, 28,* 672–679. http://dx.doi.org/10.1046/j.1365-2648.1998.00806.x

Romanow, R. J. (2002, November). *Building on values: The future of health care in Canada.* Retrieved from http://publications.gc.ca/collections/Collection/CP32-85-2002E.pdf

Rosenberg, W., & Donald, A. (1995). Evidence-based medicine: An approach to clinical problem solving. *British Medical Journal, 310,* 1122–1125. http://dx.doi.org/10.1136/bmj.310.6987.1122

Rubbermaid® Health Care. (2013). *Medication carts*. Retrieved from http://www.rubbermaidhealthcare.com/products/Pages/medication-carts.aspx#features

Saginur, M., Graham, I. D., Forster, A. J., Boucher, M., & Wells, G. A. (2008). The uptake of technologies designed to influence medication safety in Canadian hospitals. *Journal of Evaluation in Clinical Practice, 14*, 27–35. http://dx.doi.org/10.1111/j.1365-2753.2007.00780.x

Sakowski, J., Newman, J. M., & Dozier, K. (2008). Severity of medication administration errors detected by a bar-code medication administration system. *American Journal of Health-System Pharmacy, 65*, 1661–1666. http://dx.doi.org/10.2146/ajhp070634

Sammer, C. E., Lykens, K., Singh, K. P., Mains, D. A., & Lackan, N. A. (2010). What is patient safety culture? A review of the literature. *Journal of Nursing Scholarship, 42*, 156–165. http://dx.doi.org/10.1111/j.1547-5069.2009.01330.x

Sandelowski, M. (2000). Thermometers and telephones. *American Journal of Nursing, 100*(10), 82–86.

Sandler, S. G., Langeberg, A., & Dohnalek, L. (2005). Bar code technology improves positive patient identification and transfusion safety. *Developments in Biologicals, 120*, 19–24.

Santa checks his list twice. Shouldn't we? (2009). *Medication Safety Alert, 14*(2), 1–12. Retrieved from http://portal.mah.harvard.edu/templatesnew/departments/bid/ptcommittee/uploaded_documents/ismpmsa12-17-09acutecare-premier.pdf

Selberg, R. (2013). Nursing in times of Neoliberal change: An ethnographic study of nurses' experiences of work intensification. *Nordic Journal of Working Life Studies, 3*(2), 9–35.

Smith, D. E. (1987). *The everyday world as problematic: A feminist sociology.* Boston, MA: Northeastern University Press.

Smith, D. E. (1990). *The conceptual practices of power: A feminist sociology of knowledge.* Boston, MA: Northeastern University Press.

Smith, D. E. (1992). Sociology from women's experience: A reaffirmation. *Sociological Theory, 10,* 88–98.

Smith, D. E. (1999). *Writing the social: Critique, theory and investigations.* Toronto, Canada: University of Toronto Press.

Smith, D. E. (2001). Texts and the ontology of organizations and institutions. *Studies in Cultures, Organizations and Societies, 7,* 159–198. http://dx.doi.org/10.1080/10245280108523557

Smith, D. E. (2004). Ideology, science and social relations: A reinterpretation of Marx's epistemology. *European Journal of Social Theory, 7,* 445–462. http://dx.doi.org/10.1177/1368431004046702

Smith, D. E. (2005). *Institutional ethnography: A sociology for people*. Lanham, MD: Altamira Press.

Smith, D. E. (2006). Incorporating texts into ethnographic practice. In D. E. Smith (Ed.), *Institutional ethnography as practice* (pp. 65–88). Lanham, MD: Rowman & Littlefield.

Smith, G. W. (1990). Political activist as ethnographer. *Social Problems, 37*, 629–648. http://dx.doi.org/10.2307/800586

Smith, G. W. (1995). Accessing treatments: Managing the AIDS epidemic in Ontario. In M. Campbell & A. Manicom (Eds.), *Knowledge, experience, and ruling relations: studies in the social organization of knowledge* (pp. 18–34). Toronto, Canada: University of Toronto Press.

Sousa, I. (2013). New technologies and concepts of care. In P. Armstrong & S. Braedley (Eds.), *Critical perspectives on research & practices* (pp. 129–142). Toronto, Canada: Canadian Scholars Press.

St-Pierre, I., & Holmes, D. (2008). Managing nurses through disciplinary power: A Foucauldian analysis of workplace violence. *Journal of Nursing Management, 16*, 352–359. http://dx.doi.org/10.1111/j.1365-2834.2007.00812.x

Storch, J. L. (2005). Patient safety: Is it just another bandwagon? *Canadian Journal of Nursing Leadership, 18*(2), 39–55.

Strom, B. L., Schinnar, R., Aberra, F., Bilker, W., Hennessy, S., Leonard, C. E., & Pifer, E. (2010). Unintended effects of a computerized physician order entry nearly hard-stop alert to prevent a drug interaction: A randomized controlled trial. *Archives of Internal Medicine, 170,* 1578–1583. http://dx.doi.org/10.1001/archinternmed.2010.324

Tancred, P. (1995). Women's work: A challenge to the sociology of work. *Gender, Work and Organization, 2*, 11–20. http://dx.doi.org/10.1111/j.1468-0432.1995.tb00023.x

The Joint Commission & The Joint Commission International. (2007, May). *Patient safety solutions preamble*. Retrieved from http://www.jointcommissioninternational.org/assets/3/7/PreambleandSolutionsENGLISH.pdf

Thomson, M. S., Gruneir, A., Lee, M., Baril, J., Field, T. S., Gurwitz, J. H., & Rochon, P. A. (2009). Nursing time devoted to medication administration in long-term care: Clinical, safety, and resource implications. *Journal of the American Geriatrics Society, 57*, 266–272. http://dx.doi.org/10.1111/j.1532-5415.2008.02101.x

Toman, C. (2007). Blood work: Canadian nursing and blood transfusion, 1942–1990. In P. D'Antonio, E. D. Baer, S. D. Rinker, & J. E. Lynaugh (Eds.), *Nurses' work: Issues across time and place* (pp. 231–256). New York, NY: Springer.

Treiber, L. A., & Jones, J. H. (2010). Devastatingly human: An analysis of registered nurses' medication error accounts. *Qualitative Health Research, 20*, 1327–1342. http://dx.doi.org/10.1177/1049732310372228

Tsai, P. H., Chuang, Y. T., Chou, T. S., Liu, J. W.-S., & Shih, C.-S. (2009). iNuC: An intelligent mobile nursing cart. *Biomedical Engineering & Informatics*, 1–6. http://dx.doi.org/10.1109/BMEI.2009.5305225

Tucker, A. L., & Spear, S. J. (2006). Operational failures and interruptions in hospital nursing. *Health Services Research, 41*, 643–662. http://dx.doi.org/10.1111/j.1475-6773.2006.00502.x

van Onzenoort, H. A., van de Plas, A., Kessels, A. G., Veldhorst-Janssen, N. M., van der Kuy, P. H., & Neef, C. (2008). Factors influencing bar-code verification by nurses during medication administration in a Dutch hospital. *American Journal of Health- Systems Pharmacy, 65*, 644–648. http://dx.doi.org/10.2146/ajhp070368

Vaughan, D. (2005). Organizational rituals of risk and error. In B. Hutter & M. Power (Eds.), *Organizational encounters with risk* (pp. 33–66). Cambridge, United Kingdom: Cambridge University Press.

Vlasses, F. R. (1997). *Too familiar for words: An analysis of "invisible" nursing work* (Unpublished doctoral dissertation). Loyola University, Chicago, IL.

Vogelsmeier, A., Halbesleben, J. R. B., & Scott-Cawiezell, J. R. (2008). Technology implementation and workarounds in the nursing home. *Journal of the American Medical Informatics Association, 15*, 114–119. http://dx.doi.org/10.1197/jamia.M2378

Wade, J., Baker, G. R., Bulman, J., Fraser, P., Millar, J., Nicklin, W., . . . Salsman, B. (2002). *Building a safer system: A national strategy for improving patient safety in Canadian health care*. Retrieved from http://www.royalcollege.ca/portal/page/portal/rc/common/documents/advocacy/building_a_safer_system_e.pdf

Walker, K. (1994). Confronting 'reality": Nursing, science and the micro-politics of representation. *Nursing Inquiry, 1*, 46–56. http://dx.doi.org/10.1111/j.1440-1800.1994.tb00123.x

Weaver, S. J., Lubomski, L. H., Wilson, R. F., Pfoh, E. R., Martinez, K. A., & Dy, S. M. (2013). Promoting a culture of safety strategy: A systematic review. *Annals of Internal Medicine, 158,* 369–374. http://dx.doi.org/10.7326/0003-4819-158-5-201303051-00002

Weinberg, D. B. (2006). When little things are big things: The importance of relationships for nurses' professional practice. In S. Nelson, & S. Gordon (Eds.), *The complexities of care: Nursing reconsidered* (pp. 30–43). Ithaca, NY: ILR Press.

Welsh, M., & Rajah, V. (2014). Rendering invisible punishments visible: Using institutional ethnography in feminist criminology. *Feminist Criminology, 9,* 323–343. http://dx.doi.org/10.1177/1557085114524616

Westbrook, J. I., Duffield, C., Li, L., & Creswick, N. J. (2011). How much time do nurses have for patients? A longitudinal study quantifying hospital nurses' patterns of task time distribution and interactions with health professionals. *BMC Health Service Research, 11,* 319–331. http://dx.doi.org/10.1186/1472-6963-11-319

Westbrook, J. I., Ling, L., Georgiou, A., Paoloni, R., & Cullen, J. (2013). Impact of an electronic medication management system on hospital doctors' and nurses' work: A controlled pre-post, time and motion study. *Journal of the American Medical Informatics Association, 20,* 1150–1158. http://dx.doi.org/10.1136/amiajnl-2012-001414

Westbrook, J. I., Woods, A., Rob, M. I., Dunsmuir, W. I., & Rob, R. O. (2010). Association of interruptions with an increased risk and severity of medication administration errors. *Archives of Internal Medicine, 170*, 683–690. http://dx.doi.org/10.1001/archinternmed.2010.65

White, D. E., Jackson, K., Besner, J., & Norris, J. M. (2013). The examination of nursing work through a role accountability framework. *Journal of Nursing Management.* Advance online publication. http://dx.doi.org/10.1111/jonm.12186

White, D. E., Jackson, K., Besner, J., Suter, E., Doran, D., McGillis Hall, L., & Parent, K. (2009, January). *Enhancing nursing role effectiveness through job redesign: Final report.* Retrieved from http://www.clpna.com/wp-content/uploads/2013/02/doc_JobRedesignStudyFinalReport2009.pdf

White, R. E., Trbovich, P. L., Easty, A. C., Savage, P., Trip, K., & Hyland, S. (2010). Checking it twice: An evaluation of check lists for detecting medication errors at the bedside using a chemotherapy model. *Quality & Safety in Health Care, 19*, 562–567. http://dx.doi.org/10.1136/qshc.2009.032862

Wolf, Z. R. (1988). *Nurses' work: The sacred and the profane*. Philadelphia, PA: University of Pennsylvania Press.

World Alliance for Patient Safety. (2004). *Forward programme 2005*. Retrieved from http://www.who.int/patientsafety/en/brochure_final.pdf

World Health Organization. (2002). *Quality of care: Patient safety* (Fifty-fifth world health assembly, Resolution 55.18, Agenda item 13.9). Retrieved from http://apps.who.int/gb/archive/pdf_files/WHA55/ewha5518.pdf?ua=1.

World Health Organization. (2007a, May). *Patient identification: Patient safety solution.* Geneva: Author.

World Health Organization. (2007b). *Patient safety solutions preamble – May 2007.* Retrieved from http://www.who.int/patientsafety/solutions/patientsafety/Preamble.pdf

World Health Organization. (2011). *Patient safety curriculum guide* (Multi-professional ed.). Geneva, Switzerland: Author.

World Health Organization. (2014a). *Evidence-informed policy-making.* Retrieved from http://www.who.int/evidence/about/en/

World Health Organization. (2014b). *WHO definition of palliative care*. Retrieved from http://www.who.int/cancer/palliative/definition/en/

Wulff, K., Cummings, G. G., Marck, P., & Yurtseven, O. (2011). Medication administration technologies and patient safety: A mixed method systematic review. *Journal of Advanced Nursing, 67*, 2080–2095. http://dx.doi.org/10.1111/j.1365-2648.2011.05676.x

Yang, Z., Ng, B.-Y., Kankanhalli, A., & Luen Yip, J. W. (2012). Workarounds in the use of IS in healthcare: A case study of an electronic medication administration system. *International Journal of Human-Computer Studies, 70*, 43–65. http://dx.doi.org/10.1016/j.ijhcs.2011.08.002

Yuxiang, L., Lingjun, Z., Lu, T., Mengjie, L., Xing, M., Fengping, S, . . . Jijun, Z. (2012). Burn patients' experience of pain management: A qualitative study. *Burns, 38*, 180–186. http://dx.doi.org/10.1016/j.burns.2011.09.006

Appendix A: Sample of Questions Used to Initiate Conversations

General Plan: In all initial interviews, I started with an introduction to myself as researcher, and to the project. The introduction and starting place question was similar to this: "I am conducting an inquiry into the activities that nurses are engaged in as they work with medications. I would like to hear about your experiences as you work with medications. Will you tell me about them?" OR "What do you do as you work with medications?" OR "How do you do your work?" I also used what I observed to initiate conversation, with initial questions such as: "I noticed nurses doing . . . can you tell me how that works in your practice?" OR "Tell me about a time when . . . "

Institutional Ethnography Interview Principle	Purpose	Sample Interview Questions
Interviewing typically centers around the "generous conception" of work in order to learn about a particular experience	To identify and trace social relations embedded in work. "People know how to conduct their everyday work, and when they talk about it . . . their conversation necessarily carries traces of those social relations" (Campbell, 2008, p. 270)	What are you doing? What kind of work do you do with medications? How do you accomplish your work with medications? What strategies do you use? What challenges do you encounter?
Inquiry serves to "locate and trace the points of connection among individuals working in different parts of institutional complexes of activity" (DeVault & McCoy, 2006, p. 18)	To identify the sequences of interconnected activities that make up "medication work"	Where did that document come from? Who else uses that document? What are the linkages? What happens next? Where does that (document) go to next?

Institutional Ethnography Interview Principle	Purpose	Sample Interview Questions
Inquiry serves to build an understanding of the coordination of activity in multiple sites (DeVault & McCoy, 2006)	To identify ruling relations: the social relations that shape, coordinate and mediate nurse's activities translocally	Why are you doing it that way? How did you know to do it that way? What are you orienting to? What are you consulting? How do you know how to do your work with medications? Do health care policies affect your work? In what way? Do technologies affect your work? In what way? Do resources affect your work? In what way? Do systems affect your work? In what way?

Appendix B: Letter of Introduction

TITLE: Nurses' Medication Work

SPONSOR: None

INVESTIGATORS:

Principle Investigators:

Dr. Janet Rankin, Assistant Professor, Faculty of Nursing, University of Calgary
[email address]

Dr. Debbie White, Associate Professor and Associate Dean of Research, Faculty of Nursing, University of Calgary
[email address]

Student Researcher:

Louise Dyjur, Faculty of Nursing, University of Calgary
Phone: [telephone number]
[email address]

INVITATION TO PARTICIPATE

You are invited to participate in a research study called "Nurses' Medication Work". I designed the study as part of my doctoral studies in nursing at the University of Calgary. This letter will provide you with more information about the project and your role in it if you choose to participate.

BACKGROUND

This research will explore medication practices by capturing and documenting nurses' own expert knowledge about the work they do to safely administer medications. The research method is Institutional ethnography (IE) which provides a greater understanding of how things work in everyday settings. It also allows exploration of how everyday practices link to broader organizational processes.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this research project is to produce a detailed analysis of nurses' work with medications, generating new knowledge. The objectives of the study are to: (a) describe how medication work is organized is organized to happen the way it does; (b) display the links between the broader organizational, social and political context, and the way that medication work happens locally (for example, within a particular hospital unit); and (c)

to use the analysis to develop recommendations to influence nursing education, nursing medication practice and health care practices related to medication work in hospitals.

WHAT WILL I BE ASKED TO DO?

You will be asked to participate in an interview with me that will last 60 to 90 minutes. You will also be asked to permit me to observe you as you go about your everyday work as a nurse. The observation will take place over an eight hour shift (period of time). You may choose to participate in both the observation and the interview, the observation only, the interview only, or neither of these activities.

I am interested in learning from you, as an expert in your own work with medications. Your practice is not the focus of the study, and will not be judged or evaluated. I am not affiliated with hospital administration and will not be reporting anything that I see or hear to nursing supervisors.

During observations, I may ask questions in order to understand what you are doing as you work with medications. However, you WILL NOT be interrupted or distracted while you are preparing or administering medications. The only exception to this is if I witness an action that could result in a medication error. If that circumstance occurs, you will be informed of the potential for error.

You may be asked to participate in a follow-up interview that may occur by phone or in person. A convenient place and time for the interview to take place will be arranged. Your participation is voluntary. You do not have to answer any questions you do not wish to answer, and you may terminate the interview/observation at any time.

WHAT ARE THE RISKS?

There are no foreseeable risks to you as a result of your participation in this research. However, talking about your work with medications or being observed as you conduct your routine medication work may make you self-conscious. You may experience some feelings of vulnerability or anxiety. Your practice is not being evaluated or judged. Instead, I am interested in what can be learned from you as the expert in your own work. If the observation becomes distressing or disturbing to you, you will be referred to the Employee and Family Assistance Program for counseling and emotional support.

WILL I BENEFIT IF I TAKE PART?

If you agree to participate in this study there may or may not be a direct benefit to you. The information gained from this study may help to understand the nature of nursing work in the future. It is hoped that you will find the interview and/or observation to be an enjoyable experience.

DO I HAVE TO PARTICIPATE?

Your participation is voluntary. You do not have to answer any questions you do not wish to answer, and you may terminate the interview and/or observation at any time. You may withdraw from the study by informing me of your wishes. Contact information is on the front of this form.

WILL I BE PAID FOR PARTICIPATING, OR DO I HAVE TO PAY FOR ANYTHING?

There will be no costs to you if you choose to participate in this research. Interviews will take place at a time and location that is convenient to you. You will not be paid to participate in this research.

WILL MY RECORDS BE KEPT PRIVATE?

No personal identifying information will be collected in this study, and all interview informants will remain anonymous. Your participation in the observational component of this research study cannot be kept anonymous, as others in the setting may notice that I am observing your work with medications. However, at no time will you be identifiable in the data.

A voice recording and transcript will be made of your interview. This transcript will not contain any information that links the interview with you. I will make notes about what is observed. These notes will be entered into field note data. This data bank will not contain any information that links the observation with you.

Descriptions of what I observe and quotes of what you say during interviews or the eight hour observation may be used in the writing based on this research. These data and quotes will be presented in a way that conceals your identity. Your name and the names of any people or organizations you mention will be deleted or replaced with pseudonyms in the transcript and in descriptions of what I observe.

Only I, my academic supervisors and the University of Calgary Conjoint Health Research Ethics Board will have access to the field note data, interview recording and the transcript made of the interview. After the research project is completed, the interview recording will be deleted and any hard copy data will be shredded. The field note data and interview transcript will be stored electronically, in a password protected file, for a period of twelve years.

If you decide to terminate the interview, the information you have provided will be retained and may be used in writing based on this research.

YOUR PARTICIPATION

Your participation will make a valuable contribution to what is understood about nursing work in general, and medication work in particular. The results will be shared with nurses in practice, educators, other researchers and policy makers. I hope to produce research that is useful to nurses.

If you would like more information, or are interested in participating in this project, please contact me.

Sincerely,

Louise Dyjur
[telephone number]
[email address]

Appendix C: Consent Form for Interviews

TITLE: Nurses' Medication Work

SPONSOR: None

INVESTIGATORS:

Principle Investigators:

Dr. Janet Rankin, Assistant Professor, Faculty of Nursing, University of Calgary
[email address]

Dr. Debbie White, Associate Professor and Associate Dean of Research, Faculty of Nursing, University of Calgary
[email address]

Student Researcher:

Louise Dyjur, Faculty of Nursing, University of Calgary
Phone: [telephone number]
[email address]

This consent form is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Take the time to read this carefully and to understand any accompanying information. You will receive a copy of this form.

BACKGROUND

This research will explore medication practices by capturing and documenting nurses' own expert knowledge about the work they do to safely administer medications. The research method is Institutional ethnography (IE) which provides a greater understanding of how things work in everyday settings. It also allows exploration of how everyday practices link to broader organizational processes.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this research project is to produce a detailed analysis of nurses' work with medications, generating new knowledge. The objectives of the study are to: (a) describe how medication work is organized to happen the way it does; (b) display the links between the broader organizational, social and political context, and the way that medication work happens locally (for example within a particular hospital unit); and

(c) to use the analysis to develop recommendations to influence nursing education, nursing medication practice and health care policies related to medication work in hospitals.

WHAT WOULD I HAVE TO DO?

You will be asked to participate in an interview that will last 60 to 90 minutes. You will be asked questions about your work with medications. You may be asked to participate in a follow-up interview by phone or in person.

WHAT ARE THE RISKS?

There are no foreseeable risks to you as a result of your participation in this research. You will be asked to talk about your work with medications. There is a possibility that this may become distressing or disturbing to you. In that event, you will be referred to the Employee and Family Assistance Program for support. The initial referral can be made for you. If you prefer, you will be provided with the contact information so that you can follow up on your own.

WILL I BENEFIT IF I TAKE PART?

If you agree to participate in this study there may or may not be a direct benefit to you. The information gained from this study may help to understand the nature of nursing work in the future. It is hoped that you will find the interview to be an enjoyable experience.

DO I HAVE TO PARTICIPATE?

Your participation is voluntary. You do not have to answer any questions you do not wish to answer, and you may terminate the interview at any time. You may withdraw from the study by informing the student researcher of your wishes.

WHAT ELSE DOES MY PARTICIPATION INVOLVE?

You may be asked to participate in an observation of your work with medications. There is no obligation for you to consent to this or any other aspect of this research. You may wish to be interviewed but not observed, observed but not interviewed, both interviewed and observed, or you may decline to participate in any of the research activities.

WILL I BE PAID FOR PARTICIPATING, OR DO I HAVE TO PAY FOR ANYTHING?

There will be no costs to you if you choose to participate in this research. Interviews will take place at a time and location that is convenient to you. You will not be paid to

participate in this research.

WILL MY RECORDS BE KEPT PRIVATE?

A *voice* recording and transcript will be made of your interview. This transcript will not contain any information that links the interview with you. Your name and the names of any *people* or organizations you mention will be deleted or replaced with pseudonyms in the transcript.

No personal identifying information will be collected in this study. Only the student researcher, the academic supervisors and the University of Calgary Conjoint Health Research Ethics Board will have access to the interview recording and the transcript made of the interview. After the research project is completed, the interview recording will be deleted and any hard copy data will be shredded. The transcript will be stored electronically, in a password protected file, for a period of twelve years.

Quotes from your interview transcript will be used in the writing the student researcher does based on this research. These quotes will be presented in a way that conceals your identity.

If you decide to terminate the interview, the information you have provided will be retained and may be used in writing based on this research.

SIGNATURES

Your signature on this form indicates that you have understood to your satisfaction the information regarding your participation in the research project, and agree to participate as a subject.

In no way does this waive your legal rights nor release the investigators or involved institutions from their legal and professional responsibilities. You are free to withdraw from this research project at any time. You should feel free to ask for clarification or new information throughout your participation. If you have further questions concerning matters related to this research, please contact:

Dr. Janet Rankin [telephone number]

OR

Dr. Debbie White [telephone number]

If you have any questions concerning your rights as a possible participant in this research, please contact The Chair of the Conjoint Health Research Ethics Board at the Office of

Medical Bioethics, [telephone number] or the Ethics Resource Officer, Internal Awards, Research Services, University of Calgary, at [telephone number].

Participant's Name	Signature and Date
Investigator/Delegate's Name	Signature and Date
Witness' Name	Signature and Date

The University of Calgary Conjoint Health Research Ethics Board has approved this research study.

A signed copy of this consent form has been given to you to keep for your records and reference.

Appendix D: Consent Form for Observations

TITLE: Nurses' Medication Work

SPONSOR: None

INVESTIGATORS:

Principle Investigators:

Dr. Janet Rankin, Assistant Professor, Faculty of Nursing, University of Calgary
[email address]

Dr. Debbie White, Associate Professor and Associate Dean of Research, Faculty of Nursing, University of Calgary
[email address]

Student Researcher:

Louise Dyjur, Faculty of Nursing, University of Calgary
Phone: [telephone number]
[email address]

This consent form is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Take the time to read this carefully and to understand any accompanying information. You will receive a copy of this form.

BACKGROUND

This research will explore medication practices by capturing and documenting nurses' own expert knowledge about the work they do to safely administer medications. The research method is Institutional ethnography (IE) which provides a greater understanding of how things work in everyday settings. It also allows exploration of how everyday practices link to broader organizational processes.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this research project is to produce a detailed analysis of nurses' work with medications, generating new knowledge. The objectives of the study are to: (a) describe how medication work is organized to happen the way it does; (b) display the links between the broader organizational, social and political context, and the way that medication work happens locally (for example within a particular hospital unit); and (c)

to use the analysis to develop recommendations to influence nursing education, nursing medication practice and health care policies related to medication work in hospitals.

WHAT WOULD I HAVE TO DO?

You will be asked to participate in an observation. The student researcher will observe you as you go about your everyday work. The observation will take place over an eight hour shift (period of time). Although the student researcher may ask questions in order to understand what you are doing as you work with medications, you WILL NOT be interrupted or distracted while you are preparing or administering medications. The only exception to this is if the student researcher witnesses an action that could result in a medication error. If that circumstance occurs, you will be informed of the potential for error. You will be asked to participate in a follow-up interview that will last 60 to 90 minutes.

The student researcher may make some notes during the observation. These notes will refer to the activities that you are engaged in as you work with medications.

WHAT ARE THE RISKS?

Although there are no foreseeable risks to you as a result of your participation in this research, being observed as you conduct your routine medication work may make you self-conscious. You may experience some feelings of vulnerability or anxiety. Your practice is not being evaluated or judged. Instead, the student researcher is interested in what can be learned from you as the expert in your own work. If the observation becomes distressing or disturbing to you, you will be referred to the Employee and Family Assistance Program for counseling and emotional support. The initial referral can be made for you. If you prefer, you will be provided with the contact information so that you can follow up on your own.

WILL I BENEFIT IF I TAKE PART?

If you agree to participate in this study there may or may not be a direct benefit to you. The information gained from this study may help to understand the nature of nursing work in the future. It is hoped that you will find the observation to be an enjoyable experience.

DO I HAVE TO PARTICIPATE?

Your participation is voluntary. You do not have to answer any questions you do not wish to answer, and you may terminate the observation at any time. You may withdraw from the study by informing the student researcher of your wishes.

WHAT ELSE DOES MY PARTICIPATION INVOLVE?

You may be asked to participate in an interview concerning your work with medications. There is no obligation for you to consent to this or any other aspect of this research. You may wish to be interviewed but not observed, observed but not interviewed, both interviewed and observed or you may decline to participate in any of the research activities.

WILL I BE PAID FOR PARTICIPATING, OR DO I HAVE TO PAY FOR ANYTHING?

There will be no costs to you if you choose to participate in this research. Observations will take place during your routinely scheduled work, on a date and time that is convenient to you. You will not be paid to participate in this research.

WILL MY RECORDS BE KEPT PRIVATE?

The student researcher will make notes about what is observed. This data bank will not contain any information that links the observation with you. Your name and the names of any people or organizations you mention will be deleted or replaced with pseudonyms.

No personal identifying information will be collected in this study. Your participation in the observational component of this research study cannot be kept anonymous, as others in the setting may notice the student researcher observing your work with medications. However, at no time will you be identifiable in any writing the student researcher does based on this research.

Only the student researcher, academic supervisors and the University of Calgary Conjoint Health Research Ethics Board will have access to the field note data. After the research project is completed, any hard copy data will be shredded. The field note data will be stored electronically, in a password protected file, for a period of twelve years.

Descriptions of what the student researcher observes and quotes of what you say during the eight hour observation may be used in the writing based on this research. These data and quotes will be presented in a way that conceals your identity.

If you decide to withdraw from the research, any information you have provided will have already been entered into the anonymous and confidential data bank and will be retained. This data may be used in writing based on this research.

SIGNATURES

Your signature on this form indicates that you have understood to your satisfaction the information regarding your participation in the research project, and agree to participate as a subject.

In no way does this waive your legal rights nor release the investigators or involved institutions from their legal and professional responsibilities. You are free to withdraw from this research project at any time. You should feel free to ask for clarification or new information throughout your participation. If you have further questions concerning matters related to this research, please contact:

Dr. Janet Rankin [telephone number]

OR

Dr. Debbie White [telephone number]

If you have any questions concerning your rights as a possible participant in this research, please contact The Chair of the Conjoint Health Research Ethics Board at the Office of Medical Bioethics, [telephone number] or the Ethics Resource Officer, Internal Awards, Research Services, University of Calgary, at [telephone number].

Participant's Name	Signature and Date
Investigator/Delegate's Name	Signature and Date
Witness' Name	Signature and Date

The University of Calgary Conjoint Health Research Ethics Board has approved this research study.

A signed copy of this consent form has been given to you to keep for your records and reference.

Appendix E: Consent Form for Patient Nurse Observations

TITLE: Nurses' Medication Work

SPONSOR: None

INVESTIGATORS:

Principle Investigators:

Dr. Janet Rankin, Assistant Professor, Faculty of Nursing, University of Calgary
[email address]

Dr. Debbie White, Associate Professor and Associate Dean of Research, Faculty of Nursing, University of Calgary
[email address]

Student Researcher:

Louise Dyjur, Faculty of Nursing, University of Calgary
Phone: [telephone number]
[email address]

This consent form is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Take the time to read this carefully and to understand any accompanying information. You will receive a copy of this form.

BACKGROUND

This research explores what nurses do when they work with medications. The research method involves observing nurses as they go about their everyday work. It helps to understand how things work in usual settings. It also helps to explore how nurses' work is linked to the larger organization. Although patients are not the focus of this study, they may encounter the student researcher during the observational phase of the research.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this research project is to study nurses' work with medications in detail.

WHAT WOULD I HAVE TO DO?

You will be asked to allow the student researcher to observe as your nurse works with you as he/she is giving you your medications. Although the student researcher may enter

your room, or may see you in the setting, you will not be observed specifically. You will not be asked any questions.

WHAT ARE THE RISKS?

There are no foreseeable risks to you as a result of this research.

WILL I BENEFIT IF I TAKE PART?

There are no direct benefits to you as a result of this research. The information gained from this study may help to understand the nature of nursing work in the future.

DO I HAVE TO PARTICIPATE?

Your participation is voluntary. You do not have to engage in conversation, answer any questions, or allow the student researcher to observe your nurse in your presence. You may withdraw from the study at any time by informing the student researcher or nurse of your wishes.

WHAT ELSE DOES MY PARTICIPATION INVOLVE?

There are no other requirements.

WILL I BE PAID FOR PARTICIPATING, OR DO I HAVE TO PAY FOR ANYTHING?

There will be no costs to you if you choose to participate in this research. You will not be paid to participate in this research.

WILL MY RECORDS BE KEPT PRIVATE?

None of your personal identifying information will be collected in this study. The student researcher will make notes about what is observed as the nurse works with medications. None of these notes will refer to you or will contain any information that links you to the observation. These notes will be entered into field note data. The names of any people or organizations will be deleted or replaced with pseudonyms.

Only the student researcher, academic supervisors and the University of Calgary Conjoint Health Research Ethics Board will have access to the field note data. After the research project is completed, any hard copy data will be shredded. The field note data will be stored electronically, on a password protected site, for a period of twelve years.

Descriptions of what the student researcher observes and quotes of what the nurse says during the observation may be used in the writing based on this research. These data and quotes will be presented in a way that conceals your identity.

SIGNATURES

Your signature on this form indicates that you have understood to your satisfaction the information regarding your participation in the research project, and agree to participate as a subject.

In no way does this waive your legal rights nor release the investigators or involved institutions from their legal and professional responsibilities. You are free to withdraw from this research project at any time without jeopardizing your health care. You should feel free to ask for clarification or new information throughout your participation. If you have further questions concerning matters related to this research, please contact:

Dr. Janet Rankin [telephone number]

OR

Dr. Debbie White [telephone number]

If you have any questions concerning your rights as a possible participant in this research, please contact The Chair of the Conjoint Health Research Ethics Board at the Office of Medical Bioethics, [telephone number] or the Ethics Resource Officer, Internal Awards, Research Services, University of Calgary, at [telephone number].

Participant's Name	Signature and Date
Investigator/Delegate's Name	Signature and Date
Witness' Name	Signature and Date

The University of Calgary Conjoint Health Research Ethics Board has approved this research study.

A signed copy of this consent form has been given to you to keep for your records and reference.

Appendix F: Medication Administration Record

Medications	**Times**	**Dates**													
Date Dec 12 2014		12	13	14	15	16	17	18	19	20	21	22	23	24	25
Lasix 20 mg po OD	0800														
Date Dec 12 2014															
Motillium 10 mg po QID ac meals & hs	0730														
	1130														
	1630														
	2200														
Date Dec 12 2014															
Penicillin G 1,000,000 units IV q12h	0800														
	2000														
Date															
Date															
Date															

Note. This form and the information on this form was fabricated solely for the purposes of this report.

Appendix G: PRN Medication Administration Record

PRN Medication										
Date Dec 12 2014 Morphine 2-5 mg IV q1h PRN	TIME	DOSE	PAIN	SITE	INITIAL	TIME	DOSE	PAIN	SITE	INITIAL
	1015	2 mg	5/10	Abd	LMD					
Date										
Date										
Date										
Date										

Note. This form and the information on this form was fabricated solely for the purposes of this report.

Appendix H: Sample of a Unit Medications Checklist

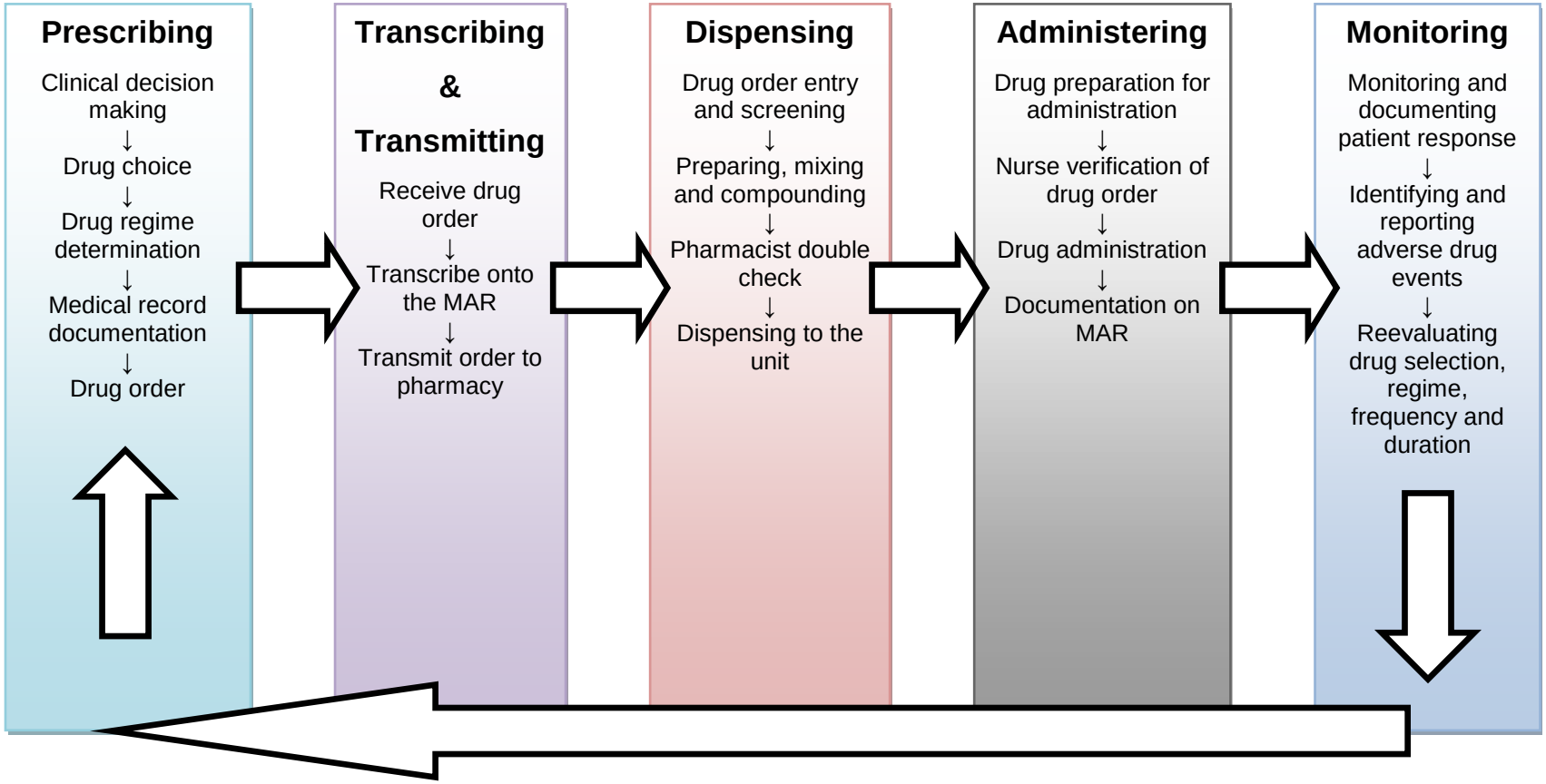
Date: _____

Room # _____

As a safety precaution, nurses routinely need to identify their patients when giving any medications. And it is very important that you as a patient know what medications you are taking and why. Can you please answer yes or no to the following questions for us? Thanks in advance for answering these questions as we are always looking at ways to improve patient care.

1. Did the nurse check your armband? Yes □ No □
2. Did the nurse ask you "What is your name"? Yes □ No □
3. Did the nurse ask you to spell your name? Yes □ No □
4. Did the nurse ask you your birth date? Yes □ No □
5. Did the nurse open your medications at the bedside? Yes □ No □
6. Did the nurse watch you take your medications? Yes □ No □
7. Did the nurse tell you what medications you were receiving? Yes □ No □
8. If a change was made to your medications did the nurse explain why? Yes □ No □

Appendix I: Medication Use Process



Note. Based upon the works of Institute for Safe Medication Practices (2002, 2005b) and Aspden, Wolcott, Bootman, and Cronenwett (2007).

Appendix J: Patient Identity Verification Process

1. **Verification of Identity**

   Prior to any health service being provided, patient identity must be verified. Health services include any action performed for or with a patient including medication administration, tests, procedures or treatments.

2. **Verification Process Requirements**

   There are three steps to the verification process:

   a) Request and confirm at least two patient identifiers with the patient, the patient's alternate decision maker, and/or using an identification source such as a health care card.

   b) Match and verify the two patient identifiers with the documentation that outlines the health services to be performed. Documentation may include the MAR, patient chart, lab requisition or other documents.

   c) Verbally confirm the patient's identity with him/her, unless that is prevented by the person's clinical condition or communication abilities.

3. **Approved Patient Identifiers**

   Approved patient identifiers include:

   a) Patient's first and last name
   b) Date of birth
   c) Unique lifetime identifier
   d) Personal health number
   e) Medical record number
   f) Patient identification barcode
   g) Government issued identification number
   h) Patient address
   i) Recent patient photograph (restricted to settings with an approved photo identification process in place)

4. **Emergency Situation**

   In an emergency situation, the patient will be assigned to a temporary unique identity number for use until the patient's identity can be verified

Note. Adapted from *Patient Identity Verification: PS–06* (pp. 1–3), by Health Region, 2012, Edmonton, AB: Author.

Appendix K: Sample Test for Compliance for the ROP for Two Client Identifiers

PATIENT SAFETY AREA: COMMUNICATION

GOAL Improve effectiveness and coordination of communication among caregiver providers and with the recipients of care/service across the continuum

ROP 6 **Use at least two client identifiers prior to the provision of any service or procedure**

TEST FOR COMPLIANCE Does the organization use at least two client identifiers (neither to be the client's room number) prior to the provision of any service or procedure?

RESPONSE Yes

LOCATION OF EVIDENCE Regional Nursing Policies located on professional practice website and in policy and procedure manual

- M-1 "Medication – Ordering, Preparation, Administration and Disposal"
- P-12 "Point of Care Testing"
- Blood administration

Regional Policies located on professional practice website

- Regional Policy #1414 "Consent for Treatment, Special Procedure & Inter Vivos Gifts for Transplantation"
- Regional Policy #1611 "Clinical Responsibility for Documentation of Health Information – includes use of abbreviations. Future plans include the release of the 'Clinical Documentation' policy which has Appendices related to identification and documentation of allergies
- Regional policy #1618 "High hazard medication management: Potassium Chloride (KCL). Currently a policy that would address all high hazard medications is under development

Education in Regional Skills Lab as part of orientation for Blood Administration