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UNIVERSITY OF CALGARY

The Social Organization of the Staffing Work of Nurse Managers: A Critique of Contemporary Nursing Workload Technologies

by

Olive Fast

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

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Abstract

The multifaceted work of providing hospital services on a patient care unit requires people with the ability to coordinate, monitor, and report on the work done by nurses, unit clerks, and health care aides. Nurse managers (NMs) in hospitals are responsible for doing this work. NMs devote significant time and energy to ensure enough staff are available to care for patients; however, this "staffing work" is a source of tension. Motivated by my own experience of nursing management, in this dissertation I empirically describe and analyze NMs' activities and the tensions they experience. I applied institutional ethnography (IE) to develop an account of how NMs' work of staffing is socially organized. IE, a method of inquiry, offers an alternate analysis to the authorized knowledge of health care, making possible a critical empirical description of what it is like to be an NM doing staffing work in contemporary Canadian hospitals. Insights into how NMs' thinking is influenced by economic imperatives, supporting them to act in ways that undermine nurses' ability to provide patient care, are revealed. An evidentiary trail is built of how documents and technologies (such as the workload management system) are used to plan and administer nurse staffing. This study offers a caution against the increasing reliance on knowledge produced by workload management systems and the relations of ruling into which NMs are pulled when they use such systems. My argument is that NMs' material knowledge of how to organize safe staffing is being subordinated by knowledge produced in and by contemporary nursing workforce technologies. The loss of this material knowledge and abstracted knowledge that replaces it jeopardize how NMs can be relied on to provide adequate nursing resources to keep patients safe.

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I begin this acknowledgement by recognizing the consistent support I received from my supervisor, Dr. Janet Rankin, during the course of this doctoral journey. From the moment I met with her to discuss the idea of entering the PhD program she has walked beside me, advising, admonishing, pushing, and sometimes pulling. Without her ongoing support and encouragement this research project would not be.

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Thank you to my employer, Mount Royal University, for supporting me in my studies and providing me with time off from my teaching, allowing me to focus on discovering what it is I have found.

Thank you to my brothers and sisters and extended family, for your ongoing encouragement, as I once again entered the halls of academia to explore what it was I did not know.

Most of all, I thank my immediate family, my husband Dan, my daughter Christina, and my son Michael and his partner Sabrina. Your patience, Dan, and your willingness to listen to my ramblings provided a way for me to discover how to write. Your support kept me going and helped me to believe in myself. To Christina, Michael, and Sabrina, thank you for your love and never making me feel guilty for going to school, once again!

I also wish to acknowledge that this dissertation has been professionally edited.

Dedication

This dissertation is dedicated to my mother, Susie Wiens, who passed away in Summer 2014 at the age of 92. She was my inspiration. Unknown to me, until I graduated with my Diploma in Nursing, my mother had trained as a nurse for 3 years at the same hospital as I. Her belief in helping people heal was evident throughout her life as she raised eight children, supported a child with chronic illness, and worked full time as a Registered Nurses Assistant. She brought me into her world of caring for seniors at a young age—first as a young child who sang for residents, then as a care aid, where I learned how to provide bodily care for aging people. I still use my early experiences of working side by side with her—watching her encourage an elderly woman with Alzheimer's to join the baking group, who sat down and made apple turnovers beautifully from memory, or sitting another woman with dementia down at the piano, who then proceeded to play hymns from memory for the next hour. Through her example my mother taught me how to care for people by thinking outside the box. She taught me to love God, love life, love people, and to make my life count.

Table of Contents

Abstract ii

Acknowledgements iii

Dedication v

Table of Contents vi

Table of Figures xi

List of Abbreviations xii

Chapter 1: Focus and Framing 1
- Importance of the Research 2
- Background 3
  - Personal experience of entering the hospital 4
  - My everyday/night work 6
- What I Discovered 11
- Structure of the Remainder of this Dissertation 13

Chapter 2: Literature Review 15
- Nursing Management Literature 16
  - NM competencies 17
  - NMs and nurse retention 20
  - Concepts of "best" leadership style 21
  - Literature related to a shortage of NMs 24
    - Recruiting NMs 25
    - Retaining NMs 26
- Incorporation of Industrial Processes and Business Economics into Health Care ... 28
  - Sustainability of Canadian health care system 29
    - New public management 30
    - Process improvement 33
    - LEAN methodology 34
  - The economics of skill mix 36
  - Literature on quality and safety 38
  - Quality improvement 39
  - Literature citing the importance of NMs' knowledge of economics 40
  - Knowledge of costs compared to outcomes 42
  - Informatics 43
    - Computer technology used to produce authorized knowledge 43
    - Nurses' use of technology 44
    - Workload management systems 45

Critical Literature 47
Critique of the efficiency discourse in health care 48
Critique of power relations that obfuscate concerns 50
Conclusion 51

Chapter 3: Method of Inquiry – Institutional Ethnography 53
Development of IE 53
Epistemology: Two modes of knowing 54
Ontology 55
Standpoint 56
Explicate as opposed to explain 57
IE's Terms and Conventions 57
Filling the lines 57
Institutional discourses 58
Ruling relations 58
Social relations and generalizing social relations 59
Texts 60
Work 61
Disjuncture 62
The research problematic 62
Mapping the extralocal 63
Application of Literature in Study Design 64
Research Study 66
Interview process using IE 67
Observational fieldwork 68
Selection of texts 69
Data management 70
Process of data analysis 70
Research challenges 71
Institutional capture 71
Analytic drift 73
Limitations 73
Conclusion 74

Chapter 4: Social Organization of Nursing Resources in AHS Hospitals 76
Health Care Funding in Canada 77
The Canada Health Act 77
Provincial jurisdiction 78
Hospitals' responsibility to administer funds 78
Administration of unit budget 79
Textual Organization of Budgets and Nursing Schedules 80
Baseline staffing 80

Rotations 81
Staff lines 81
The schedule 82
Social Organization of NMs' Work of "Filling a Line" 84
Identifying the need to hire a nurse.....84
Posting the position.....85
Approval process 86
Choosing the applicant.....89
Following all the "little rules".....89
Decision to hire 92
Conclusion 92

Chapter 5: Staffing Needs: When is "Enough" Enough? 94
Insertion of the WMS Ruling Relation in NMs Determination of Enough Staff 95
Evolution of the WMS 95
Ruling practice of the WMS 96
NM Tori's work to accurately capture nurses' work 97
WMS indicators that produce authorized knowledge of nurses' work...99
Data "makes no sense" to NMs 101
Inaccurate data – a problem to be solved.....103
How the WMS determine the truth about staffing needs.....105
NMs' held accountable to the truth of WMS data 105
How the WMS shapes NMs' knowledge of staffing 106
The extralocal organization of the WMS.....107
Linking the WMS Canadian patient classification system to CIHI.....107
Unit "acuity" identified when a patient is counted 111
Impact of CIHI's distribution of aggregate data on hospital funding...112
What "actually" happened, not what "may have" happened 114
Conclusion 116

Chapter 6: The Social Organization of NMs' and Nurses' Knowledge of Workload.....118
Who Decides When Extra Staff Are Needed?.....118
NMs Work of Inserting Ruling Relations into Nurses' Thinking.....119
Workload: A Shell Word 120
Nurses' knowledge of workload 120
Working around baseline to accommodate workload.....122
Authorized knowledge of workload.....123
NMs' precarious balancing act 124
Unpredictability of Patient Care and Workload.....129
Need to Cut Overtime Use Produces Shortage of Nurses.....130
Filling a hole in the schedule 130
Process of filling a hole.....131

Organization of "doing without" 134
NMs' use WMS to address nurses' concerns of running short.....136
Nurses' Knowledge of Staff Numbers "Good to Work With" 138
Nurses and WMS Data Disregarded When Budgets Cut.....139
VP's response to mandate to cut costs.....141
Example of funding cut impact on NMs' work of staffing.....142
Arbitrary cost cutting produces knowledge of NMs' "inefficiency".....143
WMS: NMs' Accountability to its Ruling Relation 145
Conclusion 146

Chapter 7: Institutional Projects to "Improve" Nurses' Productivity and Managerial Visibility 148
Rotation Optimization Program.....149
Workforce Model Transformation Project.....151
Activating the Productivity Discourse to Optimize Staffing 154
NMs' Knowledge Subsumed by Authorized Knowledge of Nurses' Productivity.....160
Rotation Development 163
Producing Inflexibility.....166
Work to Increase NMs' Visibility – A Ruling Relation 169
Work of Being Visible.....171
Accountability systems organizing NMs' work 173
Material knowledge of staffing needs.....174
Conclusion 176

Chapter 8: NMs Organized to Find "Savings" – Introducing "Staff Mix".....178
Alberta Government Funding Cuts.....179
Authorized Knowledge of Costs.....181
NM Knowledge Greater Than Authorized Knowledge.....182
Work of "Finding Savings" 185
Strategies to Decrease Costs: Staff Mix and Overtime.....186
Skill mix.....190
Tori's story.....191
Impact of skill mix discourse on Tori's work.....193
Discourse of the "right staff mix".....194
Introducing a new ruling relation: Acuity "trumps" baseline.....197
Was it really an RN that you needed?.....199
Material knowledge that lies outside of the WMS.....200
Organization of Overtime to Find Savings – How Overtime Actually Happens ...202
Work of approving overtime.....203
NMs' ability to find savings by limiting overtime.....205
Authorized Knowledge of Overages Used to Create Discourse of Inefficiency 207

Conclusion 208

Chapter 9: Planning for the Needs of Patients 211
Staff Training 211
Eliminating "Extra" Lines.....214
Approving a Shortage of Nurses.....217
NMs' Organized to Limit Staffing Resources 221
Nurses' Knowledge of "Safe" Staffing Subsumed by Authorized Knowledge.....223
Conclusion 226

Chapter 10: Summary, Discussion, and Recommendations 227
Summary of Major Findings.....228
Discussion.....233
Recommendations.....238
Conclusion 241

References.....242

Appendix A: The Ideological Circle.....266

Appendix B: Investigation into the Social Organization of the Work of Nurse Managers in Acute Care.....267

Appendix C: Investigation into the Social Organization of the Work of Nurse Managers in Acute Care.....268

Appendix D: Institutional Ethnography Interview Table 269

Appendix E: Information Regarding Presence of Institutional Ethnographic Researcher.....270

Appendix F: Workload Management System Report Provided to Nurse Managers 271

Appendix G: Aims of the Provincial Services Optimization Review.....272

Table of Figures

Figure 1. Excerpt from MWR – increased productivity. 154

Figure 2. Photo of manager workforce report..... 156

Figure 3. Excerpt from MWR – effective utilization..... 157

List of Abbreviations

AHS	Alberta Health Services
BAS	Business Advisory Services
CARNA	College and Association of Registered Nurses of Alberta
CIHI	Canadian Institute for Health Information
CN	Charge Nurse
CNA	Canadian Nursing Association
ED	Executive Director
ER	Emergency Room
ESP	Employee Scheduling Program
FTE	Full-time equivalent
HCA	Health Care Aid
HR	Human Resources
ICU	Intensive Care Unit
IE	Institutional Ethnography
LPN	Licensed Practical Nurse
MCAP	Managed Care Appropriateness Program
MIS	Management Information System
MWR	Managers Workforce Report
NAS	Nursing Activities Score
NM	Nurse Manager
NPM	New Public Management
OR	Operating Room
PCC	Patient Care Coordinator
PRC	Professional Responsibility Concerns Report Form
RMS	Recruitment Management System
RN	Registered Nurse
RNAO	Registered Nurses Association of Ontario
ROP	Rotation Optimization Program

SC	Scheduling Clerk
TISS	Therapeutic Intervention Scoring System
US	United States
VP	Vice-President
WMS	Workforce/workload management/measurement system
WMTP	Workforce Model Transformation Project

Chapter 1: Focus and Framing

The multifaceted work of providing hospital services on a patient care unit is coordinated and monitored by nurse managers (NMs) who are responsible for supporting nurses, unit clerks, and health care aides in their everyday/night work of providing patient care. Nursing management involves, but is not limited to, communicating with other professionals to ensure patients are treated appropriately and in a timely manner, advocating for and providing resources (this includes supplies and personnel), and developing staff schedules that stay within budgets and abide by union contracts. In this research, I focused on the NMs whose responsibility it is to manage nurses caring for patients in hospitals.

Prior to the 1990s, nurses who supervised the work of nurses on hospital units were called "head nurses" (Shirey, 2006, p. 195). Generally, these were senior nurses who oversaw patient care and could be relied on to support staff with clinical decision-making. Head nurses had minimal authority or responsibility for budgets. During the 1990s, head nurse positions were eliminated (Canadian Nursing Advisory Committee, 2002; Doran et al., 2004) and new categories of hospital nursing leaders were established. Head nurses were asked to leave the union and become NMs (Meyer, 2008). With the change in title and removal from the union, NMs' managerial accountabilities increased. Instead of being responsible for a single hospital unit, they became responsible for multiple units.

In Canada, the transition of head nurses to NMs happened during an era of health care reform and restructuring (Doran et al., 2004). In 1998, 8.5% of registered nurses (RNs) working in Canada held management positions (O'Brien-Pallas, Tomblin Murphy,

Laschinger, White, & Milburn, 2004). By 2013, this number had decreased to 6.7% (Canadian Institute for Health Information [CIHI], 2014b). More RNs were reporting to fewer NMs in 2013 than in 1998, indicating the number of nurses reporting to NMs had increased. NMs were also given more administrative responsibilities. Their prior clinical responsibilities were shifted into organizing budgets and staff schedules. My experience in nursing management occurred following this time of restructuring, when a rapid increase in managerial responsibilities led to my own discontent and eventual resignation.

Importance of the Research

Currently, health care organizations in Canada find it difficult to recruit and retain nurses in key management positions (Brown, Fraser, Wong, Muise, & Cummings, 2013; Lee & Cummings, 2008). Recruiting is difficult because, as Wong et al. (2013) wrote, nurses are aware of the demands of NMs' work. There has been little written about what NMs do during their work and how they know to do that work. I have identified this as a gap in the literature that my research begins to fill. In general, NMs' responsibilities are known to people working outside the hospital unit (people who make policies, develop budgets, and direct NMs to act in specific ways) through their own understanding of what they need from NMs. Knowledge of NMs' work also exists in the form of organizational documents, guidelines, union contracts, and sets of directions that inform people of NMs' responsibilities. These types of knowledge I refer to as authorized knowledge, and include forms and reports NMs fill out that make them accountable to others. Another type of knowledge is obtained from an exploration of NMs' experiences. This includes NMs' knowledge of how to staff their units, based on their everyday/night work with nurses and patients alike. Diamond (2006) referred to this material work as "invisible"

(p. 51) work, because, while it happens, is necessary and can be described, it does not appear in the authorized accounts of what NMs do in their staffing work. Using IE, I explored how the social organization[1] of NMs' work of staffing happens as it does. I begin this report by describing NMs' knowledge of their invisible work of staffing, as opposed to knowledge about NMs' work recorded in official accounts that describe, direct, and account for this work.

Background

My research revealed how the tensions NMs experience while doing staffing work are socially organized. The research was embedded in a research tradition, institutional ethnography (IE), which chronicles and critically examines broad contemporary trends to manage and govern (Campbell, 1984; Griffith & Smith, 2014; Hamilton & Campbell, 2011; Melon, White, & Rankin, 2013). The contributions of institutional ethnographers and other critical researchers (Ceci, 2006; Purkis, Ceci, & Björnsdottir, 2008; Mannion, Small, & Thompson, 2005; Rudge, 2011; Willis et al., 2015) were an important part of the background that positioned my study, as they provided me with another way to interpret my data that did not conform to the institutional discourses within more common qualitative and quantitative research traditions.

In this study of NMs' work, I set out to examine processes that have developed to scrutinize, standardize, and control work practices that were formerly at NMs' discretion.

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[1] In IE, the term social organization refers to the coordination of peoples' activities and actions "as an actual ongoing process" (Smith, 1995, p. 191). My exploration of the social organization of NMs' work of staffing identified "things being put together systematically, but more or less mysteriously and outside a person's knowledge, and for purposes that may not be theirs" (Campbell & Gregor, 2008, p. 18).

Griffith and Smith (2014), referring to these processes as "managerial regimes" (p. 5) suggested the processes being introduced are a component of new public management (NPM), a form of management that began in the 1980s in a number of Organization for Economic Co-operation and Development countries that focused on public accounting and organizational best practice (Hood, 1995).[2] NPM created a "differentiation between supervision as direct control over work processes and management as an overall governing function and authority" (Griffith & Smith, 2014, p. 6). Prior to the move to NPM, which worked to centralize and standardize practices across large organizations, managers were instrumental in monitoring and directing work processes. Systems introduced by NPM established ways to organize work processes that were beyond any single manager's influence. These processes in health care, such as centralized electronic staffing systems, financial accounting systems, and bed management systems were evident during the period that I became a manager of six nursing units in 2005. In the following pages I provide an example from my experience of working as an NM to introduce the reader to NMs' work in general and to illustrate how a reflexive consideration of my own experience as a manager provided a touchstone for my research.

Personal experience of entering the hospital. Prior to becoming an NM, I worked in various nursing positions, mainly in hospitals, for a period of over 20 years. When I became an NM, I was made responsible for the nursing care provided by over

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[2] Hood (1995) identified numerous doctrines within NPM, citing various themes that appear in them. These include "the idea of a shift in emphasis from policy making to management skills, from a stress on process to a stress on output, from orderly hierarchies to an intended more competitive basis for providing public services, from fixed to variable pay and from a uniform and inclusive public service to a variant structure with more emphasis on contract provision" (p. 95).

200 nurses working in a 216-bed tertiary care centre. My managerial responsibilities included six different nursing units: the Emergency Room (ER), the Intensive Care Unit (ICU), the Intensive Care Step-Down Unit, the Obstetric/Gynecology Unit, Labour and Delivery, and the Intensive Care Nursery. The managers of the Patient Registration Department and Medical Records also reported to me, as did the hospital chaplain.

My work began each morning when I entered the hospital and walked through the ER. I timed my arrival as the night nurses were giving their reports to the nurses coming on to the day shift. My reasoning for this was to be visible to a larger number of nurses (something I learned from the literature was important to retain nurses). I would generally talk with the charge nurse (CN) from night shifts as well as the CN from day shifts. Frequently, I would be informed, "We had the night from hell—we can't take much more of this." Then would be the inevitable, "We're full of in-patients[3]—are we going to get beds today? We won't be able to see any more patients if we don't move these people out of the department."

I proceeded to my office, encountering numerous employees on the way who wanted to report on or consult with me about various issues, depending on where they worked and what their job entailed. At 8:00 a.m., my priority was to connect with the day shift coordinator, who had received a report from the night shift coordinator (both these people reported directly to me). Shift coordinators were responsible for coordinating the movement of patients throughout the hospital, assigning in-patient beds, and dealing with short-term staffing issues, such as nurses calling in sick for the next shift. Shift

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[3] In-patients referred to patients who were admitted by a physician and were waiting to be moved to a hospital unit.

coordinators were senior nurses who also functioned as the go-to person when issues arose between units, between staff members, and with patients and family members during times NMs, such as me, were offsite.

If issues arose at night that required an administrator's involvement, or if the numbers of patients waiting for care became dangerously high, the shift coordinator would call the administrator on-call for assistance or to ensure they were aware of the situation. Once called, the administrator became responsible for decisions made. My boss, whose title was community administrator, assigned a round-the-clock administrator to be on call for each week. The community administrator shared this duty with me and three other NMs. I was expected to be available one week out of five. Patient care coordinators (PCCs) on each unit usually dealt with issues on day shift, or discussed them with their NM. PCCs were responsible for coordinating patient care and staff assignments on the in-patient units. Generally, the demands on the NM generated by the on-call roster were greatest during nights and on weekends.

My everyday/night work. When I arrived in my office, the shift coordinator gave me a hospital report about what transpired during the night, how many patient beds were empty, how many patients were waiting for a bed, and other issues related to patient movement throughout the hospital and staffing needs of which she felt I needed to be aware. Depending on the issues brought forward by the shift coordinator, and whether my immediate attention was required elsewhere, it was then my goal to take 20 minutes to review emails. I made dealing with emails a priority in order to assess and approve any overtime labour that nurses had provided during the previous 24 hours. Delaying

approval had implications for both the payroll clerks and the nurses who would generally be counting on their overtime pay for personal budgeting.

Following a quick review and approval or refusal of generally over 50 emails, my next priority was to attend the bed meeting scheduled for 8:30 a.m. Bed meetings were attended by PCCs from in-patient units in the hospital. The purpose of bed meetings was to discuss the movement of patients throughout the hospital with reference to patient census sheets.[4] Managers and surgeons depended on PCCs to ensure there were postoperative beds available for patients scheduled for elective surgery. This required that physicians discharge patients from the hospital in order to make space for incoming patients. Those in attendance at bed meetings learned about the number of empty beds, definite discharges, potential discharges, and the number of admitted patients waiting for beds. Information provided at bed meetings was updated in the electronic patient admission and discharge data systems and accessed frequently by the shift coordinators and myself when knowledge of patient numbers was required for decision-making around staffing. Generally, there would be more admissions than scheduled discharges.

My responsibilities also included ensuring that ER department staff could care for patients arriving for treatment, while at the same time continuing to care for those already admitted into the department. When high numbers of patients admitted to the hospital were not moved out of the ER due to a shortage of beds, I was called to find beds on hospital units. In attempts to find beds, I would review a list of patients obtained from the

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[4] Patient census sheets indicated how many patients were in each patient care unit of the hospital, how many patients needed a unit bed following surgery, and how many patients were waiting in the Emergency Department for a bed on a unit.

Managed Care Appropriateness Program (MCAP), a computer program into which designated nurse reviewers enter specific patient information (Rankin & Campbell, 2006, p. 102). PCCs, NMs, and administrators used MCAP to identify patients who did not require acute care and could potentially be discharged. According to MCAP, the number of patients not needing to be in the hospital usually ran about 10–15% of the total number of patients. It was my responsibility to contact physicians to discuss potential discharge of patients identified by MCAP, as well as to contact community care managers when patients needed to be transferred to other facilities due to a lack of beds for acute patients. As well as using these strategies to find space to accommodate patients, it was also my responsibility to ensure there was adequate staff, with the help of schedulers, PCCs, and shift coordinators. A large part of my work related to staffing was my appraisal and approval of the overtime hours that the nurses were providing.

Following the bed meeting, I communicated with the community administrator, detailing the hospital bed situation and how various patient and staff issues were being addressed. An example might be that the hospital had 15 patients waiting for in-patient beds in the ER and there had just been a bus accident injuring 40 passengers who were all coming to the hospital, which would require the community administrator to keep those he was accountable to informed of the situation. An alternate scenario may be that the hospital had four units working short due to several patients requiring one-to-one nursing care, which is information the community administrator needed to be aware of should any patients, family, or staff complaints come to his attention. Another circumstance may be that the press would likely be contacting the community administrator due to an unfortunate patient care incident during the night, in which case he would need accurate

information to respond to questions. At the time that I held the NM role, the community administrator was held responsible for overall patient flow in the hospital and extended care facilities in the city. Information I provided to him kept him informed about patient flow and staffing or family concerns that needed to be addressed. In rare situations, such as when the ER had a large number of admitted patients waiting for beds on a unit, the community administrator used information I provided to respond to calls from the press, his boss, or others in the community.

After the 8:30 a.m. bed meeting, the rest of my day would unfold in various ways. I might have interviews with potential employees, phone calls to make, or staff schedules to develop. I might have to address employee concerns, hold meetings with union representatives, meet with product representatives, or chair a committee. Resource allocation was also a critical aspect of my daily work; I needed to know how many staff members were needed for each of the units for which I was responsible, how many were available, and who I could move around to ensure the safest staffing levels. I was responsible for budgets and worked to secure funds to purchase various supplies requested by PCCs. My budget responsibility also included a requirement to account for the extensive overtime incurred by nurses on units for which I was responsible.

The next critical juncture in my day was the afternoon bed meeting, which always seemed to arrive too soon. This meeting mirrored the morning meeting at which the PCCs and shift coordinator reported on the status of beds. Patients who were discharged during the day freed up beds and at the time of this meeting PCCs, who knew which patients were likely to be discharged before the end of the day, had a good idea of how many more beds would be available before the next bed meeting. The afternoon bed

meeting most often involved negotiations among PCCs about which unit could take patients and where extra spaces could be found to put beds in for patients. When I was not on call, my workday would officially be over following this meeting. However, frequently, I worked for several more hours, with a goal to work on at least one administrative project (e.g., developing a hospital decongestion plan, developing a plan for the hospital in the event of a pandemic, setting up a mock trauma day for ER, or connecting with project leaders in the admitting department or medical records) before going home for the day.

Often I experienced frustration. I was unable to be the NM I wanted to be. The multiple articles I had read about transformational leadership, retention, and recruitment, and best practices for leaders seemed impossible to enact. The discourses[5] informing the nursing management literature did not reflect my experience. Indeed, the contrast between what I had learned about what managers should do and what I felt I could do was stark. I worked to implement changes that were required of me by my boss, including changes to staffing levels that did not take into consideration what nurses and PCCs on the unit had told me about the unmanageability of their work. Later, when I reflected on my work and designed this study, I discovered there is very little in the literature about the actual everyday/night work of NMs and the ways in which their work comes to happen as it does.

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[5] Use of the term discourse in this dissertation refers to "concepts, ideas, ideology, beliefs, knowledge and any other social form of consciousness … whether they appear in text or talk, and (considered) central to the ongoing coordinating of consciousness or subjectivity that realize organization or institution" (Smith, 2001, p. 177).

Much is written about what NMs should do, how they should behave, and what they should know. Little is written about their actual work, how they know to do their work, and how tensions they encounter in their work arise. My research into the everyday/night work of NMs begins to fill this gap, identifying where the authorized accounts of NMs' staffing work bump up against their actual experience of that work.

What I Discovered

During my ethnographic observations, I discovered NMs taking seriously their primary responsibility and authority to support nurses in providing patient care. Daily, NMs assessed how sick patients were and whether or not there were sufficient staffing resources available to provide care. They talked to nurses as they walked through nursing units, reviewing the tally of patients, acuity, admissions, and discharges. The NMs noted who was on duty, monitoring the nurse–patient assignments. NMs knew what was going on during each 24-hour period—both with patients and with the nurses who were scheduled to work. They had detailed knowledge about the nurses' union contract, which they used to determine vacations, overtime, parental leave, disability leave, and so forth. Moreover, the NMs had a grasp of the week-to-week and month-to-month complexities of scheduling nursing resources to accommodate coverage 24 hours a day, 365 days of the year. NMs also knew the nurses on staff—their expertise, credentials, and capacity.

As I expanded my ethnographic gaze into the broader organization of Canadian health care, I noticed, and became empirically interested in, the part technology has to play in constructing staffing knowledge. I observed how nurses enter patient information into a workload management system (WMS), information that is compiled into aggregate knowledge that is read and acted on by health care executives, politicians, researchers,

and others, in locales distant from patient care units. This WMS constructs a different account of what is occurring than NMs and nurses know from doing their work.

My Research Problematic[6]

The WMS provides a different form of knowledge that organizes NMs to subordinate what they know about (and worry about) to technologically produced knowledge. Paradoxically, and as I will show in this dissertation, NMs coordinate their actions in line with strategies to ration nursing resources. The sum of this activity is that no matter how much NMs, nurses, and scheduling clerks (SCs) work to mediate the effect of technologically produced knowledge on patient care, over time, the directives to cut costs, find savings, be efficient, and run lean are the taken-for-granted rationality that informs how NMs know what to do. Broadly stated, it is *this* observation that is the problematic that directed the analysis. I examined what NMs' knew about staffing from talking to nurses and being present on the nursing to unit and contrasted this to how the workload management systems organized them to *know* about whether there were *enough* nurses – a form of knowledge that overrode what they knew from *being there.* I discovered that it is commonplace for nursing units to run short, creating circumstances in which patients' care needs routinely exceed available nursing resources. I show how this nursing shortage happens by explicating how NMs, who mediate between their everyday/night knowledge and the account generated by the WMS, know to do their work of staffing. I also provide evidence that demonstrates how NMs knowledge of their material work of staffing is subordinated to authorized, written knowledge of their work.

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[6] In IE a problematic is used to direct the investigation (Smith, 2005). See Chapter 4 for further explanation.

Structure of the Remainder of this Dissertation

In this first chapter, I have introduced my interest in studying NMs, providing the reader with a glimpse into their work, based on my own experience. In Chapter 2, I review numerous topics in the nursing, health care management and management literature that relate to NMs and their work. I discuss the current nursing management, health care administration, and business economics literature and the knowledge of the work of NMs this body of literature provides. I also examine the small body of critical literature that challenges mainstream thinking. In Chapter 3, I introduce IE as the method of inquiry, as well as provide an explanation of how I collected and analyzed my data.

In the next six chapters I explore the social organization of NMs' work from within Alberta Health Services (AHS), the organization responsible for providing health care services to people living in Alberta, Canada. Much of NM informants' talk focused on their work of staffing as being a problem for them, drawing me to focus on how NMs know to do this aspect of their work. In Chapter 4 I show how hospital unit financing is linked into the broad mandates and regulatory framework of the Canadian health care system. In Chapter 5, I demonstrate how NMs are organized to focus on limiting staffing to "just enough," based on the abstract knowledge generated by the WMS. I also explicate how the endorsement of WMSs by the Canadian Institute for Health Information (CIHI) cements their use in nurses' work at a national level. In Chapter 6, I describe and analyze how NMs' knowledge is shaped and determined by the authorized texts they take up when doing staffing work. I also show how NMs use their knowledge to organize how nurses in direct practice do their work, referencing the discourse of workload in the analysis provided. In Chapter 7, I focus on two AHS staffing projects

that NMs talked about and show how a net shortage of nurses necessary for patient care results when NMs activate knowledge obtained in the project work. In Chapter 8, I explicate in even more detail how NMs are organized to find savings within their departments, thereby further limiting resources available for patient care.

In the last analytic chapter (Chapter 9), I focus on the work of one NM who is striving to establish an efficient and effective staffing system for her unit. I detail how this work links her with numerous other projects at her hospital, all of which are designed to further streamline the staffing work she does. While this is an exceptional case, I use it because it captures the broad reach of the ruling relations[7] described in the preceding analytic chapters. In the final chapter, I summarize and discuss the relevance of my findings, identify threads not followed, and make recommendations for further research.

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[7] Smith (1990) identified ruling relations as the "total complex of activities … by which our kind of society is ruled, managed, and administered" (p. 14). See the "Ruling Relations" section found in Chapter 3 for further explanation.

Chapter 2: Literature Review

Nursing management literature has long been dominated by research on how NMs should interact with staff members and what they need to do to be considered "good" at their jobs. Guidance and recommendations on how to be good managers is published in journals such as the *Journal of Nursing Administration (1971)*[8], *Nursing Administration Quarterly (1976), Health Care Management Review (1976), Nursing Economic$ (1983), Journal of Nursing Management (1993), Canadian Journal of Nursing Leadership (1999), Nursing Leadership (1999), The Canadian Nurse (1999),* and *Policy, Politics, and Nursing Practice (2000)*. Grey literature,[9] in the form of regulations, standards of practice, and guidelines that direct the professional practice of nursing, with some attention to the practice of NMs, is also produced by nursing associations such as the Canadian Nurses Association (CNA), the Registered Nurses' Association of Ontario (RNAO), and the College and Association of Registered Nurses of Alberta (CARNA). Not-for-profit organizations such as the CIHI also produce grey literature relevant to NMs' work. In addition, NMs are accountable within their provincial health care organization, such as AHS in Alberta, to policies, procedures, regulations, and guidelines produced by human resources personnel, other administrators, and executive members.

The chapter is selectively focused on literature that intersects with and is relevant to NMs' work. I focus on common sets of directions the literature provides to NMs

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[8] Bracketed years identify the year in which the journal began to be published, highlighting the evolution of journals containing literature for NMs.

[9] Grey literature refers to literature that is not formally published in peer-reviewed journals, such as literature produced by "all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers" (Fourth International Conference on Grey Literature, as cited in The New York Academy of Medicine, n.d., para. 1).

(i.e., how they should lead, what issues should concern them, how they can improve health care delivery). Common terminology used in the literature includes staffing, quality, patient safety, leadership characteristics and style, efficiency and effectiveness, retention and recruitment, quality management, and the transformation of health care. My analysis revealed that NMs' work is influenced by knowledge obtained from literature related to nursing management, health care administration, and business economics, all of which organize to what NMs are to pay attention. I end this literature review by also presenting a review of literature by authors whose critical research troubles some of the taken-for-granted messages prevalent in managerial literature.

I conducted keyword searches using electronic databases such as CINAHL, MEDLINE, and PubMed during the years 2009 to 2015. Search terms I used were nurse manager and nursing management in combination with health care, business, and economics. I scanned reference lists of key articles for additional items and reviewed new releases of key journals (listed earlier). I also searched websites of government, nursing, and health care organizations in Canada for relevant documents. I conducted Google web and various newspaper searches intermittently to identify further grey literature on health care issues and concerns connected to NMs' work. The resulting literature review provided context for my study and serves to familiarize readers with the discursive terrain over which NMs' work is accomplished.

Nursing Management Literature

During my fieldwork (formal interviews and less formal conversations, as well as observations) I paid attention to the "hot topics" that were being discussed by my informants. These hot topics included being a "good" manager: keeping costs within

allotted budgets, being visible, keeping an open-door policy, retaining staff nurses, and staffing with the right number and kind of nurses. I have included a review of topics that were lumped together in the literature that addressed NM competencies. My reflexive looking backwards and forwards through my data and my reading of NM literature highlighted the topics I use to organize this review.

NM competencies. In my interviews I found traces of the language of NM competencies used by informants and in texts to which informants directed me. I also found NM competencies, in all their various forms, to be a major NM research topic. Some research studies equated NMs' competencies with successful management and listed having knowledge of economics (Chubbs, 2013) and being able to make decisions related to staffing skill mix (Laschinger & Wong, 2007) as essential. Other research studies focused on NMs' leadership style because of its impact on unit teamwork (Meyer, O'Brien-Pallas, Doran, Streiner, & Duffield, 2014), nurses' intent to stay (Cummings et al., 2010), nurses' satisfaction with work (Duffield, Roche, Blay, & Stasa, 2011), nurses' sick time taken (Schreuder et al., 2011), nurses' work environments (Sherman & Pross, 2010), and NMs' span of control (Meyer et al., 2011).

Nursing organizations echoed research studies that place NMs' competencies as a central aspect of managerial success. NMs look to nursing organizations such as CARNA, the CNA, and RNAO for support and direction in their work of management. The CNA and provincial nursing associations reference each other's work in grey literature produced for Canadian nurses. As an example, in Alberta, the CARNA (2011) document *Scope of Practice for Registered Nurses* referenced CNA documents that outlined NMs' responsibility to "develop organizational and management skills and also

hone strong leadership skills to be effective administrators" (p. 7). In Ontario, the RNAO (2006) *Developing and Sustaining Nursing Leadership*, provided direction for nursing leaders, focusing on leaders' characteristics and skills necessary for a healthy workplace (2006). In Alberta, CARNA (2015) used these same RNAO (2006) guidelines to provide education for nursing leaders. These are all examples of how grey literature provides NMs with knowledge about staffing practices across Canada.

Some writers differentiate between health care leaders' required competencies and business leaders' competencies by inserting the competency of "caring" into discussions of NMs' leadership characteristics. Dickson, Briscoe, Fenwick, MacLeod, and Romilly (2007), authors of the pan-Canadian health care leadership competency framework, defined caring as "the dedication of the leaders to health" (p. 1) and asserted that exceptional leaders "respect for the dignity of all persons … act with compassion … [and] exhibit fairness and a sense of justice" (p. 3). The authors argued that the traditional competencies of health care leaders have been focused on both "*doing*" (Dickson et al., 2007, p. 11) and "*being*" (p. 11). They contended that caring needs to be included as an essential health care leadership competency, as it is the differentiating factor between health care and business organizations (Dickson et al., 2007, p. 15).

In contrast, when MacPhee and Bouthillette (2008) developed a course of study for NMs, in collaboration with the British Columbia Ministry of Health, caring was not identified as a priority leadership competency. In preparation for this course, NMs participated in a provincial needs assessment and identified the following priority leadership competencies from a list provided to them: "understanding leadership style; team building and maintenance; organizational planning and strategizing; change

management process; empowerment and delegation; human resources planning and development; and communication" (p. 66). Whether or not MacPhee and Bouthillette included caring as a competency in the list provided to NMs, or if NMs did not see caring as integral to their work, is not known.

Similarly, Kronenburg (2014) did not differentiate between health care management and general business management competencies in a study conducted with nurses in the United States (US), in which 30 NMs participated. Kronenburg developed a survey using 19 key competency areas from the Commission on Accreditation of Health Care Management Education. The competencies were focused on processes and principles such as communication and relationship management, professionalism, and leadership. While knowledge of the health care system was considered a key competency, this knowledge was embedded in more comprehensive knowledge of business skills (Kronenburg, 2014, p. 32).

To summarize, while some researchers highlighted the importance of caring as a competency that separates NMs from business managers, most authors did not make this distinction. The small body of literature that linked caring to health care leadership was relevant to this study because my observations and interview data revealed that NMs' capacity to respond to staffing situations in a caring way is severely limited by the systems and rules that organize their staffing work. Literature that included caring as an NM competency has directed NMs to prioritize caring values and principles that informants in my study highlighted as being at odds with directives to standardize and streamline their work of staffing.

NMs and nurse retention. Study informants emphasized the cost of providing nursing care and NMs' responsibility to manage that cost. Retention of nurses was understood by informants to be part of NMs' work of managing staffing costs. Within AHS grey literature, a strategic directions report stated that one of the biggest challenges AHS faces is "to attract, retain and support a strong workforce" (Alberta Health Services [AHS], 2009, p. 17). The authors of the report identified that in 2009 staff exit rates ranged from 11.4–25.3% (AHS, 2009, p. 17). O'Brien-Pallas, Tomblin Murphy, and Shamian (2008) specifically examined nurse-exit rates and found one in every five nurses (20%) working in Canadian hospitals leave their jobs every year, with an average replacement cost of $25,000 per year (p. 19).[10] The cost to replace nurses increases the pressure on health care organizations to retain nurses, and, subsequently, increases research focused on how nurse retention is accomplished.

Research indicated that the competencies NMs' exhibit are connected to nurse retention. The findings from these studies direct NMs how to interact with and support nurses to decrease the cost of nursing turnover (Duffield et al., 2011; Force, 2005; O'Brien-Pallas et al., 2008). Some of these studies focused on why nurses leave their jobs, citing one reason as being nurses' impressions of their direct supervisor (Duffield et al., 2011; O'Brien-Pallas et al., 2008). In their Australian survey of nurses, Duffield et al. (2011) identified, "Good nurse managers play an important role in staff retention and

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[10] Taking O'Brien-Pass et al.'s (2008) estimated loss of 20% of the nursing workforce and the number of nurses (163,702) working in Canadian hospitals in 2010 (CIHI, 2011), I estimate that approximately 32,740 nurses leave their jobs each year in Canada. At the lowest estimated cost of $25,000 per nurse lost (O'Brien-Pallas et al., 2008), the estimated cost of nursing turnover is at least $818.5 million per year.

satisfaction" (p. 23). These authors identified creating a "positive work environment" (Duffield et al., 2011, p. 23) as a critical role for NMs. In their pan-Canadian study, O'Brien-Pallas et al. (2008) identified poor relations with NMs, physicians, and other team members as the significant factor in nurses' decisions to leave their jobs.

Concepts of "best" leadership style. The research on best leadership style for NMs in Canada has been significantly influenced by magnet hospital research in the US.[11] In the early 1980s, magnet hospitals were identified by the American Academy of Nursing as hospitals that attracted and retained nurses (Smith, Tallman, & Kelly, 2006). Characteristics cited as being unique to hospitals that had magnet status included "supportive management, positive nurse-physician and nurse-manager working relationships, and professional levels of autonomy and responsibility" (Smith et al., 2006, p. 74). Ongoing magnet hospital research linked NMs' leadership style to nursing satisfaction with their work (Armstrong, Laschinger, & Wong, 2009; Laschinger, Almost, & Tuer-Hodes, 2003; Smith et al., 2006).

Cowden, Cummings, and Profetto-McGrath (2011) identified two distinct categories of leadership styles: one that focuses on tasks and the other that focuses on individuals and relationships between individuals. According to Cowden et al., task-focused leadership styles include those labelled transactional, laissez-faire, management by exception, dissonant, and instrumental leadership. The authors identified relational leadership styles as those labelled transformational, resonant, and individual consideration (Cowden et al., 2011). In this literature review, I present relational

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[11] There is only one hospital in Canada, Mount Sinai Hospital in Toronto, which has received magnet hospital status for nursing excellence and patient care (University of Toronto, 2015).

leadership style and focus on transformational leadership, as it dominates the literature directing NMs how to lead (Cowden et al., 2011; Cummings et al., 2010; Force, 2005; Upenieks, 2003).

NMs with a relational leadership style focus on "people and relationships to achieve a common goal" (Cummings et al., 2010, p. 364). Cummings et al. (2010) produced a systematic review of studies that examined the perceived relationship between various leadership styles and nursing workforce outcomes. The authors established that NMs who practice a relational leadership style are more likely to retain nurses than NMs whose leadership style focuses on task completion alone (Cummings et al., 2010). Cowden et al. (2011) found NMs who focus "on the individual needs of their staff and who strive to meet those needs are more likely to retain their staff" (p. 471) than those who do not practice relational leadership styles. Their review supported "a positive relationship between transformational leadership, supportive work environments and staff nurses' intentions to remain in their current position" (Cowden et al., 2011, p. 461).

Several studies identified NMs' characteristics that exemplify a transformational leadership style (Cummings et al., 2010; Force, 2005; Registered Nurses' Association of Ontario, 2006; Upenieks, 2003). According to Force (2005), transformational leaders have personal power and exemplify extroverted personality traits, likeability, and openness. Bass and Avolio (as cited in Cummings et al., 2010) originally defined transformational leadership as exhibited by people whose behaviours "motivate others to do more than they originally intended and often more than they thought possible" (p. 364). Upenieks (2003) studied the relationship between nurse job satisfaction and leadership effectiveness in magnet and non magnet hospitals. She stated that previous

research of magnet hospitals had identified the following transformational leadership characteristics:

> being supportive and knowledgeable; maintaining high standards and living up to the expectations of staff; remaining highly visible to clinical nurses and responsive to their needs; upholding open lines of communication; valuing education and professional development; preserving a position of power and status within the hospital; and keeping actively involved in state and national professional organizations. (Upenieks, 2003, p. 87)

Staff nurses interviewed at hospitals having magnet status considered leaders with a transformational style as being accessible to nurses, supportive of nurses' autonomous decision-making, and able to empower nurses by giving them access to opportunity, information, and resources (Upenieks, 2003).

Developing a transformational leadership style is encouraged by professional nursing organizations. For example, RNAO (2006) produced best-practice guidelines for developing and sustaining nursing leadership. The RNAO (2006) guidelines provided direction for leaders' behaviours, identifying five transformational leadership practices "fundamental to transform nurses' work settings into healthy work environments for nurses" (p. 23). These guidelines indicated that to transform the workplace NMs must build relationships and trust, create an empowering work environment that supports knowledge development and integration, lead and sustain change, and balance competing values and priorities (Registered Nurses' Association of Ontario, 2006, p. 23). The guidelines further identified that using transformational and relationship-based leadership styles lead to numerous benefits for nurses, including increased job satisfaction, quality

of life, empowerment, organizational commitment, nurse retention, unit effectiveness, and emotional health (Registered Nurses' Association of Ontario, 2006). Furthermore, RNAO (2006) cited research that links a transformational leadership style to increased patient satisfaction and quality of life, as well as improved health outcomes (p. 29). Production of a "best" leadership style continues to focus NMs on becoming better by improving their leadership characteristics, thereby increasing their ability to retain nurses and decrease the cost of care.

Literature related to a shortage of NMs. Having explored the literature on NM competencies and leadership style with particular reference to nurse retention and recruitment, I now turn to the literature that explored why NMs leave their positions. Numerous colleagues of mine have left NM positions in recent years. Other colleagues, competent and experienced nurses in leadership positions (such as nurse educators and CNs), refused to consider taking a management position in spite of a need within the organization to hire NMs. Several studies highlighted the difficulty in recruiting and retaining NMs in Canada (Spence Laschinger et al., 2008; Wong et al., 2013). In their analysis of research study findings, Spence Laschinger et al. (2008) indicated, "Nursing leadership positions in Canada have decreased by 6,849 (29%) as a result of hospital restructuring in the 1990s" (p. 85). The authors examined how NMs' "span of control" (Spence Laschinger et al., 2008, p. 85), or areas of responsibility, have increased following the overall downsizing of the managerial workforce in the 1990s, and stated that the decreased number of managers limits their availability to mentor and support nursing staff, increasing nurse dissatisfaction with their work.

In their study, Wong et al. (2013) surveyed 1,241 nurses in nine Canadian provinces on nurses' aspirations to move in to management roles. Wong et al. estimated a shortage of 4,200 NMs would occur in Canada within the next decade (p. 231). Similar findings are reported in the US, where a study commissioned by the American Organization of Nurse Executives indicated 53% of senior nurse officers reported difficulty in recruiting NMs (Shirey, 2006). Shirey stated that by 2020 the US is expected to have a shortage of at least 67,200 NMs.

Recruiting NMs. Rankin and Campbell (2006) noted NMs experience ongoing conflict as their work focuses them on supporting organizational interests, which are often at odds with what patients need from nurses and what nurses need from their NMs. Wong et al. (2013) analyzed nurses' reluctance to apply for managerial positions using data from a national cross-sectional survey of Canadian nurses. They identified concerns with "the hours managers are working and the dissonance they experience in their role trying to meet both staff and organizational needs" (Wong et al., 2013, p. 239). Wong et al. also discovered that front-line nurses see "the effects of manager stress and … [are] aware of how some of their managers perceived the difficult aspects of the role" (p. 239). They further identified "heavy workload, poor work-life balance, large span of control, and responsibility for multiple sites" (Wong et al., 2013, p. 366) as factors that prevent nurses from aspiring to NM positions. Other researchers reported reasons nurses give for not accepting NM positions include the following: no significant remuneration (managers

are paid less than staff nurses when overtime and differential[12] are taken into account), managerial overtime hours not compensated, no union protection resulting in decreased job security, and lack of organizational support (Maslove & Fookes, 2004; Sytt, Ljunggren, & Carlsson, 2007; Wong et al., 2013).

Retaining NMs. Lee and Cummings (2008) in their systematic review of 12 studies identified factors influencing NMs' job satisfaction. The studies were published largely in the 1990s and 11 out of the 12 were conducted in hospitals. Lee and Cummings found organizational change (such as decentralized decision-making, a change in the number of employees for which they are responsible, or a change in formal communication) influenced NMs' job satisfaction. A number of studies reviewed by Lee and Cummings indicated that NMs' satisfaction with their work was also influenced by how supported they felt by the organization.

Organizational support is a term used widely in the management literature to refer to different aspects of NMs' work. Lee & Cummings, 2008 identified organizational support as including emotional support and the experience of being heard by supervisors or as NMs' ability to independently make decisions without having to obtain approval. The authors also found organizational support for NMs involved the availability of opportunity for further education and instruction about how to do their job.

Spence Laschinger, Wong, Grau, Read, and Pineau Stam (2011) found, "Empowered nurse managers at all levels who feel supported by their organizations are more likely to stay in their roles, remain committed to achieving quality patient care and

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[12] The term differential refers to the amount of money paid above an employee's regular hourly rate when they work on an evening, night, or weekend shift (UNA, 2013).

act as influential role models for potential future leaders" (p. 877). The authors defined organizational empowerment as having "access to information, support, resources needed to do the job and opportunities to learn and grow" (Spence Laschinger et al., 2011, p. 879). They define support as being "informal and formal feedback and guidance received from superiors, peers and subordinates" (p. 877).

Other research literature focused on the challenges NMs experience related to the work environment, a shortage of NMs, and increased NM "span of control" (Shirey, 2006, p. 193) as impacting retention of NMs. References to increased span of control identified an increase in numbers of nurses for whom NMs are managerially responsible (Merrill, Pepper, & Blegen, 2013). Canadian and Australian studies identified increased span of control as a cause for NMs to leave their job (Anthony et al., 2005; Meyer, 2008; Paliadelis, Cruickshank, & Sheridan, 2007). Other studies highlighted NMs' increased workload; inability to support staff to the extent desired; lack of recognition, resources, and time; lack of incentives; inordinate amount of on-call time; and too much responsibility to perform without adequate authorization (Brown et al., 2013; Skytt, Ljunggren, & Carlsson, 2007; Warshawsky & Havens, 2014).

So far in this review of the literature I have highlighted issues nurses and NMs identify when considering whether or not to move into management positions; positions they identify as being unattractive, highly stressful, and unmanageable. While literature on NMs' responsibilities to recruit and retain nurses focused on *how* NMs can use transformative leadership styles to improve nurses' job satisfaction, the literature identifying nurses' and NMs' concerns highlighted issues with NMs' work, not their characteristics, as the problem to be solved when recruiting and retaining nurses and

NMs. In my research, NM informants expressed frustration with organizational policies and processes that impacted their ability to be the leaders they wanted to be. One NM informant confided that she was considering resigning her position, since what she knew to do from experience and what the organization required her to do in relation to staffing work were in opposition to each other, creating tensions for her that she believed could not be resolved. This NM's experiences reflected my own experience of tensions in my NM position. My frustrations with what I knew I needed to do to provide nurses and patients with the resources they required, while at the same time being required to pay attention to the financial printouts that told me I was using too many resources.

Incorporation of Industrial Processes and Business Economics into Health Care

In the first section of this literature review I focused on enduring topics in the body of nursing management literature spanning a 15-year period. These topics included leadership, leadership competencies, and the links between NMs and retention and recruitment of nurses. More recently the literature has focused on reasons NM positions are difficult to fill or keep filled. The research devoted to support a better understanding of recruitment and retention issues offered NMs insight and guidance about how to be an NM. The beliefs, values, and activities the literature promoted were evident in how the NMs I interviewed reflected on their own work and the issues they encountered in the NM role[13]. I now move on to another more recent topic that circulates in research literature on NMs. This topic includes the discourses that organize NMs to pay attention

[13] I expand on this point in chapters 4-9, which provide the analysis of how NMs take up various discourses found in literature that create tensions in their work of staffing.

to knowledge of economics in the form of budgets, electronic databases, and the production of a "lean" staffing system.

Sustainability of Canadian health care system. The NM literature I review in this section focuses on managerial accountability to economic efficiencies in accordance with the neoliberal[14] agenda of the past 30 years, which includes fiscal austerity. High on this agenda is the financial sustainability of Canada's publicly insured health care system. The cost of maintaining a publicly funded health care system in Canada has been cited as unsustainable (Levert, 2013). Taking up references to "unsustainability," people working in health care organizations have looked to other organizations, such as those in the aviation and auto industries (Pronovost et al., 2006), for ways of creating a more efficient and thereby more sustainable system. Furthermore, in the quest to control costs, the Canadian health care system has been broadly influenced by trends in the US, where a largely for-profit health care system exists. In the US, health care has unabashedly been tightly run as a business. In light of the apparent efficiencies realized in private health care in the US, the pressure on Canada to adopt a system open to more private health care service is mounting (Forbes & Tsang, 2012). In addition, as a way to save money, the Canadian publicly insured health care system is adopting strategies used in private (for-profit) systems in the US (Griffith & Smith, 2014).

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[14] Neoliberalism refers to "a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade" (Harvey, 2005, p. 2). W. Brown (2006) stated neoliberalism "depicts free markets, free trade, and entrepreneurial rationality as *achieved and normative*, as promulgated through law and through social and economic policy" (p. 694), suggesting "neoliberalism casts the political and social spheres both as appropriately dominated by market concerns and as themselves organized by market rationality" (p. 694).

New public management. In recent years, a collection of IE research has surfaced that critically examines contemporary forms of public sector management dominated by attention to the economic bottom line. Griffith and Smith (2014) argued that as a result of the emphasis on markets, debt, deficit, and profits, a neoliberal discourse has come to dominate everyone's thinking and to "govern both economic policy and how economic issues are represented in the media" (p. 4). The neoliberal discourse, or agenda, is currently understood to refer to global and national policy frameworks that support extensive economic liberalization policies such as privatization, fiscal austerity, deregulation, free trade, and overall reductions in government spending. Strategies referred to as the New Public Management (NPM) are the specific technologies and approaches being used to collect data and monitor outcomes (within a narrow view of what is counted as an "outcome). The data is used to restructure work practices. For institutional ethnographers, strategies of the NPM provide a great deal of the *material evidence* that builds "neoliberalism" which is often used as a more abstract reference.

Griffith and Smith contextualized the evolution of globalized economic practices that reduce national jurisdiction over local economies within a network of global trade agreements and monetary policies expected to produce economic growth.[15] They noted that commercial enterprises, financial organizations, and corporations are organized and operate within these global networks (Griffith & Smith, 2014). Global networks, powerful systems of transnational economic governance, have altered the relationship

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[15] The language of growth produces an assumption that without a growing economy there is something wrong with society, and that constantly working to improve production and decrease costs is required in order for society to be "healthy." The discourse of growth is a reflection of the neoliberal agenda working to organize market rationality.

governments have with corporations. Governments now work to service capital expansion instead of elected citizens in efforts to stimulate economic growth (Griffith & Smith, 2014, p. 4). Canada has experienced "a shift away from service to citizens towards a labour force management strategy oriented to providing a service to employers" (Griffith & Smith, 2014, p. 5). This shift in practice has resulted in a focus to compare, standardize, and limit resource use across sectors, at the provincial, federal, and transnational levels. Hood (1995) termed this shift accountingization, which he defined as "the introduction of ever-more explicit cost categorization into areas where costs were previously aggregated, pooled or undefined" (p. 93). In their analysis, Griffith and Smith joined other critics of the reorganization of public sector management practices that are broadly referred to as NPM.

Several NPM strategies were evident in NM informants' work of staffing. The first one was the imposition of managerial practices found in private businesses onto public institutions. A second strategy was the "adoption and adaptation of strategies and textual technologies that revolutionized corporate management during the 1980s and 1990s" (Griffith & Smith, 2014, p. 6). The third NPM strategy was to actively "search for finding alternative, less costly ways to deliver public service" (Hood, 1995, p. 97). The fourth was for public sector organizations to "move towards more *explicit and measurable* (or at least checkable) *standards of performance* … in terms of the range, level, and content of services as against trust in professional standards and expertise across the public sector" (Hood, 1995, p. 97). In contrast to NPM strategies, people expect "professional" health care workers to have internalized ethical guidelines and a level of competence to produce actions that align with societal norms, without the need

for intensive supervision. My research found multiple managerial technologies[16] being used by NMs—managerial technologies used to standardize and measure representations of nurses' and NMs' work.

My analysis uncovers untoward activities that standardized representations produce within NMs' staffing work. I discovered how NPM functions within hospital units and how it impacts NMs and nurses work of staffing. Despite evidence cited at the end of this chapter of the serious hidden consequences of NPM on nursing work, the assumptions and practices embedded in NPM "rule" the managerial discourse (both grey and published literature). NPM produces the directions and accountability practices that organize contemporary Canadian health services.

NPM is implicated in the health care reform strategies that provide directions for NMs' to participate in initiatives to "transform the system" (Denis, Davies, Ferlie, & Fitzgerald, 2011, p. ii). Denis et al. (2011), writing for the Canadian Health Services Research Foundation, stated that to "achieve better alignment between the care offered and care the population needs" (p. ii) health care must be transformed. The authors held NMs partially accountable for this transformative change, stating, "Managers have to change their focus and pay more attention to the inner workings of their organizations and to the design of environments and processes that can stimulate performance" (Dennis et al., 2011, p. 16). The "performance" that Denis et al. (2011) are promulgating aligns with NPM strategies to streamline work practices, identify areas of cost efficiency, and

[16] Managerial technologies refer to practices that translate the actualities of work into standardized textual representations fitting managerial frames for the purpose of comparing performance, outcomes, cost, and so forth (Griffith & Smith, 2014).

assess a patient's care costs (including the amount of nursing time a patient used). These authors not only advocated for NMs to be more involved in the transformation of health care, they also expressed concern about the overall sustainability of the Canadian health care system (Denis et al., 2011), the topic that, under the discursive influence of NPM, underpins the health care economic literature (Forbes & Tsang, 2012; Levert, 2013; Pronovost et al., 2006). The AHS focus on improving staffing processes and practices to streamline and improve productivity of nurses and nursing care was an area of concern that NM informants highlighted in my research.

Process improvement. Process improvement is an issue that is gaining currency within NPM strategies being introduced into Canadian health care. It is a term used in manufacturing specifically and business more generally that refers to how processes can be changed to increase efficiency and productivity of workers (Bertolini, Bevilacqua, Ciarapica, & Giacchetta, 2011). Concepts such as inputs, throughputs, and outputs are used to assist managers to think about how to improve work processes. Meyer and O'Brien-Pallas (2010) applied these concepts in their development of a theory of nursing service delivery. They identified the flow of inputs (i.e., people, materials, resources, information), throughputs (i.e., services such as nursing interventions), and outputs (i.e., service outputs such as patient volumes) in hospitals (Meyer & O'Brien-Pallas, 2010, p. 2831). Application of industrial processes to health care, as an attempt to improve productivity and efficiency and to decrease costs, circulates within health care administration literature (Bertolini et al., 2011; Clancy & Delaney, 2005; Jones, 2006; Maleyeff, Arnheiter, & Venkateswaran, 2012). Interviews conducted with NM

informants highlighted the pressures they are under to decrease costs of nursing care and the impact of various forms of process improvement in which they are involved.

LEAN methodology. Another core NPM strategy being implemented in the Canadian health care system is the introduction of LEAN. In concert with efforts to decrease taxes and incentivize international investments in Canada, pressure is applied to health care organizations to decrease public service costs. Part of this pressure is an investment in the principles of LEAN production, which "are transposed into the design and management of public service with the ostensible aim of reducing costs while improving efficiency" (Griffith & Smith, 2014, p. 5). Health care organizations are increasingly turning to LEAN methodologies of process improvement. LEAN (Lean Six Sigma Canada, 2010) is an internationally popular product that is being marketed for the manufacturing sector. In its application to health care, LEAN promises to find ways of maintaining quality of care while decreasing costs. LEAN is "a philosophy of doing business with a focus on reducing or eliminating defects in conjunction with improving the flow in the value stream" (Lean Six Sigma Canada, 2010, para. 1). LEAN is closely aligned with the quality improvement movement. Demings, a New York University statistics professor, founded quality improvement science while working for Japanese industrial leaders Toyota and Sony (Kurth, 2013). LEAN is one of the latest quality management tools to evolve from Deming's teachings, linking the quality agenda to the implementation of LEAN methodology (Burkoski & Yoon, 2013).

The focus of LEAN is to provide a replicable framework for ongoing process improvement (Maleyeff et al., 2012, p. 542). LEAN is touted as being able to reduce waste in any business process and is cited as a methodology that

> seeks to minimize the resources required for production by eliminating non-value added activities that inflate costs, lead times and inventory requirements, while emphasizing the use of quality improvement programs, preventive maintenance, pull systems, flexible workforces and flexible production facilities. (Lean Six Sigma Canada, 2010, para. 3)

The focus of using LEAN in manufacturing is to improve efficiency and effectiveness, while at the same time increasing productivity. The same focus applies to health care, in which LEAN is applied in developing processes to move patients through the system more quickly and control costs during their hospitalization (e.g., see Melon, White, and Rankin [2013], who focused on a LEAN program being introduced into a metropolitan ER). The research presented in this dissertation reveals that NMs were deeply invested in improving the efficiency, effectiveness, and productivity of the nursing units they managed.

Jones (2006), founder of Lean Enterprise Academy, asserted that health care environments are quite predictable and thus adaptable to LEAN thinking (p. 16). Referencing the unsustainability of health care, as it currently exists in Canada, Jones stated that LEAN should be used to redesign hospitals in order to sustain health care funding. Jones wrote that hospitals need to begin redesigning processes by looking at patient discharge[17] and promoted strategies to continually pull the patient through the system.

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[17] Patient discharge refers to the organizational process of having a patient leave the hospital.

> To create steady flow means starting at the end of the value stream – with discharge! If you are not discharging patients as fast as patients are arriving then the process inevitably gums up. So discharge has to pull patients into beds and through theatres and through admission. (Jones, 2006, p. 17)

This type of LEAN thinking has been taken up in AHS hospitals, where nurses and NMs are directed to plan for a patient's discharge as soon as they are admitted to the hospital. LEAN consultants have also been contracted to map workflow in specific areas, such as ER departments (Melon et al., 2013), within AHS hospitals. NMs in my study highlighted how they were required to "run it lean," focus on the budget, limit the number of nurses working, and increase nurse productivity. Throughout my analysis I trace the LEAN discourses that surfaced in informants' talk.

The economics of skill mix. In keeping with the accountingization of NPM, health care organizations are looking at the cost of types of health care workers, such as RNs, licensed practical nurses (LPNs), and health care aides (HCAs), attempting to link health care costs to patient health outcomes. To identify the appropriate mix of these types of health care providers, companies such as QuadraMed (2015) have developed a computerized WMS that they state has the capacity to calculate the skill mix needed during any one shift.[18] In my research, I found that hospital administrators, looking to decrease costs, expect NMs, responsible for budgets and nursing rotations, to implement changes to skill mix on their units. NM informants in my study indicated that the rationale given to them for changing the skill mix of employees included providing more

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[18] The WMS and its impact on NMs' work of staffing are discussed in detail throughout my analysis chapters.

flexibility for labour cost containment, while also maintaining or increasing the number of staff available to provide care.

Increasingly, research literature has also reflected a growing interest in the mix of types of care providers, or the skill mix, employed to care for patients, and the cost of those providers (Griffiths, 2014; McGillis Hall et al., 2006; Salvador, Zoller, Weatherby White, & Highfield, 2012). A growing body of research indicated that a higher percentage of RNs on patient care units results in positive patient health outcomes, including decreases in urinary tract infections, length of hospital stay, and pressure ulcers (McGillis Hall et al., 2006; Welton, 2010). Aiken (2008), a leading nurse researcher working in the US, studied 10,000 nurses in 18 Pennsylvania hospitals. Aiken is an opponent of replacing RNs with lesser-trained workers. Aiken argued that her study and numerous others related to RN, LPN, and HCA skill mix suggest that a higher proportion of RNs on hospital units results in improved patient outcomes. Aiken noted that increased efficiencies, aimed at decreasing economic costs within hospitals, might be a factor in negative patient outcomes. Salvador et al. (2012) provided evidence of a direct relationship between higher numbers of nursing RN hours per patient day and decreased urinary tract infections and shorter length of stay in hospitals (considered negative patient outcomes). In spite of this literature highlighting the benefits of having higher numbers of RNs working to provide patient care, my informants indicated that they are required to continue looking for ways to decrease the cost of care by evaluating their skill mix.

While NM informants considered staffing a fixed cost, Kaplan and Porter (2011) suggested that what managers consider fixed costs are actually under their control and, therefore, not really fixed (p. 60). Fixed costs are defined as those costs "that remain

relatively unchanged in total, regardless of the volume of production or activity, within a fairly wide range of volume" (CIHI, 2011, p. 3). Fixed costs in health care include compensation for management and personnel. Kaplan and Porter recommended replacing trained professionals with "appropriately skilled but lower-cost health care professionals" (p. 60) to increase the rate at which health care providers see patients. Kaplan and Porter's identification of the volume of care being increased by decreasing the cost of professionals highlights the focus on cost cutting through adjustments to skill mix. The argument that economists make for decreasing the level of education of direct caregivers appears to contradict the findings of researchers who cited an increased cost when the level of education is decreased for health care workers providing patient care (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002). NMs must contend with these two opposing positions in making their decisions related to staffing.

Literature on quality and safety. Aspects NMs focused on when describing the work they undertook to staff their units were their commitment to quality and safety. A similar emphasis on quality and safety is found in the literature. In particular, hospital safety became a featured topic in Canadian health care management literature when, in 2006, the *Canadian Adverse Event Study* (Baker & Norton, 2006) reported 7.5% of hospital admissions included an "adverse event" (p. 326), and 36.9% of those events were considered preventable (p. 326). This landmark study linked quality of care with patient safety, making quality and safety priority issues for health care organizations in Canada (Denis et al., 2011). Following publication of this study, hospital boards in Canada began to be held accountable by governments for patient safety and quality of care, whereas

previously they were largely held accountable only for fiscal spending (Baker, Denis, Pomey, & Macintosh-Murray, 2010). Again, the move to hold hospital boards accountable for patient care outcomes aligns with NPM's requirement for clear assignment of responsibility, enforcing hands-on top-down public management and leading to erosion of self-management by professionals (Hood, 1995, p. 96).

In 2011, the Canadian Health Services Research Foundation surveyed leaders in health care from across the country on performance and quality improvement initiatives (PriceWaterhouseCoopers, 2011). The survey identified the barriers and facilitators to the quality improvement agenda—one being the lack of a common definition for the term "quality healthcare" (PriceWaterhouseCoopers, 2011, p. 7). The term quality, originating from Deming's notions of quality improvement from the manufacturing sector, has been taken up by health care organizations in various ways (Kurth, 2013). Programs, such as quality assurance and continuous quality improvement (Burkoski & Yoon, 2013), have been used by health care organizations to ensure that NMs regularly see data that focus their attention on the quality improvement agenda.

Quality improvement. The job descriptions I collected for this research outlined that NMs are held responsible for "quality improvement" on the units they manage. Wruck and Jensen (as cited in Burkoski & Yoon, 2013) defined quality improvement "as a scientific, non-hierarchical application of technologies that increase an organization's efficiency and quality" (p. 10). These technologies generate patient and family feedback through the use of satisfaction surveys, as well as systems that monitor key hospital indicators, such as infections, falls, and other reported incidents, such as medication errors. In addition, NMs are encouraged to use quality improvement strategies, such as

the "Plan-Do-Study-Act [PDSA] format" (Maxworthy, 2010, p. 32), to think about the process of making change. Health care organizations expect NMs to monitor and improve the delivery of health care on nursing units for which they are responsible. In my research, one of the serious tensions that arose was how NM informants identified their frustration at being expected to improve quality of patient care, while at the same time working to decrease the nursing expertise at the bedside in order to establish a different skill mix and to more effectively manage the costs of patient care.

Literature citing the importance of NMs' knowledge of economics. Since NMs replaced head nurses and became accountable for spending on their units, numerous publications have suggested that NMs must become better educated about economics (Douglas & Normand, 2005, Duffield & Franks, 2001; Harkins, Butz, & Taheri, 2006; Warburton, 2009). Increased knowledge about economics is expected to ensure that NMs are not marginalized when funding decisions are made (Douglas & Normand, 2005). The increasing complexity of the health care system, as well as a focus on economic accountability in NMs' work as a result of NPM, has authors in the US and Australia suggesting that NMs have a combined nursing and business degree (Duffield & Franks, 2001), or some formal management training (Harkins, Butz, & Taheri, 2006). In Canada, Warburton (2009) suggested that knowledge of economics and the costs of adverse events,[19] as well as use of economic costing data, could support NMs to advocate for improved staffing levels and safety measures. Warburton claimed, "Adding mindfulness

[19] Adverse events are defined as those events that result in preventable patient harm, such as patient ulcers, falls, or other injuries (Warburton, 2009).

of cost-effectiveness to improvement projects will help nurses and nurse managers choose the best projects and may help build a 'business case' for safety" (p. 228).

Another area of literature that focused on the economics of health care discussed how to make decisions based on the cost or benefit of a procedure, treatment, or care plan. In the United Kingdom, the National Health Service and the National Institute for Clinical Excellence were charged with producing evidence of cost-effectiveness of health care technologies (Douglas & Normand, 2005). Douglas and Normand (2005) discussed various methods of comparing and analyzing health care resource use, including cost minimization, cost benefit, cost utility, and cost effectiveness. They identified issues and concerns that arise when an economic framework is applied to health care. The authors specifically referenced the work of NMs, acknowledging the complex nature of applying an economic framework to the evaluation of nursing care, work that is often required by NMs when making decisions related to their budgets.

NMs in my research highlighted complex patient care situations that resulted in increased staffing costs. They understood that the economic framework applied to their budgets did not allow for extra staffing costs. NMs knew, as Douglas and Normand (2005) stated, most health economic evaluations take a very narrow view of health outcomes, focusing on one particular disease area or type of health care (e.g., comparing drugs to prevent myocardial infarction). Therefore, NMs' work to provide extra staff for patient care would not be seen by economists as an efficient use of resources.

Douglas and Normand (2005) identified the narrow definition of outcomes used to analyze cost effectiveness as a problem for economists who attempt to analyze and compare "appropriate" (p. 420) resource allocation. The authors recommended using an

evaluation tool that is based on "quality-adjusted life years" (Douglas & Normand, 2005, p. 421), a process meant to identify "whether the intervention improves the quality as well as quantity of patients' lives" (p. 421). Embedded in this talk of applying an economic framework to evaluate health care costs is an assumption that health care organizations need to justify *spending* of funds as appropriate to the aggregate *benefits* obtained.

Knowledge of costs compared to outcomes. In Canada, cost comparisons and outcomes are being made under the NPM. The CIHI collects health care data submitted by hospitals and health care organizations that allow for comparisons of specific patient health outcomes across provinces (CIHI, 2011). Nationally the CIHI is responsible for "providing accurate and timely information needed to establish sound health policies, manage the Canadian health system effectively, and create public awareness of factors affecting good health" (Alvarez & Zelmer, 1998, p. 14).

National standards for health data collection evolved in response to pressures to compare health data sets across Canada, thereby "providing information and tools to enable patients, clients, health service providers, administrators, policy makers and the public to make informed decisions about health and health services on the basis of appropriate, balanced and quality evidence" (Alvarez & Zelmer, 1998, p. 15). CIHI's Management Information System (MIS) standards have evolved into a common framework for the collection and analysis of data about health care facility costs and performance (Alvarez & Zelmer, 1998, p. 16). Currie (2011) indicated that standardized terminology within the informatics computer system allows for "more efficient reuse of data" (p. 20) and provides a "method by which organizations can be compared against

one another" (p. 20). "Measureable standards and measures of performance and success" (Hood, 1995, p. 96) that are aspects of NPM are at work in Canadian health care. The impact of the CIHI's efforts to quantify and compare health care information on NMs' work of staffing is addressed in Chapter 5.

Informatics. A major influence on NMs has been the rapid expansion and use of various computer technology programs in their day-to-day work. One NM informant identified seven programs that she used in her staffing work. One of these programs is the employee-scheduling program (ESP). This is a computer program that works to coordinate hospital unit staffing schedules. A second computer program is the recruitment management system (RMS), which intersects with the human resources (HR) department and is used by AHS NMs to hire staff members. A third computer program that intersects with these various programs, and that was introduced earlier in this literature review, is the WMS. The WMS collects and collates data about patients, the care provided to them, and the productivity of nurses as care providers.

Computer technology used to produce authorized knowledge. Informatics literature in health care, including marketing documents and promotional materials, highlight how computerized systems increase access to information, expand comparability of data across health care sites, improve quality management outcomes, and increase organizational effectiveness and efficiency (Health Canada, 2015; QuadraMed, 2009). For example, in Canada, policymakers and health care funders have a strong regulatory interest in the potential for data generated through informatics to be used to standardize and compare use of health care resources in order to identify potential efficiencies and areas for improved quality and cost reduction.

Dunleavy, Margetts, Bastow, and Tinkler (2006) provided a critique of NPM; they highlighted the fact that use of NPM is decreasing in countries due to "adverse indirect effects on citizens' capacities for solving social problems because NPM has radically increased institutional and policy complexity" (p. 467). Dunleavy et al. noted a new age in management has arrived, namely the age of digital-era governance. The authors cited a hope that digital-era governance will involve "reintegrating functions into the government sphere, adopting holistic and needs-oriented structures, and progressing digitalization of administrative processes" (Dunleavy et al., 2006, p. 467). Informants' talk of multiple managerial technologies led me to discover how digital-era governance organizes NMs' staffing work.

Nurses' use of technology. One topic that circulates in nursing literature is the need for nurses to embrace the use of technology as a tool for their practice, in order to improve "use of … time and the safe delivery of patient care" (Sensmeier, 2008, p. 4). One response to this need has been the emergence of informatics as a nursing specialty in the last 20 years. Cavan Frisch and Borycki (2013) identified nursing informatics as a subfield of health informatics that "provides nurses with tools for data capture, storage, and retrieval for the purpose of delivering and evaluating nursing care" (p. 9).

Nurses who specialize in informatics are purported to bring "the nursing perspective to the implementation and integration of clinical applications into nursing workflow and patient care" (Kirchner, 2014, p. 22). Increasingly, hospitals are using electronic patient records in place of paper records that document patient-related information, requiring nurses to increase their ability to navigate multiple computer programs to access and record information. The computers that nurses use to record

clinical information are increasingly being integrated with the capacity to extrapolate clinical observations entered by nurses into aggregate data sets that can be used to make health services decisions (J. Rankin, unpublished paper, personal communication, Aug 30, 2015).

However, according to Cavan Frisch and Borycki (2013), these electronic records (meant to collect information on nurses work with patients) are *not* using databases (such as the International Classification of Nursing Practice) that are specifically developed to reference nurses' work. Using the dominant understanding, that better data leads to better administrative decisions, Cavan Frisch and Borycki argued, "Important elements of [nursing] practice are not being recorded and the data required to build knowledge and enhance quality of care are unavailable" (p. 13). The authors identified that elements of nursing practice are not included in electronic databases and emphasized the incompleteness of collected data (Cavan Frisch & Borycki, 2013). Informants of my research supported Frisch and Borycki's assumption that, with improvements, the WMS could be used as a tool to support better patient care. However, the critical researchers whose work I review at the end of this chapter countered these assertions.

Workload management systems. Embedded in the informatics literature and more broadly in nursing economics is the interest in WMSs, such as the one that is central to the work of NMs in my study. Canada's extensive informatics investments have advanced the use of WMSs by health care organizations, bringing with them the ability to incorporate digital-era government into nurses' and NMs' work. The CIHI defined a WMS as "a tool for measuring the volume of activity provided by a specific functional centre in standardized units of time" (CIHI, 2015d, para. 13).

> WMS tools provide a system for collecting the specifics of each patient's care needs and the standard times required to complete the care in relation to the available staff time. Data generated by WMSs provide managers and clinicians with information to support decision-making. (Hadley, Graham, & Flannery, 2004, p. 3)

The CIHI collects information retrieved in WMSs from health care organizations across Canada and uses the data to measure and compare health care organizations productivity, efficiency, and effectiveness. The data collected by the CIHI are expected to inform knowledge about accessibility (to health care), appropriateness (of care provided), and effectiveness (of the outcomes of care to improve health), with a focus on comparability (across health care sectors of costs of care provision; CIHI, 2013a). Health care organizations have become increasingly dependent on WMS data to produce knowledge for managers, administrators, provincial governments, and the CIHI (2015c).

NMs are expected to use WMS knowledge to make decisions related to planning and budgeting for staffing (Hadley et al., 2004). However, McGillis Hall et al.'s (2006) found in their pan-Canadian survey that if a WMS indicates a "need for more staff, rarely will this result in extra staff support being provided to the unit" (p. 264). McGillis Hall et al.'s finding revealed that while the CIHI identified the WMS as important for planning related to staffing, it is seldom used to increase staffing levels. However, how the WMS is used to hold NMs accountable for health care costs and organizes their knowledge of staffing needs is explicated in my IE research project.

Critical Literature

Most critiques of various business, economic, and manufacturing strategies extended to health care are formulated within the same terms and interests as the dominant literature. For example, Hadley et al. (2004) found the various WMSs being used across Canada were not inclusive of much of nurses' work, and in their study made recommendations for improvements to the systems. Similarly, as detailed in the previous section of this review, Cavan Frisch and Borycki (2013) advocated if more nursing-specific capacities are built into health information systems, then better decisions about nursing resources will be made. These authors did not entertain the possibility that no matter how much a system is improved, reducing nurses' work to standardized accounting formats limits what can be known of the work actually required of nurses (Cavan Frisch & Borycki, 2013).

However, rare critical papers do question the dominant literature on nursing management (Campbell, 1984; Ceci, 2006; MacKinnon, 2012; Purkis et al., 2008). These works are generally published in journals such as *Nursing Inquiry* and *Forum,* in which philosophical and analytical critiques seem to be clustered. Much of the critical research relies on Foucauldian[20] discourse analysis (Ceci, 2006; Purkis et al., 2008; Mannion et al., 2005; Rudge, 2011). There is also a relatively new, but nonetheless robust,

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[20] Michel Foucault was one of the founders of discourse analysis. Campbell and Gregor (2008) noted, "According to Foucault, power represents a strategic situation in a given society and power relations in society have a specific purpose to maintain social hierarchy through the day-to-day activities of individuals in the society (Foucault, 1976). However, power and knowledge are intertwined. Power limits what is acceptable to be known, and knowledge develops in response to and sometimes in resistance to the limits set by the power relations" (p. 25).

contribution of IE to the critical literature and many of the researchers using IE are cited in the sections that follow.

Critique of the efficiency discourse in health care. In her doctoral research, Campbell (1984) used IE to trace the evolution of WMSs in health care management from their beginnings in the 1970s up until the early 1980s. Over 20 years later, Campbell (2006) illustrated how, within the Canadian hospital system, "market relations are being established and are becoming the legitimate basis of care giving decisions" (p. 107). Rankin and Campbell (2006) further noted how an NM in their study was organized to subdue "the nurse in me coming out" (p. 17) when faced with belt-tightening measures and new strategies to streamline patient care. These studies are highlighted here as they have identified the impact of NPM on NMs' work, effectively limiting cost of care.

MacKinnon (2012) used IE to study what she characterized as the "safeguarding work" (p. 1) of rural nurses. She discovered that nurses' concerns were not addressed in management literature that focused on efficiency and cost savings, nor were they addressed in recommendations made that coordinate how "patient safety" (MacKinnon, 2012, p. 9) is most often assessed and discussed. Also using IE, Rankin (2009) explicated what happens when nurses' work is "harnessed" (p. 275) to the interest of health care efficiencies. Rankin discovered that nurses "are engaged in promoting the healthcare efficiency project and have taken up its ideas as a professional value of their own" (p. 280). She identified that in spite of nurses' concerns about "frequently working understaffed and over census" (Rankin, 2009, p. 279), they had been so drawn into the

efficiency discourse that they would not entertain an option that did not involve improving their own efficiency.

Mannion et al. (2005) explored how "ideas developed in one sphere (health economics) … [could] become influential in another (nursing management and practice)" (p. 377). They cautioned against picking up ideas, driven by the government and individuals within the nursing profession, related to enhancing the science base of health care and promoting cost-effective health care interventions (Mannion, et al., 2005, p. 377). Mannion et al. asserted that these types of ideas valorize interests in the "economics of nursing" (p. 377) as efficiency and "value for money" (p. 377), which then become preconditions for a formulation of "high quality nursing service" (p. 377) that subsume other nursing values, such as provision of care.

Purkis et al. (2008) used an ethnographic approach to conduct a study of home care case managers in Canada and Iceland. They demonstrated that policy, focused on increasing efficiency in the health care system, resulted in undermining the flexibility for nurses providing home care services and limited possibilities for nurses to respect the unique needs of older adults (Purkis et al., 2008, p. S27). Ceci (2006), once again applying an IE approach, analyzed the effects of the use of economic principles in home care case management, demonstrating that economic principles dominate other ways that nurses understand their practice (p. 66). These various critical voices all spoke against the focus on economic efficiency in health care that result in negative consequences—a focus that is aligned with the principles of NPM.

Critique of power relations that obfuscate concerns. Rudge (2011) is a critical nurse philosopher who used Slavoj Zizek's[21] ideas about violence to argue that processes implemented in the management of health care systems perpetrate violence and coercion on its clients and workers (p. 167). Rudge stated that the work of management is taking increasingly more time and effort. She found that the perpetuation of the idea that order must be ensured to prevent chaos from occurring is fuelling the health care system, taking the focus away from the very power relations that perpetuate those chaotic negative effects (Rudge, 2011, p. 167). She used nurses' work in the ER and the computer system that monitors and organizes their work of admitting patients and moving them through the system to explore the perpetuation of violence. Rudge noted,

> While such a computerized system is introduced to manage "timeliness" in a system, its effects are restrictive on "professional" practice, visit high levels of surveillance at individual and unit level through its collected statistics, and intensification of work beyond the limits many nurses are competent to obtain safely, quality or even "humane" care. (p. 171)

Rudge's critique provided an analysis of discourses of efficiency, productivity, and effectiveness as exemplifying power relations that perpetuate violence in the health care system.

Critical voices that challenge how health care organizations are managed are rare. However, as will be shown in the following chapters, my research contributes to this critical analysis by showing how supporting economic knowledge of health care

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[21] Slavoj Zizek is a Marxist philosopher and cultural critic.

management as the authorized knowledge of the organization creates tensions for NMs. Moreover, my research points to how the tensions that NMs encounter result in serious problems for nurses and patients. The production of safe, high-quality, well-organized patient care that managerial discourses promise, and the possibilities of relational, transformational leadership competencies that NMs are persuaded will support their work, contrast sharply with what I discovered.

Conclusion

In this chapter I have provided an overview of the literature related to nursing management, highlighting the focus on leadership, quality and safety, process improvements, and informatics and economics, as these issues were prominent in various implicit and explicit ways in informants' talk. In most of the NM literature I reviewed, NMs are constructed as responsible for ensuring hospitals have enough nurses to provide patient care. They are also identified as being responsible to see that budgets are managed efficiently, nurses are effective in providing quality patient care, and lean methodologies are used to increase nurse productivity and efficiency. As portrayed in the literature, NMs work in a complex system in which technological innovations, such as the WMS, are to be used by NMs to "make better decisions." The literature also placed NMs in the role of leader on hospital units, situating them at the cusp of quality hospital services, responsible for retaining and recruiting nurses.

The sources reviewed, other than the critical literature, situated NMs as having significant ability to enhance nurses' work environments. In using IE as the method for this research study, I worked to disrupt these and other dominant discourses. I did so by beginning my study with ethnographic descriptions of the everyday/night work in which

NMs engage. This has not previously been done. In the following chapter, I explain IE, my method of research, and how I incorporate this literature review into my IE research. Beginning with D. E. Smith's (1987, 1990, 1999, 2005) development of IE as a method of inquiry, I show how the ontology and epistemology of IE provided ways for me to explore NMs' work of staffing.

Chapter 3: Method of Inquiry – Institutional Ethnography

IE is a method of inquiry, developed by Dorothy Smith, used to discover how the work people do is socially organized (Smith, 1987, 1990, 1999, 2005). In this chapter I provide a brief overview of IE that focuses on its ontological and epistemological underpinnings.[22] I introduce IE terms and conventions and describe how they are relevant to the study being reported here. I then describe how I conducted my research using IE.

Development of IE

Dorothy Smith's (1990; see also Campbell, 2003; Walby, 2005) critique of theoretical sociological approaches was triggered by her early experiences in academia, as she was the only woman teaching in the University of California Berkeley Sociology department, while at the same time parenting two young sons by herself. Contrasting her experiences at home, where she was absorbed in the unpredictable features of childcare and homemaking, with the orderly categories and conceptual work of her scholarship (Smith, 1987), Dorothy Smith discovered what she called her "bifurcated consciousness" (Smith, 1990, p. 18). She identified the bifurcation happening when she moved from one way of knowing (i.e., her work at home), where she was "located in the body and in the space it occupies and moves in" (p. 17), to another way of knowing, where she could distance herself from the material world and focus on categorizing knowledge using concepts and abstract ideologies. Dorothy Smith's (1990) identification of two separate ways of knowing is foundational to her critique of mainstream sociology, as well, it establishes IE's core epistemological interest in examining the social organization of

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[22] In her developed of IE, D. E. Smith acknowledged the influences of various philosophers and theorists (Marx; Foucault; Mead; Bahktin; Volosinov; Garfinkel, as cited in Smith, 2006, p. 16).

knowledge and IE's ontology that maintains an empirical description of material goings on.

Epistemology: Two modes of knowing. The epistemology of IE directs the researcher to develop knowledge about the world from an "empirically observable rather than a theoretically determined place" (Bisaillon & Rankin, 2013, para. 12). Institutional ethnographers examine how the two distinct modes of knowledge D. E. Smith (1990) participated in (the subjective knowledge she used in her mothering work and the conceptual and abstract practices she encountered in her academic life) are active in institutional[23] settings. They also explore how this characteristic social organization of contemporary knowledge works to achieve what D. E. (1990) Smith termed "ruling" (p. 4) practices.[24]

In my research, what I observed NMs doing, and what they told me about how they do their work, directed me to focus on how knowledge of NMs' staffing work is constructed. First, I focused on NM informants, to learn from each of them the knowledge they have that is "located in the body and in the space it occupies and moves in" (Smith, 1990, p. 17). I focussed on how that knowledge works, in particular, paying attention to when and how NMs transform their knowledge into "knowledgeable" abstractions that move beyond the local and particular into institutional systems used to support staffing work.

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[23] "Institutions [in IE] are not viewed as singular forms of social organization, but rather as functional complexes such as education, health care, and law, in which several forms of organization are interwoven" (Grahame, 1998, p. 352)

[24] "Certain forms of knowing are the basis for ruling - in management, governing, the professions and so on. Text mediated ruling practices, Smith argued, subordinate local knowing, imposing ruling perspectives" (Campbell, 2006, p. 16)

Ontology. D. E. Smith (2005) described how mainstream sociology focuses on developing concepts that objectify individuals, in essence removing them from the actual occurrence of their work. D. E. (1990) Smith also critiqued mainstream sociology's characteristic use of research approaches that invoke concepts a priori, before the researcher enters the setting, and how these concepts produce an "ideological circle" (p. 44; see Appendix A)[25] that fits research findings into a preconceived framework. For example, in many qualitative and quantitative methods a nurse might come to her research on NMs with a question about how NMs enact transformational leadership. The idea of transformational leadership is determined at the outset to be the lens through which the nurse will look. She will look specifically for what she has already identified as transformational leadership qualities, preventing her from seeing NMs' work that does not conform with her preconceived ideas of transformational leadership and, more importantly, *overlooking a great deal of what is actually happening*.

D. E. Smith identified that this accepted way of theorizing the world suppresses the actual work of individuals—what is actually happening. It inserts a conceptual view that, abstracted from its material appearance, distorts what can be known. In so doing, "ideological accounts" (Campbell, 2001, p. 243) and ideological practices are produced. Most often, these accounts serve the purposes of people in positions of power and

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[25] An ideological circle is explained by Dorothy Smith (1993) as "an interpretive schema … used to assemble and provide coherence for an array of particulars as an account of what actually happened; the particulars, thus selected and assembled, will intend and will be interpretable by, the schema used to assemble them" (p. 139). See Appendix A for D. E. Smith's visual schemata of how an ideological circle functions.

authority, covering over tensions and problems that people on the ground may know about and experience.

D. E. Smith discovered a way for researchers to explicate *how* the social comes to be, *how* it is coordinated, and *how* people are active in that coordination, by staying grounded, from start to finish, in ethnographic descriptions of the location where people are doing their work (Campbell, 2006). IE's epistemological stance, to discover the social organization of knowledge, insists that what a person can know and describe about a social location in the world (e.g., the social location of NMs within the socially organized hospital) is determined by their "standpoint" in the world (Smith, 2006, p. 10).

Standpoint. D. E. Smith (2006) stated, "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" (p. 10). Standpoint is a starting place in the physical world, and it is *this* ontological position (in the materiality of people's activities) that is the key to discovering how the work of people is socially organized. Thus, standpoint refers to my beginning my research in the physical location of NMs' working world, where NMs' subjective experiences provide the starting point for my explication of the social organization of NMs' staffing work (Smith, 1990). By taking the standpoint of NMs, I heard and observed how they did their work, learned from them what the tensions they experienced were, discovered where their material knowledge of staffing came into conflict with concepts and discourses from other locations (which D. E. Smith called the extralocal), and when they put aside their material knowledge of staffing needs (Smith, 1987) to produce ideological accounts of their work.

Explicate as opposed to explain. The purpose of IE is to "explicate" (Smith, 1990, p. 27), or to make visible, how the everyday/night world is socially organized. The term, explicate, fits with the core ontology of IE, which never strays from the materiality of people's activities, especially the activities that involve texts. In writing this dissertation, I am not trying to theorize, or explain, why NMs have problems with their work of staffing. Rather, I stay focused on what NMs are doing, and I empirically show how NMs' work of staffing is socially organized—I explicate.

IE's Terms and Conventions

To provide an exemplar of how I worked with data using IE's terms and conventions I use the following description of my own work as an NM.

Filling the lines. I had been the manager of the emergency department (ER) in a tertiary care centre for approximately one week when the centre's financial administrator, an accountant, came to me with a spreadsheet that outlined the ER's expenditures for the last three months. He showed me the column that indicated the department was significantly over budget, and stated it was due to RNs working overtime.[26] The accountant indicated to me that as the NM it was my responsibility to get the budget back on track by decreasing the amount spent on staffing as well as finding the money to cover

[26] "Overtime [for full-time RNs] is all time authorized by the Employer and worked by the Employee in excess of the regular daily hours … or on scheduled days of rest" (United Nurses of Alberta, 2010, p. 91). "A Casual Employee shall be entitled to overtime worked in excess of 147.25 hours averaged over a four week period" (United Nurses of Alberta, 2010, p. 69). "Where a Part-time Employee volunteers or agrees, when requested, to work additional Shifts which are not designated as her or his scheduled days of rest, or to work beyond the Employee's regularly scheduled daily hours or pre-agreed length of Shift, the Employee shall be paid her or his Basic Rate of Pay for such hours or, if applicable, 2X the applicable basic hourly rate for those hours worked in excess of the regular daily hours" (United Nurses of Alberta, 2010, p. 95). "The overtime rate of 2X the applicable Basic Rate of Pay shall be paid for overtime worked" (United Nurses of Alberta, 2010, p. 13).

the over spending. When he came to my office I was in the midst of reviewing two applications for five RN vacancies in the ER. The vacancies contributed to the overtime costs incurred. The terms under which nurses are paid overtime are outlined in the nurses' union contract. Apparently, my predecessor relied on overtime to adequately staff the unit. Likely, this was related to the vacant positions for which I was reviewing applications. It was up to me to fill the lines, in other words, I needed to find and hire nurses to fill the vacant positions.

Institutional discourses. I use the term institutional discourses to refer to "any widely shared professional, managerial, scientific, or authoritative way of knowing (measuring, naming, describing) states of affairs that render them actionable within institutional relations of purpose and accountability" (McCoy, 2006, p. 118). Institutional discourses provide the frame of reference, or terms, that individuals use to move easily through the social worlds they occupy within institutions. In my research, I paid attention to NMs', nurses', and other informants' talk and use of texts, as these provided evidence of the institutional discourses used within the social organization of NMs staffing work. When I spoke with the financial administrator, we could easily talk about budgets and overages, as these aspects of nursing economics were common institutional discourses.

Ruling relations. D. E. Smith's (1987, 1999, 2005) aim in developing an alternate sociology was to make visible ruling relations beyond the direct experience of the individual. D. E. Smith (1990) identified ruling relations as "that total complex of activities … by which our kind of society is ruled, managed, and administered" (p. 14). She included management, professions, and government, as well as "the activities of those who are selecting, training, and indoctrinating those who will be its governors"

(Smith, 1990, p. 14). In my example of filling the lines, the ruling relations included the accountant's activation of the text, in the form of a financial spreadsheet, which indicated the ER was over budget. To hold me accountable for the money spent, the financial administrator activated the budget, another text. How the budget was developed, or by whom, was unknown to me. What the actual circumstances were that resulted in going over budget were also unknown to me. A complex of ruling relations textually mediated through the spreadsheet, budget, and union contract were organizing my work, but were beyond my local control (Smith, 2005, p. 10).

Social relations and generalizing social relations. IE ontology is based on the premise that the social world exists in the practices of people, and as such, can be empirically observed (Smith, 2005, p. 161). Campbell and Gregor (2008) noted, "The social [in IE occurs] … in people's activities and through the ongoing and purposeful concerting and coordinating of those activities" (p. 27). Social relations comprise activities both in a particular setting and that extend across multiple settings (Campbell & Gregor, 2008, p. 30). Social relations that are generalizing extend across social settings to organize similar practices across time and geography (Smith, 1987). My work of filling the lines involved activating social relations within the hospital, following the generalizing hiring practices textually coordinated within the health care region where the hospital I worked in was located. Other NMs, subject to the same hiring practices, would be organized in the same way, making similar decisions about overtime and being similarly aware of their accountability to the budget.

Social relations differ from ruling relations in that social relations are the physical connections that link and coordinate activities and work processes across sites (Grahame,

1998). In my work, social relations between the accountant and me were evident as we talked about the budget. The policies requiring that we have a budget, was a ruling relation, an objectified form of consciousness and organization that came from another location, external to our local setting (Smith, 2005). In other words, ruling relations insert interests from outside the local setting, whereas social relations are more benign features of the social organization that are manifested in people's activities.

Texts. Texts activate a ruling relation in so far as texts are duplicated across time and space, appearing in the same form in many locations (Bisaillon & Rankin, 2013, para. 30). Texts standardize the work of the institution, as individuals activate the texts in similar ways in different places and at different times (Smith, 2001, p. 176). The financial administrator and I activated the budget spreadsheet, a text developed as a result of policies (ruling relations) that required budgets to be produced and followed. His boss, the chief executive officer, located in the regional office in another area of the city, unbeknownst to me at the time, had access to the same spreadsheet, which he too reviewed and activated by holding accountable both the financial administrator, my boss, and me for the overspending the spreadsheet established.

Thus, the same text coordinated the social organization of work across various settings. My activation of the text could be my decision to refuse to grant any further overtime, requiring the emergency nurses to work short. However, another text, the union contract, would then be activated by the front-line nurses, who would initiate a

professional responsibility concern report form (PRC)[27] to document that there were not enough nurses working in the ER to provide safe care for patients. In IE, researchers pay attention to how texts are activated in the everyday/night work of those with whom they begin their research, in order to find out how work is hooked into the extralocal ruling relations.

Work. I use D. E. Smith's (1987) generous understanding of work as including "what people do that requires some effort, that they mean to do, and that involves some acquired competence" (p. 165). There are at least two aspects to knowledge that a person has of their work: "One is a person's experience of and in their own work, what they do, how they do it, including what they think and feel; a second is the implicit or explicit coordination of his or her work with the work of others" (Smith, 2005, p. 151).

My work of hiring a new nurse involved knowledge of how to fill out forms, select applicants to interview, interview them, and then complete more paperwork related to informing people in various departments (i.e., HR, payroll, scheduling, etc.) of the new hire. It also involved me knowing that I needed to go to the computer, pull up the emailed list of applicants, press the print button, walk over to the printer to get the printed list (only to find the printer out of ink, then finding and replacing the cartridge, and hit the on button), pick up the list and go back to my office. My work of hiring also involved knowledge of what skills were preferred in an applicant, being able to thus compare one applicant to another, and making decisions, based on that knowledge, of how to mentor

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[27] A PRC is completed when an RN believes that something has occurred on a shift that prevented her from providing needed patient care, endangered a patient or staff person's life, caused injury in some way, or generally prevented the provision of what she deems is safe nursing care (United Nurses of Alberta, 2013).

and support the applicant eventually hired. My knowledge of how I did my work was not relayed to others, such as the HR department staff members, who saw only that I had appropriately filled out the forms. I used knowledge gained through formal authorized channels, as well as informal knowledge acquired in the course of my everyday/night interactions with others, to do my work.

Disjuncture. A disjuncture may occur when an individual's knowledge is "out of step" (Smith, 2006, p. 10), when their knowledge of their experience does not match how institutional discourses represent those experiences. In my example, and despite what was indicated on the spreadsheet, being over budget did not indicate there were too many nurses, or that the previous manager had been reckless in doing her staffing work. In fact, to me it was evident from my observations of the nurses and discussions with them that not enough nurses were available to do the work required to provide care for patients. Herein lies a disjuncture (and possibly, to an IE researcher, a problematic), where the authorized modes of knowing (the budget) overruled my material knowledge. A disjuncture is a personal experience, as Campbell and Gregor (2008) stated, a "moment of recognition that something chafes" (p. 48).

The research problematic. A problematic refers to the IE researcher's focus on discovering practices of people (who may not be active in the local setting) that lay behind the disjunctures that informants experience (Smith, 1987). The problematic is used to direct the investigation (Smith, 2005). A problematic "locate[s] the discursive organization of a field of investigation that is larger than a specific question or problem" (Smith, 2005, p. 38). The problem arises in "the manner in which the social world is organized" (Smith, 1981, p. 23). D. E. Smith (1981) stated a problematic "organizes

inquiry into the social relations lying in back of the everyday worlds in which people's experience is embedded" (p. 23).

The disjuncture I experienced related to the ER budget could be used as an entry point for research. The analytic goal would be to trace how budgets (among other ideas and ideologies) become the organizing texts that coordinated my work of staffing. The budget can be linked up into the legal and policy framework for the institution of Canadian health care and to a powerful Canadian discourse about health care spending. Concern about the sustainability of the Canadian health care system, in turn, is linked to the neoliberal agenda and the accompanying institutional discourse of efficiency.[28] A problematic arising from my experience would direct me to ask several questions. How is the budget developed? How is the ER budget planned? Where does the money come from? What ideas circulate about ER budgets (in the health management literature)? Who works on the budgets? Who is accountable and who are they accountable to? Broadly, my quest would be to explicate and describe *how* the ruling relations of the budget entered into my work, my relationships with the staff and my bosses, and how my impressions of the department were being organized by the budget.

Mapping the extralocal. A final IE term, "mapping the extralocal" (Smith, 2005, p. 29), is a process whereby the researcher links "the relations that connect one local site to others" (p. 29), tracing the connections in the texts, talk, and activities that coordinate the work of people from whose standpoint the researcher begins. The materiality of texts provides a means to create the map. In my research I followed the texts, first interviewing

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[28] The discourse of efficiency is taken up in Chapter 6 and expanded on throughout the following chapters.

NMs about how they use texts identified in their talk, and next identifying where the texts originated and where they go once NMs have done their work with them. This directed me to interview those whom NMs received texts from as well as other users of the texts. My work of mapping the extralocal produced an account of how the work of NMs working in hospitals is socially organized—how issues and problems are orchestrated within ruling relations.

Application of Literature in Study Design

When I entered the research field, I brought a robust knowledge of the managerial literature that circulates in health care. In my study, I used this knowledge as data, determining what the literature directs in the staffing work of NMs and how that staffing work, so constructed, is taken up by NMs. My focus during fieldwork was to examine whether and how textually organized sets of directions arise in the thinking and activities of NMs I interviewed and observed.

An institutional ethnographer has an abiding interest in how problems in the everyday/night world are known about by people who have the authority to make organizational decisions. Griffith (2006) directed institutional ethnographers to use a critical lens when reviewing the literature. In her research into single-parent families, Griffith used published and grey literature as *data* (p. 137). She did this by critically examining the literature to discover how it constructs single mothers. She found that research studies about single-parent families were consistently positioned as "deviant" (Griffith, 2006, p. 137) to the "normal" (p. 137) family. IE contrasts knowledge, obtained from observations and interviews with the standpoint informants, with methods (such as

the formal and grey literature on NMs) that organize what is happening into abstract categories or groups.

In the process of explicating my findings, I did not read the literature as a set of facts or a body of knowledge on which to build (Campbell & Gregor, 2008, p. 11). Instead, I reflexively sought to discover traces of the discourse (the published and grey literature) in informants' activities and talk, collecting detailed accounts of informants' staffing work and examining the texts used to do that work. My own thinking and experience is embedded in the research—useful knowledge that supported my line of questioning. As I examined the data collected, I discovered how the work of my informants is organized in ways that connect them up to other locations within the institution of health care, as well as to people in those locations. I found the material data I collected showed ruling relations occurring in the everyday/night work of NMs (Campbell & Gregor, 2008, p. 69).

As an IE researcher, my work was to "challenge authoritative ways of knowing, as represented in ideas noted in literature that identify themes, concepts, and theories" (Smith, 1987, p. 17). In conducting my research, I did not build on the dominant body of literature. Rather, I used what was promulgated in the literature to examine the everyday/night activities involved in NMs' staffing work, and I explored the tensions arising from "being told one thing, but in fact knowing otherwise on the basis of personal experience" (Smith, 1995, p. 21). In my analysis, I noticed when NMs' language echoed discourses identified in literature and located in texts used in NMs' everyday/night staffing work. I then explored the influence of the activation of these discourses on NMs staffing work.

Research Study

Approval to conduct this study was received from the Conjoint Human Research Ethics Board in July 2013. Interviews commenced in August of 2013. Hospital A was chosen for the study, as several managers working there had, having heard about the study from a colleague of mine, expressed interest in participating. Recruitment was supported by the hospital vice president (VP), who sent an email to NMs informing them of the study and inviting them to contact me if they were interested in participating. The original email included a letter about the study (Appendix B). When contacted by an informant, I informed them about the structure of the interview and follow-up observation, as well as what benefits or risks might occur to them as a participant (Collaborative Institutional Training Initiative, 2013). The risks of participating were minimal; however, due to the small number of NMs working within Hospital A, complete anonymity could not be assured.

"There is no 'one-way' to conduct an IE investigation.… The researcher knows what she wants to explain, but only step by step does she know who she needs to interview, or what texts and discourses she needs to examine" (Smith, 2006, p. 20). Following initial interviews and observations with standpoint informants,[29] I worked with my data, identified various disjunctures, and generated more questions that needed answering. For example, when NM Marg indicated she used an electronic workforce management system, but could not tell me how the electronic system was developed or used by others, I looked to find someone extralocally who could provide me with more

[29] Standpoint informants included NMs, from whose standpoint I began my research, as well as nurses and scheduling clerks working in the same location.

information about the system. In total, standpoint informants I interviewed included three NMs, two CNs, and one SC working on patient care units.

I recruited extralocal informants through email contacts with AHS executive members, personal contacts from my work in health care, and through discussion with colleagues. Extralocal informants included the VP of Hospital A, a data analyst, a business representative, a project coordinator, a nurse educator, and an NM in Ontario. Some of these extralocal interviews were conducted over the phone, after emailing the research project information to the individual and receiving consent to participate.

Interview process using IE. At the beginning of all interviews, I provided opportunity for informants to ask questions about my study or their participation in it. I obtained voluntary consent from each informant prior to beginning an interview or observation (Appendix C). I also explained to informants that they could withdraw from the study at any time. Bisaillon and Rankin (2013) provided an IE interview table that guided and explained to informants the focus of interviews (Appendix D). The table was shared with informants at the beginning of an interview to assist them to understand that my focus was their work and how it was coordinated. In reference to the table, I identified my interest in the texts that informants used in the process of their work. I also explained how I would use the texts as data to discover the links between NMs' staffing work and the broader organizational processes.

I began interviews with open-ended questions as is recommended in IE (DeVault & McCoy, 2006, p. 23). The interviews lasted from 1–2 hours and were loosely structured, relatively informal conversations (Bisaillon & Rankin, 2013, para. 23). I asked for clarification for each of the work processes as they unfolded in NMs' talk. Some of

the work processes NMs referred to include the difficult process of hiring nurses and the process of adequately staffing the unit. Open-ended questions I asked led to NMs' talk about the disjunctures they experienced in their work of staffing. It was these disjunctures that set the direction for my inquiry (Smith, 2005; see also Campbell, 2006), which led me to discover my problematic.

Observational fieldwork. I met with my first NM informant (Joan[30]) to observe her doing her work and explained I might ask questions about what she was doing during the observation. To explain my presence and the purpose of my research I provided a handout to staff members Joan talked to as she went about her work (Appendix E). We agreed that I would be observing her at work for 2–4 hours and that I would write notes and could audio record any conversation we had. I followed a similar process with each NM I observed. Observations involved not only watching and recording what standpoint (local) informants did, but also involved asking questions to obtain clarification about what I observed. The answers I received informed my discovery of how they knew to do their work. I observed and interviewed standpoint informants, while limiting extralocal informants to interviews only due to issues of time and availability.

During my time spent with Joan, I paid attention to and wrote down in field notes what she was actually doing, her work processes. Although I had planned to keep quiet and take detailed notes describing Joan's physical work, I quickly realized that due to the multiple texts she used I needed her to talk through what she was doing with each of the texts. Much of NMs' work is related to thinking about and enacting complex

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[30] Informant names used in this dissertation are pseudonyms.

organizational processes. In another NM observation, I was present when she met with various members of the health care team, giving me further insight into how talk and texts were taken up to coordinate NMs' work of staffing.

During my initial observation with Joan, I was introduced to another NM (Marg), a SC (Jodi), and two CNs. After completing my observation I followed up with the people to whom I had been introduced, to see if they would be willing to participate in my research. They all agreed to be interviewed and observed. IE research "involves the researcher's investigating institutional work processes by following a chain of action, typically organized around and through a set of documents, because it is texts that coordinate people's activity across time and place within institutional relations" (DeVault & McCoy, 2006, p. 21). Each encounter provided new stories and information about how staffing work was accomplished. The questions identified from these initial interviews, observations, and acquisition of texts led to other informants. Eventually, the questions I needed answered about the social organization of NM work led me to people in executive positions. I learned from anyone who could inform my knowledge of how the various discourses that I discovered in standpoint interviews came to be part of NMs' knowledge of their staffing work. Informants expanded beyond Hospital A and involved people in other areas of Alberta and Canada.

Selection of texts. NM Joan made reference to numerous texts and electronic programs in her description of her work of staffing and the problems she had in accomplishing that work. She used texts to guide her decision-making. These texts included electronic job descriptions, emails, paper memos, and numerous electronic programs. Some of these electronic programs included the ESP and the RMS. Other texts

she talked about working with included people's resumes, electronic job postings, standards of practice, workplace health and safety texts, patient comment cards, staff notes, PRCs, resignation forms, requests for sick leave, and union contracts. Examples of texts collected from informants during my fieldwork include policies, schedules, forms, contracts, job descriptions, legislation, memos, management training documents, regulations, and instructions.

Data management. I audio recorded all interviews and handwrote field notes during observations and interviews. I then transcribed the audio recordings and field notes, using pseudonyms in place of informants' names, and stored them in a file on a password-protected computer. I kept duplicate copies of data on a memory stick and a second computer, in the event that information was lost on one computer, or I lost my memory stick. Access to interview transcripts was limited to me, while data analysis and writing was initially shared only with my supervisor. As my analysis developed I shared my writing with my supervisory committee and colleagues to obtain feedback as to the clarity of my writing and thinking. DeVault and McCoy (2006) stated that in IE the analytic work of the researcher "is done through writing, thinking, and discussion with collaborators and colleagues" (p. 39).

Process of data analysis. D. E. Smith (personal communication, February 12, 2013) recommended using *indexing* as a way to group data collected instead of *categorizing* data. Indexing refers to not putting pieces of data together into themes, but instead creating files of similar talk or observations that link data *empirically*. Following D. E. Smith's recommendation, I reviewed transcripts frequently, becoming aware of informants' talk of budgets, rotations, schedules, finding savings, effectiveness,

productivity, and efficiency. Informants' language use led me to explore various texts that informants referenced as directing them to act in specific ways (Turner, 2006, p. 151). I took informants' talk and the texts they provided and wrote up chunks of analysis, which focused on showing how NMs' work was socially organized. I then organized these chunks of analysis into computer files, ensuring I linked the texts (which show the ruling relations) to informants' talk (Smith, 2005, p. 23).

As I wrote up my analytic chunks, one topic quickly stood out for me, as it was the focus of much of NMs' talk. This topic was the NMs' work of staffing. Subsequently, I reviewed the data from my files and developed sections of writing, focusing on NMs' work of staffing. When, in the course of my analysis, I bumped up against a question or an area that needed further clarity about an aspect of NMs' staffing work, I returned to data transcripts or turned to extralocal informants for further answers.

Research challenges. Throughout the process of writing up my analysis I talked with my supervisor, Janet Rankin, about what I was discovering. She provided thoughtful feedback, asking me to write what I had found without using the conceptual language to which I so readily reverted. She also challenged me when I lapsed into using organizational language learned in my own work of nursing and management. When I was unsure of what it was I was writing up, she directed me to return to my data, while at the same time keeping the problematic I had found in mind. During this analytic process, I found myself "institutionally captured" (Smith, 2005, p. 119), with a tendency towards "analytic drift" (McCoy, 2006, p. 114).

Institutional capture. One of the challenges of conducting IE research is the potential for the researcher to be "captured" (Smith, 2005, p. 119) by the institutional

language that informants use when speaking of their work. D. E. Smith (2005) identified institutional capture as "that discursive practice, regulated by the institutional procedures of text-reader conversations,[31] through which institutional discourse overrides and reconstructs material talk and writing" (p. 119). She described institutional capture as occurring when, during the course of the interview, the researcher asks the informant to describe his or her work. The researcher can follow what the informant describes and leaves the interview feeling detailed description has been obtained, only to find on reviewing transcripts that the informant used words identifying concepts in place of the description of activities needed by the researcher.

My familiarity with the terms and conventions used within health care, such as baseline, budgets, quality, and efficiency, was evident as I reviewed transcripts. When I looked for the details of NMs' work processes, I realized I had become institutionally captured during periods of my interviews. I found points at which the description of the informants' work was missing or, as D. E. Smith (2005) noted, was "descriptively empty" (p. 156).

Numerous conversations prior to beginning my research with Janet Rankin, as well as interviews with Dorothy Smith and Susan Turner increased my awareness of a researcher's tendency to be captured by institutional discourses. This awareness increased my sensitivity to discourses used by others and myself during the interview process. However, I still found myself using terms such as "retention and recruitment," "best

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[31] "The *text-reader conversation* expands the idea of a text *occurring* so that the reader's and the reader's active engagement with the text's inertia can be made visible. As a reader activates a text, she or he engages with its language and is also responding to it. That is the text-reader conversation" (Smith, 2005, p. 104).

practice," and "nursing shortage," to describe what I thought I had found. As my analysis evolved, I looked for places where I had used these and other terms common in health care, and worked to replace them with descriptions of informants' work.

Analytic drift. The second concern of institutional ethnographers is analytic drift that occurs during the conduct of research interviews as well as subsequent analysis. Bisaillon and Rankin (2013) noted that there is a tendency for both informant and researcher to drift away from the focus of the project during the interview (para. 32). McCoy (2006) addressed this by noting a tendency to focus on the informants instead of the institution (p. 109). She also stated that analytic drift occurs when "the apparent beliefs, motivations, or competencies that underlie … [informants'] different approaches" (McCoy, 2006, p. 114) are sought. In the process of writing up my findings I found myself comparing *perspectives* or providing speculative explanations. My supervisor quickly identified the sections in my analysis where I drifted away from the focus of my research. Her reminders kept my analysis focused on the *actual work* involved in staffing a nursing unit.

Limitations

There are limitations in the data that restricted the scope of my project. I was not able to interview informaticians involved in the development, implementation, and evaluation of the workload management system I critique. I was also unable to generate robust data that describes what actually happens with nurses and patients when NMs are focused on rationing nursing resources. I further was unable to locate informants who could show me how "baseline" staffing measures were established or who could provide insight into the historical use of workload management systems in regards to how they

organized prior decisions that have become the taken-for-granted norms. Lastly, despite repeated attempts to contact nursing union representatives through e-mail and phone messages, I was unable to speak to a nursing union representative about the nursing union contract with AHS.

Conclusion

In this chapter I have introduced the reader to IE as a method of inquiry. I have discussed the epistemological position of IE researchers, who identify two types of knowledge, one being conceptual knowledge, another being embodied knowledge (Smith, 2006), as present in their location of research. I have also discussed the core ontology of IE, which requires the researcher to provide empirical descriptions of material goings on in the location of informants' work processes. Of significance in this chapter is the introduction of readers to the various terms and conventions used in IE. This provides the framework for reading the following chapters. Also relevant is a description of how my research was conducted, how my analysis evolved, and the pitfalls that I watched for in the course of analysis.

By providing an explication of the social organization of NMs' work of staffing, my goal was to provide NMs with knowledge that would be useful for them in both understanding and challenging the ruling relations involved in the organization of their work. Without this knowledge, NMs and others working in health care have a limited understanding of the ruling relations that NMs take up in their work of management and that produce problems for them and others. My objective in the following seven chapters, as Campbell and Gregor (2008) suggested, is to explicate the "knowledge, skills, and

experiences involved" (p. 72) in the work of NMs as well as the "difficulties to be overcome" (p. 72) and the "tensions absorbed as part of doing the work" (p. 72).

Chapter 4: Social Organization of Nursing Resources in AHS Hospitals

In my research I studied how unit staffing in hospitals is put together, from the standpoint of NMs' knowledge, and addressed how people within AHS and in the larger institution of health care know about patient workload and the need for nursing staff. Not surprisingly, I found that knowledge about how many nurses are needed to provide patient care is closely linked to the cost of providing those nurses. I found that NM informants are held accountable for staffing budgets and are drawn into business practices of "running it lean" (NM Joan). Since hospital unit budgets and the need to cut costs were a major focus for these NMs, this chapter shows how hospital unit staffing is linked into hospital funding in Canada.

At various points in this chapter I point to tensions that arose in my data. My analysis and argument supports the reader to see the data and to begin to see how a problematic can be formulated from the data—within the broad context of Canadian health care funding. It also provides readers a sense of where NMs are located inside the social and ruling relations of their staffing work. I establish NMs' location by including core analytical pieces of writing that provide the reader with insights as to how NMs know to do their staffing work inside the demands of running it lean. These analytical pieces introduce the reader to how unit budgets are organized and how various textual practices in which NMs participate produce authorized knowledge that comes into conflict with what NMs know is necessary for a safe, smoothly running nursing unit. This introduction puts the emphasis on broad national funding schemes and begins to show how those funding schemes work on hospital patient care units.

Health Care Funding in Canada

The Canada Health Act. The Canada Health Act (1985), enacted in 1984, sets out the responsibilities of the federal and provincial governments for providing health care to Canadians. This act states the primary objective of Canadian health care policy is "to protect, promote and restore the physical and mental well-being of residents of Canada and to facilitate reasonable access to health services without financial or other barriers" (Sec. 3, para. 1). The Canada Health Act stipulates that while provincial governments are responsible for administering a public health care insurance plan, the federal government has constitutional spending power. This spending power "enables the government to make financial contributions to certain programs under provincial jurisdiction, generally subject to provincial compliance" (Madore, 2005, p. 7) with federal requirements. Each province must comply with the provisions of the Canada Health Act in order to receive the full federal cash contribution made available through the Canada Health Transfer (Health Canada, 2011).[32]

The Canada Health Act (1985) requires provinces to provide hospital services that "are medically necessary for the purpose of maintaining health, preventing disease or diagnosing or treating an injury, illness or disability" (Sec. 2, para. 27). This includes accommodation and meals, nursing services, diagnostic procedures, drugs, and all medical and surgical equipment and supplies. This overarching health care regulation establishes the responsibility of elected officials and provincial health care administrators to administer funding for hospitals.

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[32] The Canada Health Transfer refers to the program established by the Canadian federal government to transfer health care funds to provincial governments.

Provincial jurisdiction. In Alberta, the provincial government delegated much of the responsibility for administering health care services to AHS. AHS is the governing health care body responsible for service delivery to over 4 million people in Alberta (AHS, 2015). The Regional Health Authorities Act (2000) governs the provision by the Alberta government of base hospital funding to AHS through a single operating grant (Health Canada, 2013, p. 98).

The *Canada Health Act Annual Report 2012-2013* (Health Canada, 2013) reads, "The Hospitals Act, the Hospitalization Benefits Regulation (AR 244/1990), the Health Care Protection Act, and the Health Care Protection Regulation (AR 208/2000) regulate the provision of insured services by hospitals" (p. 94). These various acts authorize and hold AHS executives responsible for the administration of health care funds and the provision of health care services to people living in Alberta. AHS's organizational chart shows a central financial accounting system exists that extends into five areas, or zones, within Alberta. Within these zones, administrators manage approved budget monies (AHS, 2015). Budgetary costs are updated every 3 months (i.e., quarterly) by zone financial departments.

Hospitals' responsibility to administer funds. Having briefly tracked the "boss"[33] texts that regulate health care funding within Alberta, from the federal to provincial governments, then down to AHS zones, I now move on to describe how the budget is allocated in Hospital A. Each hospital VP is accountable to the AHS executive for administration of a hospital's budget. The VP at Hospital A referenced a financial

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[33] Boss texts is an IE term that is used to refer to higher level, or authoritative, texts of governing (Griffith & Smith, 2014).

printout in her explanation of how she made decisions to delegate funds. The financial printout included all the areas, or functional centres,[34] under the VP's authority. The printout included a column indicating the amount of money spent by each department during the preceding quarter. The VP stated this information was used to make decisions related to increasing or decreasing budgets allocated to departments.

Administration of unit budget. Executive directors (EDs) in Hospital A report to the VP and are each responsible for a large group of functional centres. The VP's work involves allocating portions of the hospital's budget to each ED. EDs are held accountable to the VP when more money is spent than is allocated to her or his functional centres. NMs I interviewed are accountable to an ED and are responsible for up to five functional centres. Included in this responsibility is the requirement to monitor budgets, which includes costs of employee wages and benefits on nursing units, as well as the cost of supplies. The budget for labour allocated for each nursing unit is based on the average hourly salary for each union[35] member with a percentage added for employee "benefits and relief" (Business Advisory Services Representative – Informant). This is considered a fixed[36] cost within the AHS accounting system. Sick time and overtime costs are paid out of the relief portion of the budget.

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[34] CIHI (2011) defined a functional centre as a "subdivision of an organization used in a functional accounting system to record the budget and actual direct expenses, statistics and/or revenues, if any, which pertain to the function or activity being carried out" (p. 13). NMs talked about their functional centres, a budgetary term, when referring to their areas of responsibility such as a nursing unit, a specific program within the organization, or a group of health care workers who had a common designation.

[35] Union contracts stipulate employee wages and are subject to negotiated increases.

[36] Fixed costs are defined as those "that remain relatively unchanged in total, regardless of the volume of production or activity, within a fairly wide range of volume" (CIHI, 2011, p. 3).

Textual Organization of Budgets and Nursing Schedules

The administration of the budget organizes how many nurses are regularly scheduled to work on a shift. Budget numbers are used by people working in the Finance department or administrative positions such as the VP, ED, or AHS executive, to monitor NMs' "efficient" use of resources. How staffing works within AHS's financial accountability structure is summarized below. Developing an understanding of this structure provides the reader with foundational knowledge from which I have drawn in writing this dissertation.

Baseline staffing. Baseline staffing[37] refers to the number of staff members regularly scheduled to work on a patient care unit over a 24-hour period. For example, six RNs, three LPNs, and two HCAs could be scheduled to work on days; five RNs, two LPNs, and one HCA on evenings; and three RNs and two LPNs on the night shift. Greater numbers of staff are scheduled to work the day shift, as it is predicted to be busier than nights. On the day shift, staff members encounter more allied health professionals, post surgery admissions, patient discharges, family and friend visits, more procedures, and so forth. Fewer employees are scheduled to work the evening and night shifts, or off-peak times when diagnostic and intervention clinics close, other workers go home, and patients are expected to sleep.

Informants understood the term baseline as indicating a pre-established norm, the reference point against which actual staffing numbers are measured. Spending that exceeds the allocated budget occurs when the number of regularly scheduled nurses (the

[37] Predicted staffing costs are calculated on an established standard number of unit personnel referred to as baseline staffing.

baseline) cannot do the work required and extra nurses are needed. Budget overruns may also be incurred, if nurses are called in on overtime to replace nurses on leave, in order to ensure that baseline is achieved. Going over baseline creates a problem for NMs who are expected to keep costs within unit budgets. As NM Joan noted, costs exceeding what is allocated in the set budget are identified as "overages," or "variances," and must be "justified" by NMs in monthly reports to their ED. These justifications, if acceptable to the ED, are called explainable variances. Incurring unexplained variances over the unit budget is one benchmark used by administrators to judge NMs' efficiency in managing staffing resources.

Rotations. The budget available for baseline staffing organizes the number of nurses who can be hired into permanent positions. These nurses are then scheduled into a regular rotation. An NM's work of building a rotation is not only guided by the baseline staff needed for each shift, but also involves ensuring that the union contract and HR guidelines are carefully followed. People working in the AHS HR department as well as people from the nursing unions review and approve all rotations prior to implementation. The rotation is usually a set number of repeating weeks, with each nurse in a permanent position holding a specific line within the rotation.

Staff lines. The rotation determines when each staff member is scheduled to work. If there are 40 lines within the schedule, there should be 40 nurses assigned, one to each line. Each nurse in the rotation is deemed to own a line. Knowing which line they

own as employees helps nurses identify when they are scheduled to work, when they are off, and which days are scheduled days of rest.[38]

The schedule. The schedule indicates which employee is working which shift on which day. The number of staff scheduled per shift is expected to add up to the established baseline for that shift. When a unit staff member is hired into a permanent position, his or her personal information is entered into ESP,[39] including the employee's name, contact information, unit, as well as the line in the rotation he or she is assigned to work. If the staff member is working in a casual position, the employee is assigned a line in the ESP without regularly scheduled workdays. This staff member does not have a line in the rotation. The ESP facilitates access to the schedule by authorized individuals outside the local setting, from SCs to administrators and data analysts.

An RN hired into a permanent full-time position, or a line in the rotation, appears in ESP as a full-time equivalent (FTE) position. A full-time RN works 1.0 FTE, or 10 eight-hour day, evening, or night shifts in 2 weeks. If the RN works a part-time line, such as 8 shifts in a 2-week period, then she or he is working a 0.8 FTE. The ESP is programmed for 0.42 FTE to 1.0 FTE. The number of hours a staff member is scheduled, which days they work, whether they are on leave, on a scheduled day off, or being paid at straight time or overtime rates, is entered by SCs into ESP.

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[38] The union contract regulates designation of "X" days, or scheduled days of rest. All days not regularly scheduled to work are X days for full-time employees (United Nurses of Alberta, 2010, p. 8). For part-time employees, "an average of at least three days per week shall be scheduled as designated days of rest, and at least two such days of rest per week shall be consecutive for a total of 14 in a four week period" (United Nurses of Alberta, 2010, p. 162).

[39] See the "Informatics" section found in Chapter 2 for a definition of ESP.

SCs use ESP to look at each employee's schedule before contacting staff members to work. Calling staff to fill extra shifts is generally related to increased patient needs *or* the baseline number of staff being reduced due to illness, holidays, or "empty lines."[40] Empty lines refer to positions that have not been filled by a permanent staff member. Nurses on the unit know who is scheduled to work by referencing an ESP printout known as the daily flow sheet, available on each unit. The daily flow sheet indicates not only who is working but also whether they are given a special assignment, such as charge, triage, surgery, orientation, or education.

To this point I have traced some of the major texts that regulate responsibility for hospital services in Canada, from the overarching Canada Health Act (1985) to Alberta's Regional Health Authorities Act (2000). In essence, I followed the money from the federal government to the local hospital. I then outlined how responsibility for the work of administering hospital budgets is delegated from the AHS executive to the hospital VP, then to the ED and finally the NM. I linked NMs' delegated responsibility for budgets into descriptions of the ESP system that organizes how hospital units are staffed with nurses, including reference to the union contracts, staff rotations, and NMs' and SCs' work of filling the lines.

I present this overview of budgets and the nurse staffing process in hospitals because, at the time of my interviews, the NMs in my study highlighted the pressure they had been under to eliminate the use of overtime and find ways to limit the cost of nursing care being provided. Understanding how financial accountabilities in the provision of

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[40] This way of replacing staff is currently changing, and the knowledge being used to make these changes is central to the analysis this research builds.

health care trickle down from the Canada Health Act to NMs provides the background information for the analysis provided in the following chapters.

Social Organization of NMs' Work of "Filling a Line"

NMs' work of staffing situates them as responsible to ensure enough nurses are available to provide patient care. I found extralocal ruling relations carefully control this hiring work, even when the funds required to hire staff have been budgeted and approved. My explication of the work NMs do to hire a nurse shows how hiring practices linked into the larger organization of financial accountability constrain NMs' work of staffing. One NM, Joan, described the process of hiring a nurse, beginning with identifying the need for a nurse, then obtaining approval, and posting the position. She uses the RMS, which is part of an electronic program known as E-people. E-people is expected to assist managers and employees to navigate their way around the hospital's electronic interfaces and databases. The RMS interface has a variety of functions. This is how the function of hiring nurse works.

Identifying the need to hire a nurse. Joan described her work in first identifying and validating the need to hire a nurse. "It might be, you need to replenish your casual pool, or a job that's become vacant, someone's on sick leave, those are the reasons, or maternity leave - and you have to replace." The nursing union contract identifies maternity or paternity, medical, and education leaves as requiring the employer's approval (United Nurses of Alberta [UNA], 2010, p. 48). Joan, aware of the requirements of the union contract, works to mediate the various rules attached to each type of leave into her work of identifying the need to hire nurse. Nurses hired to replace someone on

leave are hired for a predetermined time period, while nurses filling a vacant line are hired on a permanent basis.

Posting the position. Posting a position means a job is available to be seen both on AHS's internal website —accessible only to AHS employees—and on the external website—accessible to anyone. Joan noted that while waiting for approval to post a position, she begins to "construct the job" in the RMS. "So, okay, I need this RN. It's a 0.42." Joan described how she activates a job posting by first identifying which position in the nursing rotation needs to be filled with a nurse. "So, I go to my list—jobs by functional centre—what is the job number, the line number." Once Joan finds the vacant line in the rotation, she begins inputting information into the RMS. "Okay, I've got that, so that's what we're going to be creating here, which generates a requisition number." When the system generates a requisition number, a window opens up that includes a form that Joan populates with data.

> [I'm] prepopulating this posting form with everything so the wage range, the hours, the shifts. I got everything right, what union, days/nights, whatever—then get this posting preview and you look at it, okay, does it match everything? Yes. Then you put yourself as an approver and you create it. (NM Joan)

Joan does not decide on salary level for the posting, but instead puts in the wage range stipulated in the nursing contract. Each RN hired receives an offer of employment from the HR department that includes an hourly wage.[41] The RN union contract with the

[41] When deciding on wage, the HR department considers the union contract, previous experience, and level of education. There are three unions that NMs deal with most regularly—the RN union, the general

organization stipulates the salary paid on a 9-year scale (each year the RN automatically moves to the next highest hourly wage on the scale).

Approval process. Before posting the position in the RMS, Joan is required to obtain approval to hire, whether it is to fill an empty line or create a new one:

> Okay, I need an RN. Then you have to determine first of all why you need it, and then you have to go above and email your ED. "I need an RN, do you approve? Yes." If it's a unit clerk or a nonclinical person, even an educator, then it goes to the ED, then it goes up to the VP, and then up even higher, and then it comes back down. (NM Joan)

How Joan knew to obtain these approvals was explained by Hospital A's VP. The VP referenced an internal document titled *Vacancy Management Process: Manager Guidelines and Toolkit* (AHS, 2013a). This document informs NMs whether the vacant position fit in one of two categories, clinical or clinical support.

The VP noted, "So you can imagine the time—so it goes through the pathway. … And it isn't just a matter of I'm sending it up for approval, but I actually have to rationalize it—there's 10 questions I have to send up with it." These 10 questions include the NM considering the following:

> whether the activity can be completed by a different classification of worker; … if the position is part time, can the position be combined with another part time to increase to a full time; … [whether or not all] scheduling optimization recommendations have been acted on (prior to requesting to have the position

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support services (i.e., unit clerks, SCs) union, and the auxiliary union (i.e., LPNs and HCAs). Each union has its own contract with AHS.

> filled; and) has the review of the service optimization and provider mix been undertaken. (AHS, 2013a, p. 8)

These questions, directly related to the workforce model transformation project and the rotation optimization program that are discussed further in Chapter 7, organize NMs to first consider incorporating extralocal staffing initiatives into their local staffing work before obtaining permission to hire. The *Vacancy Management Process* (AHS, 2013a) document also includes an appendix titled "Delegation of Human Resource Authority Chart." This appendix outlines the level of authority required to approve hiring of variously credentialed staff members. The VP stated,

> There are a number of approvers. It has to go many places before it is actually posted.… Well, I'm the unit manager, I post it, I send it to my manager, it goes to the ED, then to the VP, then to the senior VP, and then comes back down.

The VP recognized that the process NMs need to go through to hire various staff members is onerous:

> The problem is it's changed. And to be honest, it's changed so much we don't think the managers, or I, know what it's supposed to be. Because this process was this way for a year and then all of a sudden we have a new form, and then the policy says this, but the form says this, and they don't jive, there's a big discrepancy there, so what do we do? So right now, again, huge bureaucracy. I think unfortunately the approval [system] is flawed. A number of them have to come to me, a number then have to go on to the Senior Vice President.

When questioned which approvals need to go to the Senior VP, the VP responded, "nonclinical. And so, they define nonclinical as even a unit clerk. So, if I want to hire even a casual unit clerk, as a manager, I would have to get approval from the senior VP."

The VP went on to say,

> The harm that does, you know, to the trust and decision-making for the managers. And so, I can understand why they're sometimes in this conflict, because, okay, I've got to get approval to post a casual unit clerk, yet I'm expected to make a decision about what my staffing level is, right? And so, we're tying their hands.[42]

The VP acknowledged that the process of obtaining approval to post a position has negative effects, undermining NMs' ability to make decisions in a timely manner. NM Joan also noted that her work of connecting with the HR department contributed to unexpected delays in hiring. Joan explained that, once email approvals are obtained, it is her work to forward the approval to the HR department. Delays in hiring increase costs, as permanent staff members work overtime to fill empty lines in the schedule when casual or part-time workers are not available to work at straight time.

Joan's work of hiring involves communicating with numerous people outside of the local setting, ensuring they are provided with all the information they need to play their part in the hiring process. Once people in HR have completed their checklists to make sure that all the proper processes have been followed, they post the position by

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[42] The VP's insightful response into the onerous requirements regarding hiring buttresses the ideology that NMs are to have "control" over their budgets. However, while the levels of approval required to hire a unit clerk are seen as "tying their hands," the imposition of the budget itself, and the way the budget ties their hands, is not contended by either the VP or the NM. It is a taken-for-granted reality that is seldom questioned.

placing a hard copy on the employment board and activate the position in the RMS, as well as on the internal and external websites of AHS.

Choosing the applicant. The position is posted for a period of not less than 10 calendar days (UNA, 2010, p. 22), after which the list of applicants is sent to the NM by HR. NM Joan noted, "Depending on the job, you can have anywhere from 200–700 applications." HR provides information that helps NMs like Joan sort applicants according to HR regulations and the union contract requirements. After sorting the applicants, reviewing the top ones, and conducting interviews, Joan makes a decision as to which applicant to hire.

Following all the "little rules." In the following data and analysis, I show that while budget dictates how many nurses can be hired, and authority to hire appears to rest with NMs, the hiring process constrains NMs' efforts to achieve the expected standards of efficiency and effectiveness in their staffing work. The NM is required to make decisions related to hiring, but must follow all the little rules set out by the union and HR.

If NM Joan does not choose the nurse with the most seniority for the position, she needs to be able to justify to the union and other employees why she hired the individual she chose.

> When I'm going through things and when I'm done finding candidates to interview, and then of those I've decided on candidates to hire, I do have to back up why I've made those decisions because every job is screened by the union. (NM Joan)

Nursing union representatives review the NMs' hiring decisions to ensure there are no deviations from the union contract, which stipulates, "In making promotions and

transfers, the determining factors shall be skill, knowledge, efficiency, experience, and other relevant attributes, and where these factors are considered by the Employer to be relatively equal, seniority will be the deciding factor" (UNA, 2010, p. 24).

One NM informant noted,

> So, sometimes you make a mistake and you get a grievance, and then you learn the rule. And I'm trying to avoid a grievance, actually. So, I do my best to go through the collective agreement. Sometimes it's very clear, you know, so if the person already holds a position they have more rights than a casual. (NM Marg)

Another NM indicated that she depended on the HR department for advice and feedback when making hiring decisions, while another described how she consulted with her NM colleagues:

> You know, this is what I'm faced with, what do you think? And here's the rationale, and they'll say, "No, I wouldn't do that," or "Yeah, that's probably a good thought." So, if it seems, if you have that little instinct that it might not be right, then that's when I call, or check with another manager, or check with [my boss], or something.

As the excerpts below indicate, I found similar processes holding NMs accountable at work in other Alberta hospitals and other Canadian provinces.[43] An NM colleague from Ontario, who consented to be interviewed, stated,

> Right now I have a grievance—which is going to arbitration, which is the next level up—for a charge nurse position on my unit. I hired the lower seniority nurse,

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[43] I found similar processes described in my network of colleagues working in NM positions outside of Hospital A.

> who I would not need to train and is already doing leadership education by taking some courses on her own initiative. Another person, who felt she deserved the job, when she has more seniority, has grieved it, and the union is backing the one with more seniority.

An Alberta NM informant stated,

> So there are all these little rules, right, so if it's someone who holds a position they have seniority over the casuals, unless of course they don't have the experience. Then you go to the casual, and then you choose the experience, and skill, and all of that, and seniority … not seniority in the union but seniority in the employee … you know, there are just many little rules. It is your decision but you do have to [justify it].

The grievance process in which I participated as an NM in British Columbia matched the one described above. Like the Alberta NM, I was required to justify my hiring practices to the union and employees when a grievance was launched.

While grievance systems[44] and HR processes are intended to produce fair and transparent hiring processes, they also delay hiring. Learning all the little rules takes time and experience. In addition, contract negotiations with each of the unions occur every 3–4 years, and then the rules change. NMs must then work to find out what the new rules are and integrate them into their practices, or face yet another grievance that delays their ability to hire efficiently.

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[44] Nurses submit their PRC to the nursing union, and the union files a grievance with the employer. The grievance outlining the nurse's concerns is then brought to the NM, who is expected to work with the union and the nurse who filed the PRC to address the nurse's concerns.

Decision to hire. Once NM Joan's chosen candidate accepts the position, she enters the new nurse's personal details into the RMS. It is at this point that the nurse is "hired" into the position, filling the line in the rotation. However, there is a time period between when a staff member begins working and when they are "counted" in estimations of baseline staffing levels. Informants indicated that a hiring process could take from 3–6 weeks. Then, depending on the experience and competence of the new nurse, another 1–4 months of orientation to the unit might pass before the nurse works independently and can be counted on as part of the baseline complement of nurses on a shift. During this orientation period, casual or permanent nurses fill the shifts in her line. Sometimes the new nurse is drawn into filling the hole, before she has completed orientation, if no nurse is available to work. In this analysis I have shown how NMs' work of staffing is closely monitored and controlled, impacting NMs' ability to address the urgent needs of nurses to be supported by enough co-workers to provide what they deem is "good" care for patients.

Conclusion

In this chapter I have shown how hospital unit staffing is linked into hospital funding in Canada. I found that knowledge of staffing requirements is always linked to cost. NMs, when considering staffing needs, use texts and work processes to guide their decision-making. Using IE, I traced how various texts, such as the unit rotation, staff schedule, WMS reports, union contracts, HR forms, and the vacancy management policy, work to insert knowledge into NMs' work of staffing that focuses them on the cost of nursing care.

Using the NM's work of hiring a nurse, I also traced the complex set of rules generated by union contracts, HR documents, computerized requirements, and other internal documents related to approvals, that limit what NMs can do and who they can hire. The complex set of processes to hire a nurse, thus filling empty lines and providing staffing resources, requires considerable time. The *Vacancy Management Process* (AHS, 2013a) document, one such text, works to hinder NMs' abilities to make autonomous decisions related to what is needed on their unit, inserting various requirements to verify that organizational projects have been considered. The authorization process incorporated into this document increases the length of time it takes to fill a vacant line. While intended to ensure NMs have considered the many ways they might decrease the cost of patient care, the document instead delays hiring, thus incurring costs that may take the unit over budget and result in discourses of inefficiency and poor management practices for which NMs are held accountable. In the following chapter I further expand on how NMs' know what is required on the unit in terms of staffing needs. I show how the two distinct modes of knowing that D. E. Smith (2005) discovered—authorized and material—create problems for NMs as they work to staff hospital patient care units.

Chapter 5: Staffing Needs: When is "Enough" Enough?

The WMS,[45] a large part of the focus of this chapter, arose as an entirely taken-for-granted, but deeply contradictory, set of technology-enabled practices that involve a number of people across the AHS and the larger organization of health care. The WMS pulls NMs into work that is impacted not only by the amount of money allocated in the budget to pay workers, but also by a belief that baseline staffing, supported by the budget, needs to be reconsidered in light of technologically produced "acuity" measures. Acuity measures are embedded in the WMS and are an estimation of the amount of *nursing time* a patient required, based on their medical diagnosis and the treatments recorded.

In this analytical chapter, I show how knowledge of hospital unit staffing needs is informed by a distinct set of textual processes that link health care funding and accountability systems with both federal and provincial government regulations that mandate specific reporting categories. Reporting categories include information about patients and factors that impact the cost of patient care, including nursing resource use. I show how health care agencies have been drawn into this reporting and accountability process in pursuit of provincial and federal funding. I also show how managerial technologies used to produce reports also produce knowledge that creates problems for NMs as they work to safely staff hospital units.

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[45] As noted in Chapter 2, the CIHI defines a WMS as "a tool for measuring the volume of activity provided by a specific functional centre in standardized units of time" (CIHI, 2015d, para. 13).

Insertion of the WMS Ruling Relation in NMs Determination of Enough Staff

NMs are responsible for creating rotations, hiring nurses, establishing schedules, and ensuring nurses are available to meet patient care needs. However, informants stated that, for the most part, they had no input into determining baseline staffing numbers or unit budgets. As I explored the discourse of baseline staffing further, I found that knowledge about whether or not baseline staffing was sufficient varied, depending on with whom I talked. In fact, there was not a single NM who could tell me how these figures were decided. When asked how baseline is determined, one NM explained, "Our staffing is fixed—it is not even measured in the workload measurement. We get a set rate of funding." Another NM noted, "You're given your budget, and your baseline staffing is this—this." When questioned further about how they know they have enough staff, several NMs referenced the QuadraMed[46] WMS program used within AHS. Even though NMs could not explain *how* the WMS was implicated in determinations of staffing needs and budgets, several NMs referred to the WMS when talking about submitting monthly accountability reports to their EDs. It was because of this that I decided to further explore the workings and accomplishments of the WMS.

Evolution of the WMS. The administrative need to justify the cost of patient care has resulted in the creation of various quantitative tools, purported to capture nurses' work in providing patient care. The work of costing and predicting nursing resource

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[46] QuadraMed is a publicly held shareholder corporation that claims to develop "information technology solutions that enable health care organizations to leverage quality care into positive financial outcomes" (QuadraMed, 2009, p. 1). The computer program used by AHS to monitor and collect data related to patient care and the management of the nursing workforce was purchased from QuadraMed. From this point in the paper the term WMS will refer to the QuadraMed WMS when linked to AHS.

needs has evolved over the past 40 years, becoming more complex as greater amounts of data are incorporated into increasingly larger computer systems. Historically, patient classification systems referred to the "identification and classification of patients into care groups or categories, and to the quantification of these categories as a measure of the nursing effort required" (Giovannetti, 1979, p. 4). Early classification systems, such as GRASP,[47] Medicus,[48] and PRN,[49] assessed whether enough nurses were available to care for the numbers and types of patients on a hospital unit (Giovannetti, 1979; O'Brien-Pallas, 1987). WMSs have since evolved and now have the capacity to include information not only on patient acuity, but also patient care needs complexity (an estimation of the *type of nurse* needed to care for patients based on patient acuity). NMs are expected to use this information to develop "optimum staffing models" (Fasoli & Haddock, 2011, p. 297).

Ruling practice of the WMS. How WMS data are collected and how it becomes authorized knowledge of the need for staff to which NMs are held accountable is explicated in this chapter. I learned that nurses and/or unit clerks on hospital units input patient care data into computerized forms each day at midnight. These computerized forms contain indicators, or specific patient care tasks, which allows the WMS to classify patients according to their type, number, and acuity. The WMS also allots a certain

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[47] GRASP is an acronym that stands for Grace Reynolds Application and Study of PETO. PETO stands for "Poland, English, Thornton and Owens, the researchers who conducted the original time management study of nursing activities" (Keefe, 2015, para. 15). In the early 1980s, GRASP expanded into Canada and began utilizing computer technology (Hannah, Edwards, & Ball, 1999). "The GRASP® suite of PC-based software products includes DataWorks, StaffWorks, and Interfaces" (Hadley et al., 2004, p. 57).

[48] QuadraMed was formerly known as Medicus.

[49] PRN – The complete title is Practice and Research in Nursing.

amount of nursing time per indicator. NMs I spoke with were unsure of how the data entered by nurses and unit clerks were used within the WMS. However, one NM explained how she worked to collect "accurate" data.

NM Tori's work to accurately capture nurses' work. This is what I learned from NM Tori, who manages an ICU. She indicated that information about nursing workload in ICU is collected using the Therapeutic Intervention Scoring System (TISS-28; Cullen, Nemeskal, & Zaslavsky, 1994) and the Nursing Activities Score (NAS; Reis Miranda, Nap, de Rijk, Schaufeli, & Iapichino, 2003).[50] These tools are embedded in the WMS and contain indicators of nursing care provided for ICU patients. The TISS[51] was originally developed to enable comparisons of one ICU to another (Cullen, Civetta, Briggs, & Ferrara, 1974). Comparisons made include numbers of patients admitted that (according to the established indicators) did not require intensive care, types of medical diagnoses, and the amount of money spent on providing care (Cullen et al., 1974, p. 40).

In 1994, Cullen et al. published an updated tool, renaming it the TISS-28. The authors asserted that the TISS-28 is a tool that can be used to provide a way for hospital ICUs to produce numerical evidence to justify the cost of providing resources for patient care. They argued,

> Objective assessment of severity of illness also made decisions regarding the appropriateness of, and reimbursement for, costly medical care more easily understood by third-party payors, helping the practitioner to *justify* [emphasis

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[50] This is an example of the type of unit-specific indicators that informant George, an AHS data analyst, explained produce the "correlations" that support unit specific calculations of workload.

[51] The TISS was updated in 1994 to become the TISS-28 – the tool used by NM Tori in the ICU.

added] the use of intensive care resources and enabling hospitals to *recover the cost* [emphasis added] of this expensive care. (Cullen et al., 1995, p. 1406)

Third-party payors, or administrators, are companies or government departments that pay health care providers (second-party payors) for the services rendered to a patient (the first party). Third-party payors in Canada include provincial and federal governments, as well as insurance companies that pay for costs not covered by Canada's publicly funded health care system. Third-party payors hold second-party payors accountable for providing the "right" kind and amount of care to people requiring assistance.

In her interview, NM Tori stated, "We did a lot of work on workload measurement. We did a lot of thinking about how do we measure workload." Tori noted that the end result of this "thinking" that she and AHS associates did was to add the NAS (Reis Miranda et al., 2003) to the TISS-28 (Cullen et al., 1995). The NAS includes questions that describe nursing activities not collected in the TISS-28 (Reis Miranda, de Rijk, & Schaufeli, 1996). NM Tori explained, "We decided to use TISS-28, but we thought it didn't capture enough of the nursing work. So there are five questions that are related to nursing assessment [in the NAS]." Reis Miranda et al. (1996) claimed that using the TISS-28 together with the NAS allows for an accurate evaluation of the amount of nursing time that *was* required to provide patient care.

The TISS-28 (Cullen et al., 1995) and NAS (Reis Miranda et al., 2003) programs, incorporated into the WMS, are understood to produce information about what staffing levels *should* have been. Data collected includes information about interventions performed by nurses caring for patients, such as monitoring an intravenous line, starting an intravenous infusion, providing a bed bath, administering multiple medications, and so

on. Interventions included in the TISS-28 and NAS incorporate nurses' work with patients that is unique to the ICU setting, where patients are monitored much more closely than on other hospital units. Reis Miranda et al. (1996) stated, "A typical nurse … [is] capable of delivering work equal to 46.35 TISS-28 points per shift (one TISS-28 point equals 10.6 minutes of each nurse's shift)" (p. 64). Reis Miranda et al. did not define what a "typical" nurse looks like; as well, much of what a nurse is actually *doing* when producing the 46.35 TISS-28 points each shift remains a mystery. What is captured is that the nurse performed specific clinical skills while caring for the patient, not how she or he accomplished the care, or what knowledge was drawn on to provide it, nor the multiple interruptions and sidetracking of a nurse's attention that the nurse likely navigated in the process of doing the said task. NM Tori implemented the TISS-28 (Cullen et al., 1996), hoping that it would support her to gather evidence to justify the ICU's use of resources. The analysis developed in this dissertation suggests that her faith in the tool may have been misplaced.

WMS indicators that produce authorized knowledge of nurses' work. Looking for more detail about the WMS than NM Tori was able to provide, I spoke with an AHS data analyst, George. He provided an explanation of how the WMS works.

> So the indicators … [are] listed, and some of them are mutually exclusive,[52] and you have to pick one of them. And they [nurses] go through every patient on the unit and they tick which indicators apply for each patient. (Data Analyst George)

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[52] An example of a mutually exclusive indicator would be choosing either that a patient walked independently, or required assistance, or was unable to walk.

George explained that each one of the distinct indicators has been calculated to include "other work" that accompanies the indicator. Calling these calculations "correlations" George provided the following example:

> A patient who requires frequent monitoring for fluid management—there's going to be a whole bunch of other … [things], so what they record is how frequently the patient fluid has to be monitored, that's what the indicator says. But it's not just the monitoring.… The correlation would capture all the sorts of care, like the various types of interventions involved with patients who need that close monitoring.

George indicated that the WMS developer tested the indicators at multiple sites to determine the correlations related to each indicator implicated in the calculation of staffing needs. He noted that the indicators included on each unit's WMS interface are selected based on how closely they match that unit's needs. He also emphasized that "the correlation coefficient isn't just how long it takes—it's how much care a patient with that indicator needs, not necessarily just for that specific indicator, but … all the time involved with that."

The statistical work being done on correlations results in a textual process wherein each indicator ticked off in the WMS is assigned a certain amount of points. George stated that for every point the rating system assigned to a patient, 10 minutes of care was calculated to be required.

> Depending on what that point total is, that puts them in a different classification. A Type 2 Class 2 is supposed to be an average in-patient, and then requirement for care of a Class 1 would be lower, and Class 3 to 6 would be higher. When you

> get those total numbers, the point system is representative of the amount of time … [that is required to provide patient care]. And so patient acuity has a number of care hours associated with it, and so when you get those different classifications, each one needs approximately this much care. (Data Analyst George)

The standardized algorithms of the WMS are computed by equating the abstract calculation of each patient's needs to "workload hours," or the composite number of nurses needed to provide care during a shift.

George believes that the indicators capture more than just the obvious time (the timed time) it takes to perform a specific task. He explained that the statistical equations used to determine the right number of nurses is based on how the computer is programmed to assign a standard *estimated* time, not the *actual* time required to provide that care. It is through these sort of statistical approaches that the WMS limits what can be known about what *actually happens* when nurses provide care. The WMS is an authorized, legitimized system of standardizing data for comparative purposes. Knowledge of nurses' workload, as captured in the WMS, becomes the knowledge that administrators such as the VP use within other local settings in place of nurses' material knowledge of workload that is based on what was really going on.

Data "makes no sense" to NMs. As NM Tori and I talked about her staffing work, and how she knew how many staff were needed on the unit, she stated,

> We get this statement that makes no sense—it's just a whole bunch of numbers. I don't know where it comes from, but we call it patient classification, but it doesn't make any sense to me. And I've had the person that does this come and

explain it to me a couple of times. I just don't find it useful in my day-to-day work. (NM Tori)

I showed a copy of another informant's WMS report (Appendix F) to Tori and asked her if she was referring to this page. She indicated yes, and attempted to explain the workload report to me. My handwritten notes on the form reflect Tori's and other informants' attempts to explain the meaning of acronyms. What is notable is that the "Target Hours Per Workload Index" remains consistently 6.62, while the line that indicates Actual Hours is highly erratic, with figures ranging from 24 to 5.33. These aggregate numbers provide little understanding of what actually happened to require 24 hours of nursing time over an 8-hour period for one patient, or why another patient only needed 5.33 hours of nurses' time. Thus, despite Tori's description of how "we did a lot of work on workload measurement—we did a lot of thinking about how do we measure workload," the time she invested in considering how to develop a good tool to support her to staff the ICU, the report is now incomprehensible to her, not only for its acronyms and aggregates, but also because it produces knowledge that seems completely unrelated to what she knows has happened on the unit.[53]

The numbers and abbreviations provided to Tori in the WMS were not what Tori expected to see as the result of the thoughtful work of collecting "more accurate" data. Despite Tori's efforts, the WMS does not produce for her an accurate representation of the ICU nurses' work, nor does it help her plan for staffing, or provide the proof she

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[53] The transference of the work of determining how to plan for and provide the right number of nurses for patient care into the computerized forms of the TISS-28 (Cullen et al., 1994) and NAS (Reis Miranda et al., 2003), information that has subsequently been amalgamated into the WMS, produces knowledge in the form of numbers and abbreviations.

needs to justify her staffing decisions. However, Tori continued to participate in producing tools that, on one level, she trusted because they were authorized knowledge, but on another level she knew did not work. The WMS did not align well with what she needed to respond to staffing issues as they unfolded; it was not an effective tool in supporting her to make everyday/night decisions to provide additional nursing resources. In Tori's words, "I don't think the system is ideal yet—it's a work in progress."

Inaccurate data – a problem to be solved. George, the data analyst, also knows there are problems with the data in the WMS. In spite of the fact that the WMS has been developed to collect patient and patient care information, George noted the numbers from the various electronic systems, such as the admitting department patient admission information and the unit patient classification information, do not always add up.[54] The result is what he characterized as "inaccurate data."[55]

> I think it's more typical that they [those entering information into the WMS] would miss entries. An example of that would be if a patient were discharged before the end of the day.… This information is entered always at a particular time of day … so if a patient left at noon their information may not get entered at the end of the day. (Data Analyst George)

George also noted,

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[54] Data produced in various electronic programs, including patient admission information inputted in the admitting department, are linked to the WMS using patient health care numbers. The ESP produces knowledge of numbers of nurses working each shift on each unit that is linked to the WMS. A third technological management program, the patient classification system, produces knowledge in the WMS of how sick, or acute, a patient was and the amount of nursing time used per patient.

[55] George's characterization of inaccurate data relies on his belief that when the data are collected systematically, with attention to the system design, that the WMS is (or could be) an accurate portrayal of workload demands.

> From the data I drew out of the system, there was a particular unit that had the highest staffing levels in all of … [this area], and the recommendations coming out of this system were for below-average staffing.… I mean that unit had very acute patients. There was no doubt about it, and so, the system could have been just straight-up wrong. Additionally, they were a unit that typically did a lot of the admission work for other units. Patients would come up to that unit as a short stay unit and then transfer out to other units. And so, again, in the indicators the admissions … [were] not on there—they were not tracking that. And we know that that's a huge demand on staff time. So, I guess, basically, what's happening there is that, one, the system isn't capturing everything that we would want it to, and, two, I think that staff were probably not checking off as many indicators as should apply to a lot of their patients, or the system wasn't actually capturing all the patient care needs.

George's talk highlighted issues that arise in attempts to capture the actual work of nurses in a way that is conducive to standardized calculations of workload. Not only do systems fail to capture what they are created to capture, they also fail to account for the unpredictable and often time-intensive work that patient care requires. It is apparent that George found no fundamental flaw in the processes to construct numerical knowledge used to plan ahead for staffing and retrospectively applied for accountability purposes. For George, the problem lay in people's inappropriate data entry or features of the system that were not well designed to accommodate admissions and discharges in a 24-hour period. George, like other informants, believed that the staffing system could (or should) be relied upon to tell the "truth" about staffing.

How the WMS determine the truth about staffing needs. Patient classification information is integrated with the ESP (as discussed in Chapter 4). In this way, two types of information are included in WMS printouts that NMs are required to review—patient information *and* staffing information. With the integration of these data sets the WMS produces a calculation of "actual hours per workload index" (AHPWI in Appendix F).[56] This calculation is derived from combining nursing hours worked with the number and classification of patients cared for during specific time frames. The system then collates the hours estimated to have been required for patient care and divides that figure by the number of hours a nurse is scheduled to work per shift, to determine the "recommended" number of nurses (recommended hours per workload index or RHPWI in Appendix F) required to provide patient care on each shift.

NMs' held accountable to the truth of WMS data. In spite of the fact that NM Tori found the WMS data *not* useful in her day-to-day work of staffing, people working outside the unit, such as the VP, regard the WMS as a tool for NMs' planning and decision-making. The VP stated, "[The WMS is] what we have available to use, and … [NMs] should be looking at that to help make decisions." The VP's understanding was that NMs should be making decisions about staffing based on information contained within the WMS.

The difference in knowledge regarding staffing needs—the VP's knowledge obtained from the WMS and NMs' knowledge from being there—creates a problem for NMs who are required to provide monthly staffing reports to their ED. Their report holds

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[56] Workload index refers to the nursing time estimated by the computer system that is required to provide patient care, calculated on points assigned to patient care information inputted by people on the unit.

them accountable for decisions made that contravene the *truth* about staffing that the WMS produces. The WMS construction of the number of nurses needed to provide patient care is the standard against which NMs are required to justify their day-to-day decisions, to respond to what was happening with nurses and patients. These are judgments about whether or not more nurses are needed or whether nurses can make do with baseline or below. The decisions that are made may or may not align with the WMS determination of what was needed—if it is not aligned, the NM is held accountable.

How the WMS shapes NMs' knowledge of staffing. The retrospective appraisal being made during the monitoring of the weekly data is whether the number of nurses who worked on any one shift is the same as the number of nurses recommended according to the WMS. This calculation creates facts about whether or not NMs are effective in minimizing use of nursing resources. If the number of WMS-recommended staff nurses were working, but no more than recommended, an ED would understand that the NM was using resources efficiently, by scheduling just enough nurses to work. If, on the other hand, the WMS indicated that more nurses were working than were needed, then the NM may be asked to justify her "inefficiency."

The WMS further ensures that NMs do not focus on what nurses deem to be enough staff, but rather mediates into NMs' staffing work what the WMS indicates is just enough staff, so that, in the NMs' relationships with staff, the WMS becomes the authorized view of what is needed. NM Tori (the manager who indicated that she found the WMS confusing and not useful for her own work of staffing), noted,

> If there is a PRC, we'll look back at our staffing. The talk is, "We're short staffed—we're so short staffed; we're always short staffed." We'll go back to see what has been our staffing, and it's been fine. It's been baseline or better.

Tori's understanding of adequate staffing does not rely on the knowledge of the nurses related to what was needed, or her knowledge of what was needed, for that matter. Rather, she relies on managerial technologies, which indicate that staffing was "baseline or better." Patients' length of stay, patient acuity, number of hours of care required, number of staff members available to provide care (WMS categories of information) are calculative ruling relations that the WMS introduces into NMs' understandings of how to resource patient care. In turn, as I show in the following chapter, NMs insert this ruling knowledge into their interactions with staff.

The extralocal organization of the WMS. Part of these calculative ruling relations includes knowledge about patient needs that are determined by a patient classification system embedded in the WMS. The patient classification system is linked to CIHI documents that broadly direct health care organizations to classify patients in specific (standardized) ways. In the following analysis, I show how CIHI and federal funding for health care links to the WMS through this system of classification, thus further linking the work of NMs in local hospital settings with national standardizing practices that are produced extralocally.

Linking the WMS Canadian patient classification system to CIHI. In Canada, not only are patient classification systems expected to provide accurate knowledge of patient care needs on hospital units, they are also used to standardize financial and health care reports produced by CIHI (CIHI, 2015b). CIHI is "a national, federally chartered,

not for-profit organization responsible for developing and maintaining a comprehensive health information system for Canada" (Government of Alberta, 2011, p. 167). Established in 1992, the CIHI is a legislated Canadian institution, approved by Canada's ministers of health (CIHI, 2014a).

CIHI receives the majority of its funding from the federal government. It also receives some funding from provincial and territorial governments (CIHI, 2014a, p. 6). CIHI is the official Canadian health care data collector and analyzer, authorized to obtain data from the provincial ministries of health. Its budget for 2013–2014 was $114.5 million[57] (CIHI, 2013c). CIHI stated that its partnerships with provincial ministries of health, Health Canada, and Statistics Canada "ensure that the policies and decisions that influence health in this country are based on accurate, comparable and unbiased information" (CIHI, 2015e, para. 6).

One of the core features of CIHI's massive electronic information network is an elaborate accountability system that requires health care agencies to collect and report specific information in specific ways. One way to collect this information is to classify patients. The CIHI (2015b) stated,

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[57] While the neoliberal movement of the 1980s and 1990s was directed towards reducing government, the reductions in government were built on managerial technologies that are capable of collecting and collating data from multiple local settings (Harvey, 2005). The ongoing spending on technologies of management that have run concurrently with efforts to economize on what is spent on front-line health professional labour is a contradiction that has not been well studied, with a recent exception in the Griffith and Smith (2014) volume. There is currently a movement among IEers to describe and map these incongruences in the neoliberal agenda (e.g., J. Rankin, unpublished paper, personal communication, Aug 30, 2015).

> Classification systems provide a systematic way to arrange elements in a subject (for example, health interventions) into groups or categories, so that data can be easily tabulated, aggregated and stored for statistical analysis.
>
> The ICD-1[58]—CA and CCI[59] classifications and their subsets provide the clinical diagnostic and intervention data within most of CIHI's data holding. ("How Classifications," para. 1–2)

The ICD-l refers to the first edition of the *Canadian Coding Standards* (CIHI, 2012), a document that mandates what and how data are collected by health care organizations for submission to the CIHI. The patient classification system allows for comparison of health care organizations' use of financial and human resources.

The CIHI provides instructions in the form of manuals intended to assist health care organizations in "coding" information in specific ways. This includes classification of patients according to physicians' documentation of the main problem the patient presents with—that is, their medical diagnosis (CIHI, 2012). Instructions on how to code patient care needs allows health professionals to document other problems as long as they use a valid ICD-10-CA code, which is a medical diagnosis. CIHI's (2012) stipulation to provide patient care information based on patient classifications and health care interventions are used to determine overall cost of patient care.

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[58] ICD-1 is the International Statistical Classification of Diseases and Related Health Problems developed by the World Health Organization and altered by CIHI to meet Canadian morbidity data needs (CIHI, 2015b).

[59] CCI is the Canadian Classification of Health Interventions, established by CIHI to accompany ICD-10-CA and developed based on medical classification standards.

CIHI documents also direct how use of nursing costs, included in workload costing, is collected and reported. They direct that statistical and financial information provided by hospitals and other health care organizations is "based on the principles and procedures in the MIS Standards" (CIHI, 2011, p. 9).[60] CIHI documents claim, "The MIS Standards reflects management information principles and a conceptual framework that together provide an integrated approach to collecting, integrating and reporting financial, statistical and clinical data" (CIHI, 2015a, p. 3). The process of workload costing directed by CIHI includes collecting data on the amount of supplies and other expenses used per patient, as well as estimating the time spent in minutes (workload units) on direct and indirect patient care.[61]

Information sent to CIHI includes both patient diagnosis and health care interventions, and is combined to determine direct cost per workload unit. Within this accounting system, patient hours is defined as "a cost distribution methodology that utilizes the length of time a service recipient receives care to distribute nursing costs" (CIHI, 2011, p. 13). The cost of nursing care is thus broken down into workload minutes, and assigned to individual patients based on the indicators recorded for the patient in the WMS.[62]

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[60] "The *Standards for Management Information Systems in Canadian Health Service Organizations* (MIS Standards) is a set of national standards [produced by CIHI] for gathering and processing data and for reporting financial and statistical data on the day-to-day operations of a health service organization" (CIHI, 2015f, para. 1).

[61] Examples of indirect costs include "overhead costs, such as finance, housekeeping and human resources" (CIHI, 2011, p. iv), and examples of direct costs include employee wages, medications supplied to patients, equipment, building costs, and grounds maintenance (p. 6).

[62] The breaking down of workload into units of time links to the information obtained by George, the data analyst I spoke with, who indicated that 10 minutes of nursing care was assigned for each point in the patient classification system of the WMS.

A hypothetical example of how CIHI's system of reporting works on a patient care unit follows. Consider a nurse filling in the WMS at the end of the day to account for the fact that a patient received assistance with walking. The WMS would assign points to the work of walking a patient—two points for walking with one person assisting, four points for walking with two people assisting. Each point would be assigned 10 minutes of time; therefore, when the nurse indicates in the WMS that the patient was walked with one assist, the system would record 20 minutes of workload hours had been used to walk a patient. This would be done regardless of whether the nurse had in fact spent 10 minutes finding appropriate footwear for the patient, 5 minutes trying to locate someone to assist, 10 minutes assisting the patient to dress, and 5 minutes locating a wheelchair to be available for the patient to safely sit down in the event the patient's legs buckle. The point being made is that the WMS allows for a standard assignment of time to an activity, regardless of how much time the activity actually took. Production of a patient as belonging to a specific type and group allows the WMS to assign times to work that is done, without consideration of the actual amount of nursing time used and the significant variability among patients.

Unit "acuity" identified when a patient is counted. Patient classification data are entered into the WMS at a specific time each day. The process of collecting specific data at a specific time is used to determine unit acuity. Unit acuity on a specific shift, day, or month, is identified by the sum total number of patients requiring care during that period who are classified as belonging to certain types and groups. The time a patient remains on the unit is used to determine patient cost, as well as the resources used by that specific patient, as long as they are identified in the WMS. However, information collected on the

unit is linked only to nursing procedures performed on patients. Data on nursing work indirectly linked to patient care, such as dealing with multiple family concerns, locating a missing patient, spending time contacting other health care providers, or responding to student concerns, is not collected.

The linking of care costs only to interactions that are collected within the WMS limits what can be known about what is required of nurses. When the system states that 20 minutes were required to walk a patient, instead of the actual time of more than 35 minutes, what can be known about the use of nursing time is limited to what is identified in the official, authorized account in the WMS. As well, the NMs who are being judged for their capacity to manage staffing efficiently have difficulty justifying a decision to bring in an extra nurse if that decision does not match the WMS calculations. NMs' knowledge of what is required from their material work of staffing does not add up to the knowledge of the WMS calculations, which eliminate from view "what else" has occurred.

Impact of CIHI's distribution of aggregate data on hospital funding. CIHI directives incorporated into the WMS organize NMs to pay attention to knowledge that is different from their everyday/night knowledge of nursing work. CIHI directives are linked to the work of NMs to ensure, exactly, that nursing resources match workload calculations. Over the past 10 years, Canadian provincial governments have required hospitals to measure "the volume of activity provided by a specific functional centre in standardized units of time" (CIHI, 2015d, "What is a Workload," para. 1). Data utilized to identify the volume of activity collected include workload, productivity, and patient acuity.

Provincial governments in Canada use data related to patient cost, reported by hospitals to CIHI, to determine health care funding (Registered Nurses' Association of Ontario, 2005, p. 7). This determination of health care funding began in *prospective* calculations of how many resources a patient was estimated to use based on how sick they were (otherwise referred to as Resource Intensity Weighting[63] and Case Mix[64] calculations). These calculations transitioned, with the evolution of more complex computer programs, to link a patient's discharge information (from the CIHI's Discharge Abstract Database) with the Resource Intensity Weighting and Case Mix calculations, producing "full cost inpatient records" (CIHI, 2011, p. vi). In other words, hospital computer programs are used to compile information from records of patients discharged, with information on services provided to them, to produce *retrospective* accounts of the cost of care that hospitals send to the CIHI. The linking of computer programs provides the CIHI with official knowledge of the minutes used to provide nursing care, as identified in the patient classification system within the WMS, which is linked to the Case Mix calculations. Collection of data using the patient classification system is understood by health care executives to be a reflection of nursing workload requirements on hospital units.

How this overarching social construction of numbers of nurses needed to provide patient care manifests itself in NMs' work is as follows. Aggregate data collected in the WMS program are sent to CIHI to fulfill federal and provincial government directives.

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[63] Resource Intensity Weight refers to a value that represents the "expected resource consumption of an average patient" (CIHI, 2013b, p. 2).

[64] Case Mix refers to patients "that are clinically similar and/or homogenous with respect to hospital resources used" (CIHI, 2013b, p. 5).

CIHI collects the data units, compiles them into reports that monitor national trends, and sends them to health care organizations, such as AHS, at provincial and regional levels. CIHI sources state that data, edited by CIHI, are valuable information insofar that they are seen to be "a good indication of the amount and kinds of services provided in terms of productivity, utilization and financial indicators" (CIHI, 2015d, "What is a Workload," para. 1). CIHI's distribution of data, used to compare effective use of resources across and within provinces, produces knowledge for health care funders that establishes which hospitals or health care regions are using funds effectively; knowledge that is based on information that limits what is known to the aggregate, standardized processes imposed by CIHI. CIHI, therefore, at a vast distance, mediates financial rationalities into the day-to-day practice of NMs' work. It is at this juncture that NMs work to mediate the established baselines and the day-to-day decisions about whether and how to call or cancel staff. It is also here that they decide what staff mix (how many RNs, LPNs, and/or HCAs) is required to provide for the *actual* (not predicted or calculated) demands of patient care.

What "actually" happened, not what "may have" happened. In my research, not only did I find texts being taken up by NMs to limit staffing resources, but I also discovered in the VP's talk ruling relations that further organized NMs to think differently about staffing work. My IE analysis revealed that the VP at Hospital A worked to change how NMs addressed nurses' reports about what is going wrong in patient care. The VP argued that staffing for the unpredictability of patient care was unnecessary. Using the authorized knowledge of acuity found in the WMS, the VP actively educated NMs about what is (theoretically) safe. The VP stated she encouraged

NMs to educate nurses to change their thinking about what is safe: "So, it's some education to the staff as well to say you have to articulate how it is unsafe to patients—not something may have happened, but *what actually did* occur that they deemed unsafe."

Here is an embedded contradiction. The VP constantly works on predictions of what may happen (based on aggregate numbers that provide for the quarterly budgets), not on what is actually happening. However, she criticizes the same practices in nurses who worry about something that may happen—based on their knowledge of the situation as it is unfolding—and requires them to describe something that actually happened in order to be heard. The VP's approach highlights the contradictions embedded in abstract versus material knowledge. The NMs traverse the "line of fault" (Smith, 1987, p. 49)[65] between what they know materially and how they are organized to act. NMs' knowledge of the unpredictability of nurses' work and the need to be prepared for what-if scenarios is constantly being reoriented to the VP's mode of knowing about staffing and scheduling, which comes from the aggregated technology-driven facts, that provide a virtual knowledge of what happened. For example, the WMS numbers leave out what NMs' know about the distance between the rooms where patients are accommodated and the nurses who move from room to room. Calculations cannot measure the added demands when two nurses split a room, with each patient having a different nurse. As well, how the staff assignments work within the clamour for the medication carts, and

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[65] Smith (1987) referred to the "line of fault" (p. 49) as a disjuncture, or "point of rupture in my/our experience as woman/women within the social forms of consciousness — the culture or ideology of our society — in relation to the world known otherwise, the world directly felt, sensed, responded to, prior to its social expression" (p. 49).

how break relief is managed, is not visible in the WMS's definition of "safe" staffing levels.

Individualized patient acuity, abstracted and objectified from the real world where a patient's acuity is encountered, coordinates an ideological circle[66], which eliminates the actual work of coordinating nursing work within the department. There is a paradox between the planning and predictive work of the calculative mode of knowing that overtakes the material mode. Thus, nurses are held to the facts of something reportable. The nurses' unease about things that may be overlooked but that did not result in a reportable outcome remains unacknowledged. Nurses' material knowledge is considered anecdotal and unreliable. The VP uses AHS texts, such as the WMS, to change the focus from nurses' material knowledge of unsafe working conditions to textual measurements of patient acuity and staffing levels. Calculations that are developed to more precisely match acuity to nurse are being used to change NMs' and nurses' knowledge of their staffing needs.

Conclusion

In this chapter, I have explicated how federal funding of provincial health care services is dependent on reporting structures that are organized by the CIHI and embedded in the WMS, thereby inserting ruling relations into NMs' staffing work. The focus of the WMS on standardized calculations of time use[67] and measurement of volume of activity focuses NMs and hospital administrators on quantifying the work of nurses.

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[66] See Appendix A

[67] The CIHI (2011) defined a WMS as "a tool for measuring the volume of activity provided by a specific functional centre in standardized units of time" (p. 13).

CIHI's endorsement of WMSs cements its use at a national level. The WMS organizes authorized knowledge of nurses' work into quantifiable, visible, standardized, and *comparable* terms.

Furthermore, I have shown how technological systems of staffing for acuity, such as those incorporated in the WMS, are organized by the managerial imperative to limit staffing. The VP actively tried to change how NMs and nurses thought about staffing needs, utilizing the current patient acuity as the benchmark for business unit decisions. In spite of the authorized knowledge of the WMS, however, NMs work to find ways to improve staffing levels on their unit, as has been shown by NM Tori. In the following chapter I dig deeper into the work of the WMS, showing how the extensive financial accountability system within Canadian health care, supported by the CIHI, focus NMs' attention on the cost of care, which results in ongoing pressures to limit nurses available to care for patients to just enough.

Chapter 6: The Social Organization of NMs' and Nurses' Knowledge of Workload

In my research I discovered WMS texts organize NMs to prioritize *cost* of patient care when assessing staffing needs. Prioritizing costs consistently produced a shortage of nurses, which became a problem for NMs, nurses, and patients. In this chapter I show how knowledge of whether a unit had enough staff depended on what nurses, NMs, and the VP called "workload." I found informants' use of the term workload depended on whether their knowledge came from a material place in the local setting or from extralocally produced textual representations of workload. I explicate how the ruling relations of the WMS shifts NMs' knowledge of workload *away* from what staff nurses report, and what nurses know from being close to direct practice, and *towards* inserting rationing practices and their rationalities into nurses thinking. This is done so effectively that NMs and nurses alike become convinced that working lean is safe and proper. I further explicate how authorized knowledge of the need to cut costs and run it lean become a priority for NMs when unit budgets are cut, without regard for WMS data or NMs' material knowledge, thus impacting NMs' ability to provide safe levels of staffing.

Who Decides When Extra Staff Are Needed?

NM Marg described how *critical* it was to be on the nursing unit talking to nurses—about their patients, the expected admissions and discharges, family issues, or other complications—in order to be able to judge if more staff were needed. She stated that the CNs, closest to what was happening on the unit, could call in extra nurses if they judged it warranted by the workload. NM Marg's talk indicated she was actively working to support CNs to make decisions around workload, based on what they knew about what was going on. She reported coaching CNs to consider using current resources differently

before calling in an extra nurse. Her coaching work is filled with her conceptual understandings of how to judge—using the language of workload and acuity in a way that aligns with the official view of these terms.[68] "If there's a need for extra workload that's required and there are other people that can support the need, … [don't call in extra staff, because] you want your availability of the people when you need it for workload" (NM Marg).

While Marg stated she let CNs decide whether they needed extra staff, relying on their nursing judgment and experience, she also actively engaged them in discussions, asking, "Do you really need that many staff?" She also asked them to think about patient "acuity" to justify decisions: "Your primary nurse has to be able to indicate to you that there is a change in the workload—a change in acuity" (NM Marg). Marg incorporated the WMS institutional discourses of acuity and workload into her talk with nurses. In this way NM Marg endeavoured to convince nurses to limit nursing care to only that which could be justified and counted within the WMS. The ongoing need to justify overages, and be accountable to WMS patient acuity data, organizes NMs to attend to resource use, as defined extralocally, at the same time as they profess to be guided by circumstances in the local setting.

NMs Work of Inserting Ruling Relations into Nurses' Thinking

In the following analysis I show how the WMS's powerful accountability system organizes how NMs think; how, from an IE perspective, they take up the accountability discourse and mediate rationing practices into the conditions of nurses' work. In the

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[68] I expand this idea in the next section.

following analysis I use the term *workload* to detail how WMS data that identify a patient's diagnosis and level of acuity provide a retrospective accounting and estimate of nursing care hours required. This detailing allows the reader to "see" how NMs' accountability to the WMS is mediated into nurses' work and thinking.

Workload: A Shell Word

The concept of workload is a *shell* word, a term D. E. Smith (2005) used to refer to words that require "the reader to fill them with substance extracted from the local actualities of her or his work" (p. 113). Various informants in my study referred to workload in their talk; however, what they understood workload to mean differed, depending on the work in which they were involved. IE provides a way to explore how the term workload organizes nurses' and NMs' work, moving across two distinct modes of knowledge: authorized and material.

Nurses' knowledge of workload. Nurse and NM informants used the term workload to identify the work of caring for patients: "You have to work with the workload that presents, and it changes constantly" (CN Barb); "Our workload is unpredictable" (NM Joan); "We had a lot of sick time, we had minimal staffing, and we had a very heavy workload" (NM Marg). Nurses and NMs understand that workload refers to *how much work* there is for nurses to do on the unit based on what is happening on the unit, the number of patients present, their care needs, and the nursing resources available.

NMs and nurses also referred to workload when determining staffing levels in the moment, or when planning for the next shift's staffing needs. One CN (Barb) showed me how workload on her unit is linked into baseline staffing. She described what she knew of

how workload was determined by people outside of the unit: “They watch the number of deliveries that we have, and on which shift and what not. I don’t know how they come up with a number, but they come up with a number, and then that’s your baseline.”

CN Barb was unsure of how workload was used to determine baseline, if indeed it was. However, she knew a lot about workload. Barb explained how the WMS workload numbers do not reflect what is happening in the moment. She identified the limitations of the retrospective calculations that are always behind what is actually happening: “When they finally present, then you’re a little beyond that.” Barb understood that the official knowledge of workload does not reflect what is happening on the unit at the time retrospective WMS data become available to the NM. She spoke to what she knew about workload as she experienced it, saying,

> From experience you know who … [are] the staff. If you have new staff, things take longer. If you have older staff, or experienced staff, things don’t take quite as long. It’s one of those things. We have a lot of students that come through, and new orientated staff, so we orientate them; we spend a lot of time with our students. (CN Barb)

The requirements to support students and new staff members was noted by Barb as increasing demands on nurses’ time, thereby increasing workload.

Barb used her knowledge of workload to assess whether she had enough nurses working. Her knowledge also included explanations about patients’ increasingly complex care needs. Barb stated,

> The needs and the wants of those patients have changed too.… The expectations are different than even 5 years ago. Patients, they want—there’s more epidurals

done, there's more interventions done—inductions, that kind of thing, which takes nursing time.

Barb expressed patient needs in medical terms—more "epidurals" more "inductions." Her reference to the medical aspects of patient care, when speaking of nursing workload, reflected the additional nursing time that complex medical interventions required. Throughout Barb's talk terms such as "busy" or "unpredictable" or "crazy" were used to describe an increase in workload that was unacceptable to nurses.

Working around baseline to accommodate workload. SCs, CNs, and NMs are all involved in the careful planning work done to ensure there are enough nurses to provide safe patient care. SC Jodi explained that she always added an extra nurse, one for which the budget does not allow: "Thirteen is nothing, that's not enough staffing any more. That's what they said—your staffing should be just 13, but that's impossible." When questioned as to who had said staffing should be just 13, Jodi stated that "management" had told her.

The managerial directive to have Jodi follow budget guidelines conflicts with Jodi's knowledge of the unit's staffing needs. Jodi knows that nurses are not always available at the last minute, when patient needs necessitate calling more staff or sick calls[69] need to be replaced. Jodi stated, "So instead of just looking for the next person [available] on that day when … [the CN] says, 'I need more staff,' I might as well prebook that person." Jodi knew that when she was unable to get nurses to work at the last minute, nurses' work became increasingly unmanageable. She also knew the

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[69] In Canada, Zboril-Benson (2002) found fatigue related to work overload, decreased job satisfaction, longer shifts, and working full time resulted in increased sick time taken by nurses.

likelihood that at least one nurse would call in sick in the morning; therefore, she worked to mitigate the double effect of beginning the shift short staffed and needing more nurses than baseline staffing allowed.

> Because, you never know, the next day there might be two or three sick calls. It's going to kill them, because it's going to take me a long time to find staff, because it's early in the morning. And who knows if I'm going to find people to come in and what time they can come in. So I always have to make sure that there's 14 staff. Before we used to be 11, but this unit, it's crazy.… There used to be like 11/11 staff, but now, 13/14 is not even enough some times. (Jodi)

Jodi's knowledge of workload came from 9 years of experience working on the unit. Due to this experience Jodi was aware the level of nursing staff needed to care for patients was not what was authorized as baseline staffing.

Authorized knowledge of workload. The VP used the term workload differently than the nurses did. Referencing the WMS, she stated, "The tool that the staff fill out at midnight … defines what the workload should be." The VP's comments related to the tool being filled out on the unit referred to the patient classification system embedded in the WMS. According to a QuadraMed informant (personal communication, January 1, 2014), the WMS uses four components of work on patient care units to define workload. These four components include patient classification; admission, diagnosis, and treatment; off-unit activities, patient education, and so forth; and nonpatient-specific workload. While the program is built to capture multiple types of workload, all the VP saw was the end result—the facts generated by the WMS indicating numbers of staff members that *should* have been working to provide care based on the number and type of

patients on the unit, and the WMS determined workload. The VP's comment shows the textual authority of the WMS, and its production of knowledge about what nurse-staffing levels *should* have been.

NMs' precarious balancing act. NM informants are situated precariously—balancing the need to meet workload demands in the present, as CNs such as Barb understand workload, while at the same time being accountable to the retrospective textual authority of the WMS. NMs, managerially responsible to ensure that just enough nurses are available to care for patients, spend a significant amount of time dealing with unpredictable staffing issues and concerns. Their talk about unpredictability of patients' needs and, therefore, the unpredictability of staffing needs,[70] was mixed with their talk of how they followed organizational directives that resulted in a scarcity of staff available to provide patient care. One NM spoke of this disjuncture:

> You could have a bus load come in and you have just enough staff, or maybe one sick call that you didn't fill, and now you're behind the eight ball and your struggling and unsafe. So, how do you – that's the big question in this area – how do you safely staff for an *unpredictable workload*? (Joan)

NM Joan's talk about safely staffing for an unpredictable workload reveals her concern about the need to limit staffing levels to just enough, never too much.

At the same time Joan expresses concern about safety, she *is* limiting resource use to just enough. She went on to say,

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[70] Staffing needs is a concept used to refer to how many staff members (RNs, LPNs HCAs, and unit clerks) are required to coordinate and provide care for patients on any one shift.

> You know, there are various approaches. You know, there's one approach that I've seen used when I was working on the unit—we'll just put in extra on the weekend. We know everyone's calling in sick on the weekend. We'll just put two extra, and then if two people call in sick now we're down to regular, right? Well, that has positives and negatives, but sometimes, if staff knows that there are extra, they will call in sick.… Okay, that's one strategy. Or, we'll have baseline and then we'll cancel people if we don't need them. Well, then your casuals get tired of being cancelled, you know, so there's a variety of—there's good and bad to each staffing model, and I don't have the formula. (Joan)

NM Joan knows there is no easy formula for scheduling just the right amount of staff. As well, she knows that nursing rotations (nights and weekends) have fairly predictable patterns (increased weekend sick calls). Responding to this is a dilemma for her.

When questioned about the knowledge she used to make her staffing decisions, NM Joan stated, "A lot of my decisions are made with the *dark cloud of finance* over, because I am very accountable—I am the only one accountable.… Ultimately, I have to say what our *budget's* doing and why it's doing it." While Joan acknowledged that she was accountable for how monies in the budget are spent, she expressed her angst at knowing when she's gone too far in limiting staffing. "When you're dealing with people, you're dealing with staff and their well-being and you're dealing with patients—and *how lean do you let it go?*" (Joan).

Joan is aware how running it lean impacts nurses' work: "Like as a nurse, that was one of the things I really didn't like—how management ran it really lean, because I can't do my job in a satisfying way if I'm scrambling." Joan understands that she is

caught between wanting to support the nurses by providing enough staffing resources, while at the same time limiting those resources to just enough to prevent decisions being made "for our unit *if we don't run it lean*." Joan is caught between her deep and detailed knowledge about staffing and workload, and ongoing pressures to be running it lean. She knows she will be held accountable for using nursing staff above and beyond what the WMS indicated was *required.*

Joan's knowledge of nursing work, of the budget, and of her responsibility to account for overspending, created a problem for her. Referencing how she inserts her knowledge of budget and costs into nurses' work, she stated,

> I'm not cutting, okay, but every day it's the same conversation with the CN and the SC: "Do you need that many staff? Tell me—you justify to me why you need that many staff." And if they can, fine. It's a skill though, and the experience of the CN is very important too, and I understand. It can be very scary to run lean, or run just with enough, because, especially in this area, our *workload is unpredictable.* (Joan)

Being accountable to the larger organization of health care for efficient utilization of staffing resources requires NMs like Joan to put aside their knowledge about how "scary" the unpredictability of patient care can be in favour of the authorized knowledge of workload, budget, and baseline.

Being held accountable to the budget and the WMS's recommended staffing levels ensures that NMs continue to be caught between what they know of staffing needs from their work at the front line and what the authorized knowledge produced by the

WMS directs. NM Joan talked of what she knows of staffing needs, referencing her Monday morning work:

> Monday, weekends are really troublesome for the staff, especially a summer weekend. So you've got people that want a life, and people that are also at work, and trying to get the two to mesh. And so, they're almost inevitably short staffed. Intra-hospital resources are a little bit less on the weekend; you might have had some rougher cases. There seems to be things that you have to mop up afterwards on a Monday. There's always overtime because they had to call people in overtime to make sure that the staffing was adequate. I just know that there is a pile of papers that are waiting for me on Monday, and some stories and that kind of thing.

Joan knows that paying overtime is what is required to make sure that "staffing is adequate" on weekends. However, at the same time, she noted the pressures placed on her to eliminate overtime use: "AHS has a lot of pressure on managing the finances and reducing sick time and overtime and all these things. You know, they're very, very important things, and I see it." When questioned how she knew they were important, she stated, "There are memos that come out and we have portfolio meetings, and … [are told] the priority is this, so the communication is good. We know what direction we're supposed to be marching in" (Joan).

The memos Joan received came from various departments throughout AHS. She described,

> Sometimes they are from your ED within your portfolio: "Okay, within our portfolio this is important to us." Or it is the VP of the hospital saying, "For this

> hospital this is what is important to us." It may be coming from our zone director, so as a zone, or it could be provincial. So there are so many layers, and they all are fairly consistent in what they're saying. They've clearly identified the pressures of the organization and what they are expecting managers to do. (Joan)

The pressures Joan referred to are financial pressures caused by the decrease in expected provincial funding for health care and the corresponding imperative to reduce overtime. Joan noted, "There is a fair amount of clarity on what needs to be done, so then, each manager is left with the task—so how is it then to be done, right?" Evident in Joan's talk is how imperatives, generated outside the nursing unit, require her to limit overtime use and minimize overages of staffing budgets. These are imperatives that are inserted into her consciousness and become the knowledge she has to reconcile with knowledge that overtime is required to ensure adequate staffing on weekends.

This analysis shows how nurses in the local settings of their work on hospital units understand workload differently than the VP, while NMs are caught between two understandings of workload. The VP's understanding, reflected in the static, retrospective WMS numbers representing workload, are a different mode of knowledge than the workload that nurses know about and anticipate, based on their experience and knowledge of what has just happened, what is happening now, and what is expected to happen during the next shift. However, NMs, held accountable to authorized knowledge in the WMS, mediate the WMS knowledge into nurses' understanding of workload, to reinforce the need to cut costs, eliminate overtime, and reduce sick time use. Thus, the term workload is used to ensure just enough nurses are available for patient care, but no more.

Unpredictability of Patient Care and Workload

Needing more nurses than are working often results in paying nurses overtime. One NM (Marg) relies on the CN to decide whether or not to call a nurse in at overtime rates. In the next quote, Marg demonstrated how she switches between two distinct formulations of workload. It is possible to trace how she is working to mediate, even in her own mind, how to traverse two incommensurable modes of knowing—the WMS *abstract* computer generated knowledge and the material knowledge of the world she knows being on the unit. In regard to the decisions a CN must make about calling in more staff, Marg said,

> The biggest key message to all of them [CNs] was this: You have the autonomy to decide if you need more staff or not. You do not need my permission because the one thing you're going to be measured on, is your primary nurse has to be able to indicate to you that there is a change in the workload [*WMS, abstract*]—a change in *acuity*—you have to be involved in that because you have to make the decision and act on that, because when you supply that nurse with more staff, to supply her needs, you have to make sure that other staff are coming in to support the workload [*LOCAL empirical knowledge*].

Marg provided guidelines for CNs' decision-making, stating that she expects CNs to plan ahead—look at the patient population currently being cared for, anticipate patient care needs, and connect that to anticipated staffing needs for the next few hours or next shift. Only nurses on the unit can do this planning work. Marg stated,

> Because you can't predict workload you have to be thinking ahead and anticipating. Not thinking that, "Right now I need it." You need to be thinking

> about what's happening and looking 4 hours ahead. To say, "You know, I can see this escalating—I can see my inductions going to be workload on evenings, do I have enough staff," and I have to make that decision.

Marg coaches nurses how to think, what to look for, and how to make decisions on whether more staff members are needed. This coaching is a different sort of anticipation and acuity calculation than the WMS provides. Marg is talking about what is actually going on—using the language of workload and acuity as the nurses use it to describe real patients and their particular needs. Nonetheless, Marg's work to teach the CNs how to develop expertise in predicting and matching the right number of nurses to respond to the changing needs of patients is work that is conducted under surveillance of WMS discourses of acuity. The final accounting will not be made by canvassing the nurses to ask them whether the patient care was adequate shift to shift, but rather at the end of the month, when the WMS is seen as the authorizing arbiter of shifts deemed "inefficient."

Need to Cut Overtime Use Produces Shortage of Nurses

While much time and effort is spent collecting data for the WMS, other apparently more urgent work is being done at the same time in efforts to obtain enough staff to provide patient care. The work and knowledge practices of these two parallel work processes seem to be unrelated; one is used to evaluate and justify staffing resource use based on a mathematic calculation and the other is used to provide those same staffing resources based on nurses' knowledge of their work. The data to be presented next show how these two processes intersect.

Filling a hole in the schedule. As SC Jodi noted earlier, not replacing a sick call is one reason nurses work short staffed. The day I interviewed her, CN Barb noted that the unit

ran three nurses short the previous day, meaning there were three fewer RNs working than were normally scheduled in the rotation. “Yesterday we had three sick calls, so we worked it with three nurses short” (Barb). Barb went on to say, “when we run short, we always run close to what’s safe, what’s unsafe, and that’s the scary part.” When asked if they had tried to replace the nurses, Barb stated,

> The calls went out but there’s no replacement, no one available to replace. We just have to do without—you can’t tell people here [women in labour], “Well, we’re too busy. You just have to come back another day.” It doesn’t work.

In discussing the work processes of calling in staff members to fill holes in the schedule, SC Jodi stated,

> Usually, in summer it is harder. There is more overtime during summer, because of sick calls, and being short staffed, and things like that. But … now, September, and later on, then it’s pretty easy to find people because everybody’s back from holidays.

While Jodi acknowledged it was easier to fill shifts in the fall than it had been in summer, the reality was that despite our conversation occurring in September, “when it’s pretty easy to find people” (Jodi), the nurses on the unit had worked short because of three sick calls that could not be replaced. The process of limiting staff to just enough created a situation that nurses determined was unsafe when staff members calling in sick could not be replaced.

Process of filling a hole. NM Marg explained how filling a hole in the schedule worked. She stated that on days during the week SC Jodi was responsible to call in staff. If Jodi was not available, the unit clerk or the CN called staff to fill the hole created by

the sick call or having an empty line. The ESP system (which links to the WMS) has established rules for filling holes. SC Jodi followed these rules when replacing sick calls. She commented, "When you call in people, with the sick calls, you have to start with the casual people" (Jodi). As noted previously in Chapter 4, permanent staff nurses hold a line in the rotation. Casual employees also hold a line in the ESP system (although it is not a permanent line in the rotation, simply a line showing which shifts they are scheduled to work).

The computer system allows the SC, or anyone who has authorization to access the system, such as the NM, to see who is working which shift, who is on leave and for how long, who is on vacation, and who is replacing someone otherwise away. ESP also provides a way to identify nurses available to work that day (i.e., someone not already scheduled for an evening or night shift during the next 18–24 hour period). Jodi explained the process of replacing a hole in the schedule as follows:

> So you look for the casual people, and then you go to the part-time people that don't have X days,[71] or you can put calls out … [to everyone]. If … [they are] willing to come in, then they can come in. But people say, "Oh, it's my X day. I just want to come in for overtime." Then they'll just have to wait. If I can't find anybody, I'll call them back. Because once the overtime kicks in, you have to call the full-time people, because, it's fair—they have to work full-time and this [person] works 0.6. It's not really fair—they only have two shifts in a week and

[71] See Footnote 37, in "The Schedule" section found in Chapter 4 for an explanation of X days.

> they already get overtime. You know, so we always have to go to full-time and then part-time.

According to the RN union contract, part-time nurses who want to work more hours than are scheduled can agree to move their X day to work a shift on that day without overtime pay. In a 4-week period, each part-time employee has 14 X days, regardless of whether they hold a .4 or .8 FTE (UNA, 2013, p. 162). SC Jodi elaborated,

> So when they want to pick up extra shifts and they have X days on here, then I have to move their X days—it's not overtime. So let's say if this person [pointing to a line in the rotation] wants to pick up extra shifts on the 27th [an X fills that day in the line], you have to move that one [X] to October first.

Moving X days ahead in the rotation produces a greater number of X days in some weeks then others, creating a situation where a part-time nurse works two to three shifts and the remaining days of the week are designated days of rest.

Jodi's attempts to limit overtime use by moving X days created a situation in which part-time nurses were only available to work extra shifts at overtime rates. This system of bumping ahead limited their availability to work extra shifts, unless the manager agreed to pay overtime. However, Jodi also knew what the organizational goals were (to decrease overtime use), which organized her decision-making in filling a hole.

> The only time that they get overtime is when there's a last-minute call. Like when we're so desperate we need somebody. They like say, "Okay, I'm available for overtime," but I will keep trying to call the casual people, the people … [who don't] have X days, I'll try to call them to see if I have somebody. But if I really

need somebody and this person can only come because it's X days, then I'll bring her in, when I'm desperate. (Jodi)

When Jodi called nurses at the last minute, she juggled the union contract and organizational directives. Knowing who was and was not entitled to overtime determined which nurse she accepted to work the shift. Being "desperate" meant that she knew that the needs of women in labour (the inductions, epidurals, breech presentations, placenta previas, cesarean sections, etc.) greatly exceeded the number of nurses on duty.

Organization of "doing without." The ruling relations of the WMS, as exemplified in Jodi's decisions related to replacing a sick call and Joan's running unit staffing lean, are two examples of how a shortage of nurses on hospital units occurs. Nurses' work increases significantly when it is spread over fewer nurses than are normally required and scheduled. On the shift noted previously, when the unit ran with three fewer nurses than were normally scheduled, no one was able to come in to work, even at overtime pay.

When asked what happens when the nurses work with fewer than baseline staffing, CN Barb stated, "Well, we just have to do without."[72] Barb's knowledge that "we're too busy" does not provide an excuse for nurses to turn patients away. Her understanding was that, even when busy, nurses will simply "do without"—without breaks and without another needed pair of hands. Patients do without regular monitoring; pain medication; the trained eye of a nurse who notes, addresses, and reports symptoms;

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[72] In regards to skilful interviewing in IE, this response represents a missed opportunity for empirical data. Barb was there. She knew what happened. This is the sort of opportunity when a request, "Tell me what you did and how it unfolded," would provide detailed insight into what actually goes on when nurses "just have to do without."

minimal breast-feeding support; and so forth. These are the hidden consequences of running it lean that are invisible in the statistical data being carefully amassed within WMSs across Canada.

How patients and families experience working short is exemplified by a recent personal experience. I was visiting a patient in the hospital who indicated she needed to go to the bathroom "now." She was dependent on hospital personnel to assist her to the washroom, as she was unable to stand without assistance. I went into the hallway to request assistance and found the hallways empty, until I saw her nurse coming out of a room. I asked for help and she said, "I'm sorry, we're short staffed today. I'm assigned to 14 patients instead of 11 today, and I'm covering for my buddy while she's on lunch. She'll have to wait until my partner comes back from her break." When I returned to the room, my friend stated, "It's too late—I've already had an accident. Why don't you leave until someone can come help me? I don't want you to sit here with this smell." Despite that I am a nurse, my friend was acutely embarrassed by her predicament.

The impact of not receiving care is often captured in the WMS only when patients' health deteriorates to the point of requiring more frequent therapeutic interventions, such as intensive care, wound therapy, or an increase in medications to control increasing morbidity. Nursing quality indicators (falls, urinary tract infections, etc.) are very coarse measures used to link patient "outcomes" to nursing work. However, situations such as the one I described fall outside of the events or incidents that are measured as outcomes.

Some of these outcomes are serious and are seen simply as "complications," others are less so. People I have talked to and told about my research into hospital care

have told me similar stories to the one I recounted about the unattended needs of my friend. I have been told of situations when a patient waited over an hour for a call bell to be answered; when a patient was told that the nurses were too busy to call a doctor to inquire about a patient-generated request for blood pressure medications that the patient took routinely at home; when an immobile patient's meal tray was placed out of reach and picked up untouched because there was no nurse available to assist with the meal; when a husband watched his wife's intravenous run dry and was unable to get a nurses' attention; when a patient waited in pain for over an hour for an analgesic; when a woman was with her sister during the first dressing change following a mastectomy when the nurse was interrupted and the wound was left uncovered for 45 minutes. These complications, while not recorded or counted, create situations for families that directly impact their trust and faith about the care given to their family member. They also reflect on the scarcity of nursing resources and the direct impact of those scarce resources on patients and their families.

NMs' use WMS to address nurses' concerns of running short. How NMs take up the WMS data and organizational directives to limit nurse staffing, resulting in negative patient outcomes, is further exemplified in NM Tori's talk. NM Tori described how she responded to an organizational decrease in overtime funding, stating she established a new process for handling nurses' absence due to illness.

> So what we do, if we have one sick call, we usually run without replacing that sick call. And then if there's another one, we'll definitely replace that one. Mostly at straight time if we can, and then try to replace it with overtime if that doesn't work. (Tori)

The first nurse calling in sick is not replaced. What "just became a fact" in the budget reduction results in one less nurse available to provide patient care. This decision is made regardless of nurses' judgment that another nurse is needed, or what the WMS shows was needed.

In describing the response of nurses to this new policy, Tori stated, "So there's one [nurse] that comes and says, 'I have to pick up an extra patient—that means I have four patients.' Well, that's a standard assignment." Tori implied that while taking on an "extra" patient was not common on this unit—a highly acute coronary unit where the usual assignment was three patients—in the face of a nurse's resistance she used what she had learned from the aggregate numbers determined by the WMS (the standard assignment) to support her decision. Tori's response to the nurse, "Well that is a standard assignment," was used to override the nurse's concern. Moreover, the statement implies that if the nurse is unable to manage the increased workload, then she is somehow less competent than other Canadian nurses working on a similar unit.

A "standard assignment" is Tori's response to the nurse who understands her work to be much more "crazy" when having to care for one more patient than normal. Tori's justification for not replacing a sick call is based on the fact that she did not have the option of maintaining the higher level of staffing due to budget restrictions. "So we really try to maintain our baseline. But we also have the pressures of staying within our fiscal responsibilities. So we can't just have overages and pay overtime—we have to be really responsible from a fiscal standpoint." As such, instead of replacing the first sick call, the nurses work with fewer staff members.

In spite of knowing that staff feel more supported and less "crazy" when they have baseline staffing, Tori acts in accordance with the institutional discourses of accountability for budgets and the need to reduce overtime, instructing her CN and SC not to replace the first sick call. Limiting the use of overtime is Tori's way of controlling costs and limiting resource use. When questioned how this impacted patient care, she stated, "The staff would assume another patient in their assignment," and would work short. To control spending, Tori increases the amount of work each nurse is required to do, which produces a shortage of nurses to provide patient care. She noted, "The talk is 'we're short staffed—we're always short staffed.' We'll go back to see what has been our staffing, and it's been fine. It's baseline or better" (Tori). In this situation, Tori refers to the authorized knowledge of baseline and workload, as assessed monthly by the WMS, to determine whether an acceptable number of staff nurses were working, regardless of what nurses on the unit described as their experience. Nevertheless, my experiences, the experiences of families and patients, and CN Barb's recounting of working short, all indicate there are times patient care demands exceed nurses' capacity to respond.

Nurses' Knowledge of Staff Numbers "Good to Work With"

Repeatedly, I was shown the complex work processes that contribute to ensuring enough of the right sorts of nurses are present on each and every shift. Consistently, this practical, everyday/night knowledge required to operate a nursing unit seemed somehow unrelated to the WMS, which holds NMs accountable to a lean set of practices for nursing. The NMs, CNs, and SCs move between what they know from their knowledge and experience and what they know from the WMS, apparently without awareness of the

contradictions. In the excerpt below, CN Barb described how she "knows" there are enough nurses.

> Well, as the CN, you coordinate all the activity basically. You know which staff is able to look after which patients. You have some staff that are OR [Operating Room] trained, but the newer staff is not OR trained, so you have to find the balance of that. And you can capture the type of patient, and what the patients are doing, and if one nurse can look after two, or not, that kind of thing.

Barb indicated she called nurses in at overtime pay "when we feel what's manageable, and the workflow, and what's not. We pretty much know in the daytime how many staff is good to work with." Barb's knowledge of the number of staff that was "good to work with" was based on experience.

> If you look at our booking, we have the same number of cases to do and things to do yesterday, and we have three more staff members today. It's making things a lot easier, more manageable. You can get it done. (Barb)

Barb identified unit work as being more manageable when the numbers of nurses scheduled in the rotation were at work.

Nurses and WMS Data Disregarded When Budgets Cut

Nurses, such as Barb, know their work and the numbers of nurses required to "get it done." However, when budgets are cut neither nurses nor the WMS (understood to provide good quality quantitative data that are continually refined and linked into data

banks[73]) are referenced by hospital executives. Campbell (1984) discovered that despite the introduction of workload management technologies, authorized knowledge of how much work a nurse can do, expressed in terms of patient needs and workload hours, is malleable and adjustable, based on the amount of available funds.

> "Efficiency" (cost-constraint) is organized by systematically narrowing the original account of needs, projecting a conservative estimate of the total nursing labour-time required, and increasing the expectation of nurse productivity built into the staffing figure. Reduced funding for the nursing department can be accommodated in nurses' work by relying on nurses' "professionalism" to prioritize properly and get through the most necessary nursing tasks. (Campbell, 1984, p. 51)

While use of equations to produce data in the WMS is seen to logically calculate needs and establish a standard, Campbell found the standard continues to change as funds are redistributed. Knowledge of the number of nurses needed, contained in managerial technologies and promoted as increasing NMs' abilities to make "better" decisions, changes based on what information is captured. Campbell found that increasing expectations of what a nurse should produce is accomplished by changing WMS data to narrow what is captured, determining what a "standard" nurse should be able to do, and then increasing the amount of work a nurse is expected to accomplish. My research has extended Campbell's findings and identified that not only do standards of evaluating

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[73] Examples of data banks include ESP, payroll, HR, patient admitting information, patient records, and so forth.

nurses' productivity change, but also that WMS data are not even considered when unit budgets are cut.

VP's response to mandate to cut costs. In spite of the extensive work of developing a WMS to provide knowledge of the numbers of nurses needed to provide patient care, my research reveals that this information is not considered when making a decision to cut budgets. The VP explained how she worked with NMs to find ways of decreasing the cost of care when the government provided fewer funds to AHS than expected. The VP stated, "We did have conversations with the managers, month after month, that said, we need to come up with some cost savings, give us your creative ideas." The VP indicated that when NMs could not find cost savings, unit budgets were simply cut. She stated, "Where we couldn't find any [savings], we just said, 'Okay, we're going to have to cut 0.5 FTE across the board'." Without regard for the WMS, here is a paradoxical and arbitrary hospital-wide decision to remove FTEs and take money out of the budget. The across the board percentage cuts do not align with the ongoing efforts to match nursing resources precisely with patient acuity and an accurate mix of staff that are found in the WMS.

While NMs are expected to reference WMS data to support staffing decisions, the VP made cuts to those same budgets without reference to that same data, which is purported to indicate staffing needs. The ongoing production of WMS data focuses NMs on thinking in terms of carefully rationed and numerically justified workload standards that contradict what else they know about what patients may need from nurses. However, administrators can sidestep the authority of the WMS to make decisions about nursing resources when they deem it necessary to do so. In this way, the WMS is used as a tool to

coordinate NMs' staffing approaches in line with the "facts," yet administrative decisions at a particular time and in response to imperatives extralocally imposed do not pay attention to those same facts. Thus, the WMS is a "uni-directional" technology (in regards to staffing decisions), and does not, as NMs expect it to, influence budgetary decisions.

Example of funding cut impact on NMs' work of staffing. How funding cuts impacted NMs' ability to adequately resource their units within the allotted budgets, to be seen as efficient, was exemplified in my interview with a Business Advisory Services Representative (BAS Rep). Each NM within AHS is connected to a (BAS Rep), whose job it is to work with the NM to manage their budgets. NM Tori met with Peter, a BAS Rep, during my research observation. Peter agreed to participate in my research project. When Tori left the office to obtain further information for Peter, he mentioned to me a recent decision to reduce nursing resources. Peter stated, "I implement savings. I get a list. For instance, they calculated so much percentage of overtime is going to be set as a target. So everyone had to do 25 percent less overtime." The "they" who remove funds from the unit budget organize NMs to do something about their overtime use. Peter explained that when budgets are cut "you have to go into the system and put in so many negative FTEs to take that money out." Putting in "negative FTEs" resulted in Peter's cutting the "budget for FTEs."

How budget cuts impacted NM Tori's ability to make effective staffing decisions, decisions that addressed the WMS data as well as her knowledge of what was needed, became clear as I spoke with Peter. Peter stated, "The year after, they simply removed [overtime funds] from the budget. So it wasn't, 'We're going to try'; *it just became a fact*

[Emphasis added]. So everyone had a bunch of dollars taken out for that." Having a "bunch of dollars taken out" of her overtime budget resulted in NM Tori being organized to not replace the first sick call, showing how a reduction in overtime spending is accomplished on the backs of nurses, who try to provide the same amount of care to an increased number of patients.

Arbitrary cost cutting produces knowledge of NMs' "inefficiency." NMs also suffered the effects of arbitrary budget cuts. NMs' inability to manage their budgets, when overtime budgets were cut, resulted in their being considered inefficient. Calling NMs "clients," Peter described how his work unfolded:

> I speak to the client, and they're like, "Well, I was over in overtime. How can you take money away if it's not there?" And I'm like, well, "It's the people in the ivory tower that decide that sort of thing. So whether it's practical or not, it looks really good on paper at the top."

Peter went on to say to me, "[The NMs who are over budget] are being inefficient—they can still do the same work with less money if they were being efficient. So it's the manager's fault." Peter recognized that while, on the one hand, decisions "at the top" that "look good on paper" may not be "practical," he also understood, on the other hand, that managers who could not stay within their budgets were seen to be inefficient, and that it was his job to make them run more efficiently.

When asked to provide an example of NMs' inefficiency, Peter said,

> Well, sometimes it's glaring. I know a department that has a nurse clinician, and regularly, in that clinician's rotation, they come in and there's no clinician work. And they end up doing LPN stuff. So that's inefficient. The rotation should be so

> that when that nurse clinician is there they are doing nurse clinician work, obviously. If you have that more often, you have someone walking around with not much to do.

Again, knowledge of the "glaring" misuse of nursing resources does not appear to be linked to information obtained from the WMS, but rather to the opinion of a BAS Rep who somehow made the observation that a nurse hired to work at an advanced practice level is doing "LPN stuff."

How BAS Rep Peter knows about what is going on when the advanced practice nurse does LPN stuff and not "nursing clinician work" was not provided in our discussion. As is explicated in Chapter 8, what Peter knows about this glaring inefficiency is intimately linked into the contemporary strategy to get the right staff mix and to organize NMs to think about how to staff not only with the right *number* of nurses, but also the right *sort* of nurses. Peter knew that a nurse clinician doing "LPN stuff" is "inefficient." Knowledge inserted in the WMS authorizes people to talk about "the right nurse for the right job" (identified as *complexity* in the WMS). Knowledge of the right nurse is based on systems that categorize nursing work into a series of tasks judged as high or low complexity and subsequently calculated as an *acuity index* in the WMS.

Not only did BAS Rep Peter question NM Tori's efficiency, but the VP also called NMs to account for their inefficiency. The VP stated that when NMs went over budget she asked them questions that included, "Why are you negative in salaries; what's going on in your unit; can you explain why [you are over budget]; what have you done [to address the problem]?" Types of answers the VP expected from NMs included, "I've hired casuals; my overtime went down from this to this, etc. etc." The VP's expectation

was that NMs would be able to "clearly identify why [they were] having these challenges."

The VP also stated she directed NMs to question nurses. On the occasions when nurses raised the issue of too few nurses working to provide safe care, she instructed NMs to ask the staff, "Did you really need six and was it actually an RN that you needed? What kind of care were you doing?" The NMs are expected to "make do" with the decreased funds. The decrease in funds disregarded both NMs' experience of staffing needs (shift to shift) as well as the prior "baseline" standards that the WMS data had (supposedly) established. This is rationalized by *new* WMS approaches that, directed by the advanced computation of the WMS, require NMs to examine the *type* of care being provided and whether lower paid staff could provide the same care, thus reducing costs. Accordingly, NMs continue to be subordinated by the WMS "facts," while the hospital administrators, responding to funding cutbacks, make an apparently arbitrary administrative decision. The circularity of the WMS positions NMs as inefficient, while at the same time supporting administrators' efforts to hold NMs' staffing work accountable to a rationalized ruling relation.

WMS: NMs' Accountability to its Ruling Relation

I have discovered that while NMs stated they did not find information produced by the WMS useful for making decisions on a daily basis, they are held accountable to its ruling relation. As well, paradoxically, NMs use authorized knowledge of efficiency, baseline, and acuity, discourses located in managerial technologies, to insert ruling discourses into nurses' thinking. NMs question CNs about whether they really needed to call in an extra nurse and, if so, how they justify their decision to do so. As well, NMs

hold CNs accountable for overtime that is accrued when nurses miss breaks or stay late to accommodate patient care needs. This monitoring and questioning of the exercise of nurses' professional judgment about nursing resources pull both NMs and their staff into ruling relations organized by the WMS technology; ruling relations that establish apparently comprehensive standards that ration budgets in line with baselines, acuity, and efficiency.

While NMs are expected to use the WMS to inform decision-making around nursing workload, workforce planning, acuity indexes, bed utilization, and so forth, it is evident that executive-level decision makers are able to disregard the facts that are accumulated within nurses' time-consuming data entry about patients. My IE research revealed that the work processes generated by the WMS are embedded in nurses', NMs', and health informaticians' work, as they are responsible to collect WMS data both locally and provincially. Exploring what these work processes accomplish, and whose interests are being served, became an important focus of my research into NMs' work.

Conclusion

Knowledge generated by the WMS coordinates the work of NMs in contradictory ways. The data are inputted daily into the WMS by nurses. In turn, the data provide the AHS executive with the means to assess NMs' efficiency. Within the ruling relations, an efficient NM is one whose textual accounting of her work aligns with the WMS limits for numbers and mix of staff to produce just enough nurses. Behind the scenes, however, nurses and NMs rely on their material knowledge to care for and keep patients safe.

Even so, the WMS endures as a powerful coordinator of decisions, in keeping with the principle of running it lean. I found no evidence that hospital executives use the

WMS to make critical nursing resource decisions when the budget was cut. Rather, the WMS's purpose seems to be to hold NMs to daily, weekly, monthly, and quarterly numbers that keep their attention firmly focused on the budget. While there is some latitude (e.g., when SC Jodi regularly schedules overages), the decisions of NMs are influenced by the WMS reports. Working short becomes a fairly normalized occurrence. What has been shown here is the conundrum experienced by NMs—how they know and respond to demands using the mode of knowledge that "being there" builds—and, in a contradictory turn, how they also activate knowledge from the authorizing technological systems that link to constructed facts about efficiencies.

Thus, this chapter has begun to explicate how extralocal interests routinely enter into NMs' and nurses' knowledgeable decision-making. Currently, it would seem that NMs are relied upon to mediate between what they know staffing needs are from their local setting and the technologies that reorganize that knowledge. My research indicated that extralocal interests are increasingly limiting NMs' control of staffing work and that their ability to mediate between authorized and material knowledge is tenuous.

Other strategies, discussed in the following chapters, involve the introduction of streamlined rotations (minimizing NMs' time and effort spent on this work) and "optimization" of the nursing workforce. These strategies threaten to undermine NMs ability to "manage" nursing resources and buffer nurses and patients from the consequences of running it lean. What is unknown is whether NMs' will continue to be organized within the increasingly tightened managerial technologies to establish an even more standardized hold on nurses' workloads and staffing practices.

Chapter 7: Institutional Projects to "Improve" Nurses' Productivity and Managerial Visibility

Smith (2005) stated, "Institutional discourse swallows perspective, the local, the particular, and the subjective experience of workers.… Institutional discourse selects those aspects of what people do that are accountable within it" (p. 156). Having explicated in the previous chapter how the discourses of budget, baseline, and workload mobilize NMs to limit resources available for patient care, thus demonstrating their accountability to the WMS, I move on to another institutional discourse, productivity. In my research I discovered that enormous amounts of NMs' time and effort were spent reorganizing staff scheduling in response to organizational staffing strategies. These strategies aimed to develop standardized, region-wide schedules and nursing rotations in efforts to address concerns about nurses' productivity.

In this chapter, I show how the rotation optimization program (ROP) and the Manager Workforce Report (MWR), designed to improve productivity, play out in the everyday/night work of NMs.[74] Particular attention is paid to how the ideological account[75] of staffing work, captured in the MWR and ROP, is linked into and aligned with various discursive practices that intensify the reach of managerial technologies. My research showed how NMs' work with the MWR and ROP intensifies the suppression of their subjective experiences, bifurcating their consciousness to the point of actually

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[74] These two AHS projects, linked to data in the WMS, are part of the "complex" of ruling relations discussed in the previous chapter.

[75] Campbell (2001) noted, "When an account is constructed, inserting a ruling conceptual frame and suppressing the experience of the 'subject' of the lived actuality that the account claims to be about, the account is said to be ideological" (p. 243).

separating their decisions about the nurses' rotation from what nurses tell them is required based on their material knowledge.

Rotation Optimization Program

NM Marg spoke of how she had been working to remove part-time lines, as employees resigned or retired their positions. She explained how this work was aligned to the project titled "rotation optimization." "My focus since I came back this week is to update my rotation, because we're inactivating our part-time positions that have become vacant and making full-time lines to work through to the rotation optimization plan" (Marg). Rotation optimization is the name given to a program implemented by AHS (2014) "to increase the number of full-time staff, streamline staffing processes and *reduce costs* [Emphasis added]" (p. 10).

AHS (2013c) identified improved continuity of care as a rationale for decreasing part-time nursing positions. As well, the ROP initiative was promoted as providing "greater opportunity" (AHS, 2013c, p. 20) for full-time positions for nurses, as though nurses welcome this strategy. The ROP is described in an internal AHS (2012b) document as a process of "developing and testing a set of standard master rotation guidelines based on an agreed upon interpretation of the various Collective Bargaining Agreements" (p. 2) and includes "building optimized master rotations for up to 48 units based on the new master rotation guidelines with a goal to increase … [full-time:part-time] FTE ratios, decrease use of overtime and maximize efficient use of relief resources" (p. 2).

I traced AHS's directive to eliminate part-time positions for health workers in the form of the ROP to the Alberta Ministry of Health. The Ministry of Health hired a global

management-consulting firm, McKinsey and Company, to review health care services and make recommendations[76] (Appendix G). McKinsey and Company supports large organizations to find cost efficiencies and develop sustainability in business management (McKinsey & Company, 2015). In their review of health care in Alberta, McKinsey and Company made three recommendations "to enhance the capacity and effectiveness of Alberta's workforce" (Alberta Health and Wellness, 2009, p. 7). These recommendations were to

> enrich provincial recruitment and retention strategy; … deepen initiatives and incentives to increase productivity [by considering changes] to the benefits structure, salary guidelines, and/or reimbursement schemes; … [and to] increase workforce efficiency by better matching work to skills, … by refocusing staff on those activities through which they provide the most value. (Alberta Health and Wellness, 2009, p. 7)

The above recommendations were one of a nested set of recommendations provided to the Ministry of Health by the consulting group.

The Ministry of Health used information and recommendations provided in McKinsey and Company's report as a source document in the creation of *Vision 2020* (Alberta Health and Wellness, 2008). *Vision 20/20* (Alberta Health and Wellness, 2008) is an information document distributed by the Ministry of Health. It outlines planned government changes to health care that focus "on health system transformation and

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[76] The Provincial Services Optimization Review, published by Alberta Health Services in 2008, does not mention McKinsey and Company as the authors of the document. However, McKinsey and Company are cited as the authors in the University of Calgary and the University of Toronto copies of the report.

improving health services" (Government of Alberta, 2010, p. 4). My research found that AHS executives worked to implement McKinsey and Company's recommendation to "deepen initiatives and incentives to increase productivity" (Alberta Health and Wellness, 2009, p. 7) in the amalgamation of part-time positions into full-time positions. Cost savings would be achieved by eliminating permanent part-time positions. This was to be accomplished by ensuring that nurses applying to work with AHS and not wanting full-time work would be required to move into a "casual" category of worker and forfeit sick leave, prepaid health benefits, and seniority entitlements (UNA, 2010). The Workforce Model Transformation Project (WMTP)[77] was the project title under which the ROP was organized.

Workforce Model Transformation Project

The AHS executive members hired professional consulting groups[78] to implement two projects under the WMTP umbrella: the ROP and the scheduling project (AHS, 2012b). In implementing the WMTP project, the AHS executive relied on the advice of these consultants, including guidance to optimize the roles and functions of health care professionals. I interviewed a consultant with the WMTP project, who confirmed she was hired by AHS to change how care is provided on patient units. AHS executives noted that the ROP and the staffing project were

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[77] The WMTP "initiative began in January 2012 as a demonstration project to drive transformational change associated with potential clinical workforce shortage. The initiative was focused on building a model of care for adult medical and surgical units that optimized the roles, responsibilities, and scopes of practice of health care providers, enhanced interprofessional collaborative practice, ensured the right provider mix and provided care based on patient population needs" (AHS, 2013c, p. 3).

[78] For the sake of anonymity I do not mention the names of the two groups here, but note they are not McKinsey and Company.

> expected to generate new ways of ensuring that our collaborative health care delivery teams are sustainable into the future and to ensure that our master rotation, relief staffing models and staff scheduling practices support transparency for staff, enhanced capability for staff eg. [*sic*] Ability to schedule from a distance eg. [*sic*] Staffing apps, and innovative, attractive, efficient and optimized schedules. (AHS, 2012b, p. 1)

Another consulting group, working with the WMTP project, was recruited for their expertise in best-practice rotation development. AHS executives indicated that this group "is assisting our own AHS rotation management and scheduling teams to learn new ways of approaching this work … [of staffing] and increasing our internal capacity to do this work more quickly" (AHS, 2012b, p. 2).

The *BN Workforce Initiative* (AHS, 2012b) document, provided by an informant, cited members of the AHS executive as stating that the WMTP initiative began because of a perceived lack of sufficient clinical workforce, both now and into the future.

> To meet Alberta Health Services (AHS) clinical workforce needs it is necessary to modify demand for health services, *optimize* [Emphasis added] the roles and functions of individuals and teams, and *optimize* [Emphasis added] the recruitment and retention of available health care professionals. A model (or models) to ensure a sustainable mix of providers, working to *optimal* [Emphasis added] scope is (are) required. (AHS, 2012b, p. 2)

These comments imply that the current clinical workforce was not optimized. AHS documents utilized the concept *optimize* when referring to the roles and scope of practice[79] of employees, as well as recruitment and retention of health care professionals.

Optimization is an ideological term, another shell word that means different things to different people. Using the term optimization, the scheduling team,[80] supported by the advice of external consultants, developed a rotation for NM Marg's unit that had 98% of nurses working full-time, thereby optimizing the workforce. For NM Marg, optimizing the workforce on her unit meant that she would need to change her unit rotations, which, at the time, consisted of many part-time lines.

The question here is, whose interests do the institutionally optimized schedules serve? To whom are they "attractive?" For example, understanding what is needed related to scheduling, being able to staff "from a distance" (i.e., access to staffing apps on phones so that staff can be reached at anytime from anywhere), produces a particular formulation of a problem and its solution. However, what I learned from nurses in direct practice and from NMs themselves is that this sort of "ready availability" is not necessarily desired by staff members, who may not want to be reached, whose shiftwork, family life, and need to plan and enjoy days off is jeopardized within this new optimization process. Nonetheless, the discourses of optimization, productivity, and

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[79] Scope of practice is a term used frequently to reference various ideas and concepts contained in government acts. The Government Organization Act (2000), Schedule 7.1, lists health care activities restricted to being performed by various health professionals (p. 42). Scope of practice includes these activities, as well as those listed in the Health Professions Act (2000). For RNs, their scope of practice, or health care they are licensed to provide, is further limited by CARNA (2013). Health care organizations, such as AHS, or AHS hospitals, have the ability to further limit a RN's ability to practice her or his profession, and thereby limit the RN's scope of practice.

[80] The scheduling team was a group of workers organized to develop and recommend revised schedules to NMs as part of the ROP.

efficiency are part of NMs' work that overrules their own knowledge of nurses' needs on their units. NMs are pulled into the rationality of optimization through promises that region-wide rotations will reduce the time they devote to scheduling and staffing and, overall, staffing processes will be more effective and less costly.

Activating the Productivity Discourse to Optimize Staffing

The AHS (2013c) *Health Plan and Business Plan 2013–2016* stated productivity "refers to the amount and quality of services we deliver in relation to the time, staff, and materials needed to deliver those services" (p. 7). As clinical information systems have provided increasingly sophisticated data collection and data management (acuity scales, length of stay, bed utilization programs, and the like), the capacity to measure a hospital's productivity has also expanded. Hospital productivity is not only measured as a percentage of worked hours to paid hours (Figure 1), but can also include other key information about time, staff, and materials. While the ROP is intended to increase productivity by decreasing part-time positions for nurses, the MWR organizes NMs to focus on optimization of nurses' productivity.

Indicator	Oct-11	Variance from AHS
A. Workforce Strategy: Increase Productivity		
i. Worked Hours To Paid Hours (%)	80.84%	0.77%
Worked Hours	11,571.71	N/A
Paid Hours	14,313.68	N/A
ii. Paid Hours Cost Per Worked Hour ($/hr)	$45.97	$3.74
Paid Hours Cost	$531,982.11	N/A

Figure 1. Excerpt from MWR – increased productivity.

The MWR exemplifies how organizational texts, produced with the use of computerized health information systems, are embedded in NMs' staffing work. An AHS quarterly performance report stated the "Managers' Workforce Report is distributed monthly to all AHS managers, roll-up reports and by division" (AHS, 2012c, p. 67). Roll-up reports refer to individuals, such as the ED and VP of the hospital, to whom NMs' reports are sent. The quarterly performance report further asserted that the MWR and "associated handbook provides managers with better data to build awareness and information regarding existing workforce demographics and FTE" (AHS, 2012c, p. 67). The performance report, which promotes the monitoring of the monthly MWR, provides evidence of the text's capacity to focus NMs' attention on data that organize how they are to think about human and financial resources for which they are accountable.

The MWR provides NMs with a monthly summary of patients' workload costs for each unit. The MWR includes headings in accordance with the AHS workforce strategy,[81] developed to support managers to increase productivity, effectively utilize nursing personnel, monitor absenteeism, and decrease loss of nursing staff. Each one of these strategies is listed as a heading in the MWR. Under each major heading further headings are listed that identify what is being measured and evaluated to produce the specific strategy.

[81] AHS workforce strategy was a formal managerial tool used to standardize reporting and hold NMs accountable for productivity numbers, efficiency rates, absenteeism, and numbers of staff leaving their unit.

Alberta Health Services

Manager Workforce Report

Unit Manager

09/01/2012

Indicator	Oct-11	Variance from AHS	Nov-11	Variance from AHS	Month Change	Year To Date (Apr-Nov/11)	AHS Oct-11	AHS Nov-11	AHS Month Change
A. Workforce Strategy: Increase Productivity									
i. Worked Hours To Paid Hours (%)	80.84%	0.77%	82.06%	1.55%	1.22%	78.65%	80.07%	80.51%	0.44%
Worked Hours	11,571.71	N/A	11,935.89	N/A	364.18	91,371.32	8,024,993.02	8,308,139.25	283,146.23
Paid Hours	14,313.68	N/A	14,544.79	N/A	231.11	116,178.81	10,022,065.78	10,319,347.46	297,281.68
ii. Paid Hours Cost Per Worked Hour ($/hr)	$45.97	$3.74	$46.00	$4.01	($0.02)	$47.96	$42.23	$41.98	($0.24)
Paid Hours Cost	$531,982.11	N/A	$549,017.70	N/A	$17,035.59	$4,382,123.20	$338,876,973.56	$348,800,314.42	$9,923,340.86
B. Workforce Strategy: Effective Utilization									
i. Overtime Hours To Paid Hours (%)	0.95%	-1.00%	0.82%	-1.14%	-0.13%	1.50%	1.95%	1.96%	0.01%
Overtime Hours	136.69	N/A	119.89	N/A	-16.80	1,739.11	195,807.46	202,423.41	6,615.95
ii. Average Vacation Bank Hours	111.34	N/A	114.80	N/A	3.46	124.56	128.18	129.21	1.03
Vacation Bank Hours	13,027.09	N/A	13,202.26	N/A	175.17	104,971.62	8,683,849.89	9,042,561.17	358,711.28
C. Workforce Strategy: Absenteeism									
i. Absenteeism Hours To Paid Hours (%)	4.13%	0.30%	4.98%	0.98%	0.86%	4.08%	3.82%	4.00%	0.18%
Absenteeism Hours	590.75	N/A	724.65	N/A	133.90	4,743.26	383,277.72	412,728.98	29,451.26
ii. Absenteeism (#Days/FTE)	1.11	0.10	1.34	0.29	0.23	9.73	1.01	1.05	0.04
Calculated Assigned FTE Hours	11,542.95	N/A	11,720.70	N/A	177.75	84,781.97	8,293,552.43	8,572,861.67	279,309.24
iii. Average Assigned FTE With Casual	0.50	N/A	0.49	N/A	N/A	N/A	0.63	0.65	N/A
Average Assigned FTE Without Casual	0.74	N/A	0.74	N/A	N/A	N/A	0.84	0.86	N/A
D. Workforce Strategy: Retention									
Voluntary Termination Rate (%)	0.00%	-0.34%	0.87%	0.66%	0.87%	1.74%	0.34%	0.21%	-0.14%
# of Terminations	0.00	N/A	1.00	N/A	1.00	2.00	229.00	139.00	-90.00
# of Employees	117.00	N/A	115.00	N/A	-2.00	115.00	67,184.00	67,654.00	470.00

Figure 2. Photo of manager workforce report.

Note. Figure adapted to ensure all words are readable.

As an example, under the heading "Increase Productivity," staffing data from the ESP computer program are summarized (Figure 2). Data included in the workforce strategy to determine increased staff productivity include the number of hours staff members worked, divided by the number of hours for which staff members were paid (this includes sick time, vacation, and overtime). Also provided is the average cost of

each hour of staff time paid, as well as the total cost of staff resources used on that unit during the month being reported. Included under the heading "Effective Utilization"[82] is the percentage of overtime worked to hours paid, as well as the number of overtime hours paid. Also included is the average number of vacation days per employee that have been earned, as well as the total number of vacation days earned that are yet to be taken by employees (Figure 3). Absentee hours—both total and as a percentage of paid hours—are included under a third heading, while a fourth heading includes employee termination rates and numbers.

B. Workforce Strategy: Effective Utilization		
i. Overtime Hours To Paid Hours (%)	0.95%	-1.00%
Overtime Hours	136.69	N/A
ii. Average Vacation Bank Hours	111.34	N/A
Vacation Bank Hours	13,027.09	N/A

Figure 3. Excerpt from MWR – effective utilization.
Note. Figure adapted to ensure all words are readable.

Beside the monthly summary of unit information is a column showing the units' percentage of "variance" from AHS's average employee costs (Figure 2). The MWR purports to show NMs how effectively they have managed in comparison to other NMs within AHS. Others in the organization also track NMs' effectiveness as they implement the ROP, or eliminate part-time positions, by referring to the productivity line in the

[82] The photocopied document produces black highlights, limiting what can be read. However, the original shown to me by the NM produced clear identification of each heading.

report. Creating a standardized report for NMs creates knowledge of their staffing work for people outside of the local setting that eliminates any administrative need to garner NMs' detailed material knowledge of what is needed on their units related to staffing—knowledge they have from doing the work.

In December 2012, the AHS quarterly performance report stated, "Monitoring Labour Cost per Worked Hour enables us to manage workforce efficiencies [and] improve scheduling effectiveness" (AHS, 2012c, p. 74). To assist NMs "manage workforce efficiencies" AHS (2012d) revised an online internal webpage, called *Tools for Operational Managers*, to "provide managers with a variety of options and supporting tools and resources to effectively manage labour costs, including the 2 per cent *productivity* goal" (p. 74). The *Tools for Operational Managers* document directly linked productivity metrics on the MWR (i.e., data on employees' worked hours, overtime hours, absenteeism hours, and termination rates) to the successful implementation of AHS's clinical workforce strategy (AHS, 2012d, p. 74). Productivity metrics hold all the work that NMs do in relation to staffing and condense it into labour costs.

The MWR changes what NMs pay attention to as they manage their budgets and staffing levels. I found that how NMs know what the staffing needs of their units are, based on their everyday/night experience of this work, is not only being organized by the WMS, but also by the MWR. The following quotation demonstrates how the MWR focuses NM Marg on effective utilization and increasing productivity:

> You can get the numbers and the report, and you can go to those reports and get a quick answer, but you still have to know why that happened. So, for example, now it's overtime in August: we had lots of sick time, we had minimal staff, and

> we had a very heavy workload.… You are going to have that variance in your report—and you're just going to have to answer to it.

Knowing she will have to answer for the variances in the MWR, Marg is organized to think about how to justify the cost of nurses needed to provide for patient care, and why that cost is higher than her budget allows and the average cost across AHS.

The ruling relation of the MWR is not limited to NMs, but circulates beyond the hospital, creating extralocal authorized knowledge of NMs' staffing work. The June 2012 summary report of an AHS Provincial Council meeting indicated that a member of the AHS executive used the cumulative MWRs to report that workforce productivity had increased. In the meeting summary, this claim was supported by the fact that the "average FTE has increased in all Zones during the 2011/12 fiscal year" (Alberta Clinical Council, 2012, p. 7). The increased number of FTEs, in the context of this report, is a proxy measure for increased productivity.

What is made clear in the summary report to the AHS Provincial Council is that part-time lines are "counted" as a burden (hence unproductive). Here is where Marg's work to reduce part-time positions on her unit can be analytically linked to work going on elsewhere in AHS. Marg was using attrition to accomplish the institutionally defined and regulated formulation of productivity that produced reductions in spending on benefits (paid hours not worked) that appear in the MWR as increased productivity.

This sort of work to measure productivity goes on in health care organizations in other Canadian provinces. For example, the RNAO (2006) in Ontario is charged with monitoring "healthy nursing work environments" (p. 110) for nurses. The report coming from the RNAO is published to counter administrative moves (such as the one going

forward at AHS) to eliminate part-time positions. However, using the same ruling logic, the RNAO (2006) suggested an optimum relationship exists "between nursing workload units and direct care worked hours (Unit Productivity = workload hours/worked hours x 100)" (p. 43). The RNAO (2006) defined nursing productivity as "unit workload divided by hours worked" (p. 84). The organization recommended the ratio of nurses working full-time to part-time be 70/30—70% of nurses working full-time and 30% of nurses working part-time (Registered Nurses' Association of Ontario, 2006). Here again, a formula focused on supporting health care organizations to manage their nursing productivity has been developed. No references supporting this recommendation is provided in the RNAO (2006) document, yet it adds to the authorized knowledge of what nurses' productivity *should* be and that these can be calculated as an aggregate standard for all areas of nursing practice.

Using the measurement of total nursing hours worked organizes NMs to increase productivity by removing part-time lines. Formulating productivity within these narrow constructions does not provide the full picture of the nursing workforce and how nursing units are staffed. NMs not only work to address the problem of ensuring enough nurses are available 24/7, but also are responsible to solve other problems created by programs such as the ROP (such as having a reduced pool of nurses to call upon during times of high pressure and complex patient care situations). These new conditions are left out of the logic of measuring and increasing productivity.

NMs' Knowledge Subsumed by Authorized Knowledge of Nurses' Productivity

The authorized knowledge constructed within the MWR and presented by AHS executive members contrasts with what Marg knows about her staffing needs based on

her experience of rotation development. Marg, understanding that optimization for her unit means removing part-time lines from the nursing rotation, actively works to eliminate part-time positions. She knows that she is accountable to this mandate despite her (other) knowledge about how her managerial efforts affect staff.

Marg understands that if she is required to implement the rotation presented to her by the scheduling team, her ability to retain experienced nurses who desire part-time positions will be reduced. She values the seasoned staff nurses, knowing that the presence of experienced nurses is critical in labour and delivery when complex cases arise as urgent situations that junior members may never have encountered. Marg stated, "The reality is our part-time workforce is what is desired for women in certain age groups because of children, family, and other obligations." Marg knows that many of the nurses she works with, who work part-time, do so because that is what works for them. The "good idea" of optimizing the workforce, understood as best practice, collided with Marg's knowledge of how staffing really works, the complex strategies she implemented to optimize how shifts are covered, and her attention to the well-being of staff.

Joy, a nurse educator, reinforced Marg's understanding of the work that her staff nurses are involved in outside the immediate work setting, such as caring for family, obtaining further education, and contributing in other areas of nursing. Joy referenced feedback from nurses that the AHS Provincial Council had received when discussing the ROP encompassed in the WMTP.

> Overwhelmingly, the feedback that they received at the meeting was that there are many of us that work part-time intentionally. What about someone who's working part-time in … [child health] and then part-time in adult, just to maintain that skill

> set? Or someone that's working at an outpatient IV [intravenous] clinic, giving chemo, part-time, and also doing a part-time job in the Emergency department? Or going to school part-time, to develop their academic standing in order to be a leader in the organization, and now they will have to make a choice between opting out and taking a leave, or not doing it.

AHS's knowledge of the productive work that nurses do does not include knowledge of the multiple aspects of their productive work, such as working at two jobs, or obtaining further education to increase their knowledge and abilities. Within AHS, knowledge of productivity has been standardized and summarized into MWR productivity information, where only full-time workers are counted as productive. In fact, Marg has learned from the MWR that her staff are not productive. Her focus is drawn away from accommodating staff and being a good nursing leader to focusing on removing opportunities for staff to meet the multiple demands on them from outside the immediate work setting.

Activating the discourse of productivity, Marg engages in eliminating options to work part-time, creating a less desirable work situation for staff nurses. One nurse, Jenny, noted,

> I am in a full-time line, but I only want to work part-time, so I've got this temporary part-time that I'm also in. I have to choose whether I will go into my full-time or go casual afterwards, unless I can get another temporary [part-time position].

When asked if having a part-time position would affect her decision to stay or leave the hospital, Jenny noted, "If I had options elsewhere, like I'm going to stay in … [the city],

but if I had options elsewhere, I would consider them because I want to be part-time." What Jenny desired was part-time work; the lack of which created such a disquiet in her that she intended to look elsewhere for work if no ongoing part-time work was available at her current workplace.

Another nurse, MJ, noted,

> The whole idea of doing full time, making everybody work full time, I don't think works for most nurses because there's enough nurses that have other things in their lives that they don't want to be here full-time. They want to have part-time hours.

For MJ, removing part-time positions from the rotation limited nurses' ability to manage their lives. Like Jenny, MJ understood that a full-time position does not work "for most nurses." The potential to lose numerous experienced nurse colleagues to attrition is a worry for NM Marg, yet in spite of this worry she activates the organizational initiative of rotation optimization and eliminates part-time lines. Eliminating part-time lines, even when she knows this is not what works for her staff, is work that Marg described in detail when she explained how she developed a rotation.

Rotation Development

Doing the work of rotation optimization is not simply a matter of replacing one rotation with another. Marg described the work she did to develop the unit's current rotation.

> So, it was a big undertaking to do it, but, I think, having said that, … now that I have the lines that have been approved [by HR and the RN nurses union] and all, now when I do a replacement of full-time, I try to find a line that's in the rotation

> that's already been approved to choose, to put into the rotation, so that there doesn't need to have that approval, and it's going to stay true.

"Staying true" refers to maintaining lines that follow the guidelines as set out by the nursing union and that the union and HR have already approved. The process of changing the nursing rotation and obtaining the various approvals is arduous and time consuming, discouraging NMs from making frequent rotation changes.

The production of master rotations within AHS is meant to eliminate the arduous process of rotation development. This apparently relieves NMs from this complicated and burdensome task. However, while adopting a master rotation would appear to eliminate rotation development work, Marg expressed concerns about this new direction, as the recommended rotation for her unit contrasted significantly with the rotation she was currently working with; a rotation that had been developed to blend the unique needs of her staff nurses and the unit's requirements for continuity of patient care.

> Well I had lots of help in this. I mean, I presented a rotation, it had to be approved by UNA; we had a consultant that also was involved. But we had designed what it was we wanted it to look like. Our problem is, we had 8-hour and 12-hour lines—and the union was so accepting of, allowed, because they knew the work that had gone into this. They allowed us to have a different start day for every 8-hour and 12-hour—the 12-hour starts on Thursday and the 8-hour starts on Monday. And so they were extremely—I was very appreciative that they were willing to acknowledge that and approve it. It was not to set a precedent because that was not the intention. It was to make this rotation work.

Marg's knowledge about nurses and patient care needs on her unit differs from those outside her immediate setting; those who know the work of staffing through various authorized texts and for whom standardizing the rotations across the hospital makes sense.

There is logic in developing tools that eliminate the complicated work Marg describes. However, that logic covers over all of Marg's intimate knowledge of the nurses and the nursing care on her unit. Marg knows the nurses working on her unit need specific work schedules because of their personal needs and Marg has matched these to the unit's requirement. In view of the proposed standard rotation, Marg expressed concerns focused specifically on what she knew about the nurses employed on the unit she managed—those with back pain, small children, nearing retirement, and many for whom part-time work kept them in the workforce.

Ultimately, however, Marg subsumed her own knowledge about what her staff needed in order to implement the team's rotation optimization recommendations, where the majority of lines were full time. In discussing her work to eliminate part-time lines, she noted,

> So we started out with 28% full-time positions. We probably are pretty close to 40% now, which is still a long way to go, but it's, it takes time through attrition that you can do that.… We will still get exceptions, because any of the people that are in modified lines, or unique lines in certain ways, they will maintain those. But ultimately, the FTEs that I will be left with will be 57 FTEs. I started with over 91 lines, and I'm down to 70. So I've eliminated close to 25 positions at this point. So even if the FTE doesn't look as good, most of the positions that will be

> left will be close to full-time positions, which is going to be a huge impact on people when they're being told that they have to go full time.

Marg, in spite of anticipating that eliminating part-time positions will "have a huge impact on people," continued to remove part-time lines as the ROP required.

Producing Inflexibility

Removal of "close to 25 positions" (Marg) created a situation for Marg's unit in which there were fewer nurses available to be called when patient care needs exceeded what nurses working could safely manage. While the total FTE remained the same, the actual number of bodies familiar with the unit and available to be called was decreased, as nurses who left part-time positions were not replaced in equal numbers. Marg activated the productivity discourse and eliminated opportunities for part-time work, in spite of her knowledge that the standard master rotation proposed by the scheduling team would eliminate some of her flexibility to respond to staffing needs by decreasing the complement of nurses available to come to work when needed. It was evident to me that Marg's knowledge of staffing needs was subsumed by the ROP.

The data showed that, latent in the everyday/night world of nurses and NMs, is specific local knowledge about what works for nurses, in terms of rotations and schedules; knowledge that is not immediately evident when reviewing a proposed scheduling plan. Knowledge not immediately evident includes NMs' personal understanding about an individual nurse's concerns about being unable to sleep during the day when scheduled to work three nightshifts in a row, or the concerns of a nurse working four extended dayshifts in a row when she knows her child care provider cannot keep her children after 5 p.m. and her husband is working out of town. Working the

schedule, the ability to trade shifts, permission to take leave for the last 4 hours of the shift, and how that might be accommodated by other nurses whose schedule provides flexibility to work the designated shift, are considerations that are important to nurses. The flexibility to meet individual needs, while not evident in texts such as the ROP, is evident when explicating staffing work from NMs' standpoint. The loss of nurses, which does not appear in the organizational view of productivity, is revealed by my exploration of the local organization of staffing work.

NM Marg put aside her material knowledge of what staff and patients need from rotations to focus on authorized knowledge of productivity and optimization, as well as the need to be seen as efficient. In the process of managing everyday/night operations and rotation development, Marg understood that she must avoid having too many nurses working any one shift. The imperative to use resources efficiently required her to work actively with the CNs, teaching them how to monitor and limit the number of nurses working, even if it meant going below baseline. Her push-to-the-limit use of front-line nurses was supported by her interpretation of the WMS, which, at month end, she could compare to the actual number of nurses working. The WMS covered over any traces of what actually happened on the shift, and why extra nurses may have been needed.

Existing between this proverbial rock and a hard place, Marg described conversations she routinely had with CNs, which exemplified how she was "captured" by the rationalities of the monthly statistics:

> Would you rather have 13 people, and not be busy, and then … [have a shift] where you require 16 people and nobody is able to come in? Which do you want? You want your availability of the people when we need it for workload.

Here Marg actively introduced rationing practices into the mindset of her staff. Marg took up the efficiency discourse, communicated through the rationalities of the MWR and WMS, to argue that just enough nurses should be working at any one time in order to have nurses available "when we need them for workload." However, as the CN noted in Chapter 6, when patients' care needs exceed the nurses' capacity to provide that care extra nurses are often unavailable.

Furthermore, while staffing levels are set based on the schedule and budget that are oriented to quarterly reports, my informants emphasized that patient care needs are unpredictable and do not necessarily align with the quarterlies, requiring decisions to be made in the moment—on *that shift*—about whether or not to increase or decrease staff levels to deal with patients' unpredictable and often complex needs. The authorized preplanning of the schedule does not take into account these fluctuating needs. While nurses themselves do not know how busy the unit will be on any given day, they can identify when complications are arising, when admissions are coming in too quickly, when physicians identify they have several patients being closely monitored in the community, and so forth.

Thus, the skills for rationing resources become an ongoing judgment wherein NMs must make decisions about cancelling staff nurses who do not own a line or sending casual workers home. This work relies on a ready supply of contingent workers prepared to be cancelled or called at a moment's notice—a contingency that Marg is actively decreasing by eliminating part-time positions. Marg is positioned to limit the number of nurses working to only those numbers that are needed in the moment—working to ensure

the numbers closely match the WMS calculations in order to demonstrate efficient use of resources.

Work to Increase NMs' Visibility – A Ruling Relation

Another AHS directive, the *Workforce Engagement Plan* (AHS, 2010), is a managerial strategy implemented following a workplace engagement survey to address issues of poor communication and lack of trust within AHS. The *Workforce Engagement Plan* directed managers to spend more time in "face to face contact with their teams" (AHS, 2010, p. 3) to improve "workforce engagement" (p. 3). How NMs take up this directive to ensure their units are being staffed with just enough nurses is demonstrated in my observation of NM Joan, as she worked through her morning. I witnessed NM Joan blending what she knows about nurses and patients' needs with her knowledge about how she is required to monitor resource use. While Joan herself seems to think that what she is doing as a part of her morning's work is to be supportive (well aligned with the leadership discourses discussed in Chapter 2) the following description and analysis highlights how her efforts to connect with and be visible to staff members also work as a ruling relation.

When NM Joan and I met outside her office she stated that she usually began her day by going to each of her units to touch base with the staff working there. Her office is situated in the corridor between the four patient care units for which she is responsible. As we walked through secure doors into the unit, Joan greeted several staff members working behind the desk, situated just inside the doors. These greetings included the CN, the unit clerk, and a staff nurse. Joan introduced me to the CN and asked about the "slate" for the day. The slate referred to a document that listed the women scheduled for cesarean

section deliveries in the Operating Room (OR) located on the unit. The CN indicated how many "sections" were scheduled for that day. This information provided Joan with an idea of how many nurses would be needed to work in the OR. Joan walked to the office of the SCs and introduced me to them. Down the hall we met and briefly spoke with the unit nurse educator.

Joan continued down the hallway to pick up her mail, greeting all staff members encountered along the way. She indicated that while the CN keeps track of what is happening with staff and patients, she likes to know as well. In a small room off the hallway, close to the front desk, was a wall-mounted whiteboard indicating which patients are in which room, the medical diagnosis of each patient, and their assigned nurse. The CN kept the whiteboard up to date, noting if a nurse was moved from one room to another, and assigning breaks so that the unit always has adequate "coverage." The whiteboard is a temporary text in the local setting. It is erased and added to throughout the shift. It is a working tool that nurses have developed to provide a way for the nurses on duty, in particular the CN, to keep *all* the patients in view.

The whiteboard functions as a key coordinating tool for each shift, which nurses refer to on an ongoing basis. Information considered relevant for this coordination work comes from texts that sit "behind" the whiteboard. These texts include nursing schedules (the names and number of nurses working), the patient admission database (patient information), and physician admission diagnosis (indicates what type of medical care patients are anticipated to need). These various organizational texts are used by the CN to make decisions about how many and what types of nurses are required to care for patients. There is also space on the whiteboard for four "overcapacity" beds—spaces with

beds in them that are used only when the number of patients needing to be cared for exceeds the number that the unit is built to accommodate. Patients who the CN expects to be discharged are flagged on the board with a green dot.

Joan explained how she uses the whiteboard to inform herself of what is going on in the unit in terms of patients and nurses. She checked the whiteboard to ensure that the required number of baseline staff have reported to duty. Her assessment of staffing levels required her to consider whether or not nurses on call could be utilized to expand the baseline staffing. In making these judgments she was aware that the nurses on duty need to take breaks and that if nurses do not get breaks or have to work "overtime" this too will be reflected in the monthly statistics. Her own knowledge of the work nurses are required to do during the shift was informed by her previous experience of front-line nursing, allowing her to fill in the blanks the information on the whiteboard cannot provide.

For Joan, all of this knowledge also provided a way for her to monitor the nursing labour being used as she made the mental calculations about whether or not to authorize call-ins and overtime or require that a casual nurse be sent home. She was looking not only at the immediate needs for the upcoming shift, but also for whether or not the personnel and patient care spaces were being used *efficiently*. However, along with an underlying focus on efficiency, Joan intentionally activated another discourse—one that is ideologically driven—a discourse of "being visible."

Work of Being Visible

By walking through the units, quickly saying hello to various staff members, Joan felt she was "connecting" with staff members. Joan stated,

> That personal connection is almost the most important thing, because you know that you can rely on somebody, or they can rely on you. It [being an NM] is an isolated job, so that connections very important for most people. I want to help people if they come to me; sometimes you can't help them, but if you can, that's important.

Joan's work of developing relationships with staff members, by being visible and acknowledging each one as she met them, revealed her intentions for her work. However, Joan's expressed description of being visible was also directed by AHS's (2010) *Workforce Engagement Plan*. Joan's work to connect with staff reflected this mandate; a mandate that increases the possibility that some NMs' walkabout will be an ideological activation of an engagement strategy rather than a genuine expression of interest and concern for their staff.

Joan, however, is convinced that her face-to-face contact, what I call relationship work, improves her leadership. At the same time, this relationship work is a source of deep contradiction, both for Joan and her staff, as there are limited ways she can act on the knowledge she generates during her walk. To show how Joan's genuine intentions are captured within the ruling (ideological) discourse, I present a looking-forward scenario, beginning with Joan's review of the whiteboard. She noted that there are already more patients who have been admitted than can be cared for by the number of nurses working. Someone would need to be called in to help. Talking with the CN confirmed her concerns for the day. The CN was tense, worriedly reporting that there were also four ORs scheduled; therefore, there would be the potential to need even more staff if an emergency (unscheduled) cesarean section was required. Both the CN and Joan were

thinking ahead and planning for what may happen. This planning work takes knowledge and experience. Thus, as well as being visible and making face-to-face contact, Joan was being made aware of the pressures and anxieties that were bubbling up among the nurses. It was apparent that the shift would be fraught. As in my own management experience, the nurses were poised to experience a day so demanding that their "trust" in Joan could be diminished and they may fault a "communication breakdown," insofar as Joan may not (cannot) adequately respond to the need for extra staff. In the face of workload demands that exceed available resources, Joan was very limited as to whether and how she can make a decision that supports the nurses.

Accountability systems organizing NMs' work. Joan cannot act on the knowledge obtained from being on the unit due to her knowledge of staff numbers that should be adequate to meet patient needs and are limited by the budget. The ruling relations of managerial technologies that organize the SC, CN, and NM to closely ration staff undermine the *Workforce Engagement Plan* (AHS, 2010). In my interview with the VP, she described how monthly she monitored the project outcomes of optimized scheduling.[83] The VP described the accountability system that the NMs are pulled into:

> We have workforce measurement [systems] that all the managers see every month. They [the data management system] will see what is your baseline staffing. Based on that, they'll have a recommended staffing. Based on a tool that is across the whole zone that the staff fill out at midnight every night, that says, I have so many patients, here's my, you know, there's definitions of what care is –

[83] Monitoring the effects of the engagement strategy was not a monthly part of the VP's focus.

x amount of minutes for this, x amount for that—*and so it kind of defines what the workload should be.*

This is the accountability structure that NMs are held to as they work to provide resources for patient care. The work NM Joan does to be visible on the unit and the knowledge she obtains while engaging with nurses' and their work is not recorded in the WMS, which is limited to capturing nurses' productivity, patient classification, and NMs' efficient use of resources. The VP's knowledge of NMs' engagement with staff is limited. She scans the monthly WMS documents to determine how NMs in Hospital A are performing compared to the amalgamated data obtained throughout AHS. These monthly documents devolve to other people throughout the organization as well, such as data analyst George (see Chapter 4).

This is where the AHS (2010) engagement plan is shown to be ideological. The stresses and pressures that result in lack of trust and poor communication require more than being visible. They need someone who can address the problems, not just follow the efficiency discourse as set out in the texts (such as the WMS) by which those in extralocal settings *know* nurses needs. The relational improvements—trust and improved communication—become an ideological practice when core issues of nurses concerns cannot be addressed by NMs.

Material knowledge of staffing needs. As part of employee engagement, obtaining input from staff and considering the impact of changes on staff members is important (AHS, 2010, p. 2). While AHS's *Workforce Engagement Plan* may be well intentioned, the authorizing voice of the WMS, MWR, and ROP overrule the material

knowledge of employees. Ironically, it is this material knowledge that is relied on to ensure that nursing units are running well.

As an example of the importance of material knowledge to staffing work, I present SC Jodi's talk of "filling the holes" that arose in the schedule.

> Sometimes it changes because people switch shifts. So people can switch shifts, but they have to have the same skills. Like the senior people can't just switch with the new staff because … they can't do OR, they can't do triage, or they can't do charge.

The reality of scheduling is that even when it is planned and all the positions are filled, things change frequently. Nurses are not equally experienced. Nurses often need to change shifts. When speaking of how she replaced sick calls, Jodi stated that her experience and knowledge of unit needs helped her determine what skill set was required.

> I've been doing this job for 4 years and you know who's willing to come in, … who's had the experience and stuff like that.… If you get a lot of senior people that are sick today, you have to find more senior staff, instead of just the new staff.

Jodi understood that the work she needed to do involved not only having access to the forms and programs on the computer, but also her personal knowledge of the nurses, their skillsets, and the needs of the unit. The work of filling the holes is complex and historically has required intimate knowledge of units and the mix of staff who work there.

In the past, NMs' leadership has been closely linked to their role and responsibility to ensure that nursing units are staffed. This happens within a discourse about recruitment, retention, and more recently employee engagement. Through their

work with building rotations, doing daily rounds, and knowing what is going on, NMs have been closely connected to nurses and patient care. As identified in Jodi's talk, material knowledge of nurses and their abilities is critical to making staffing decisions. However, this sort of decision making does not always align well with the increasingly complex technological data management systems and thus, within the tightening strategies to streamline rotations, monitor workload, and objectively determine a skill mix that is matched to tasks, the expert, subjective, material knowledge of NMs, SCs, and nurses is systematically overruled.

There is little published critique to suggest that the rationality of using managerial technology to determine nursing resource use is flawed. Focusing on productivity, as exemplified in the MWR and WMS, while at the same time emphasizing "employee engagement," creates an abstract ideological understanding of what is needed at the front line of patient care, knowledge that eliminates from view what those working on the unit know about what nursing resources are required.

Conclusion

In this chapter I have shown how NMs, such as Marg and Joan, activate ruling ideological discourses, such as optimization, productivity, and engagement. This language appears in various texts that organize NMs to think of and do their work in specific ways. It is through the efforts of the NMs that the institutional strategies for rationing nursing labour resources come into being. I have shown how Marg activated the ROP and Joan worked to improve employee engagement, demonstrating how NMs' consciousness is bifurcated—what they know from experience, from *being there,* is overruled by the authorized versions of the things that they *know*. I have also shown how

the discourse of being visible is an ideological circle, whereby NMs are organized to engage employees and at the same time are limited in responding to what they see and hear, as they are held accountable to demonstrate efficient use of resources. As NMs take up the authorized knowledge of managerial technologies they become the agents of institutional mandates that work to limit resources for patient care. In the next chapter I move on to discuss how the organizational mandate to "find savings" by changing staff mix further limits NMs' ability to provide staffing resources.

Chapter 8: NMs Organized to Find "Savings" – Introducing "Staff Mix"

In Chapters 6 and 7 I showed how institutional discourses are taken up by NMs in their work of staffing to limit resource use. In this chapter, I follow two such institutional discourses, the need to cut costs and the need to validate staff mix. I show how these discourses are ruling relations that underlie NMs' staffing work. I begin with NM Joan's talk about the information about baseline staffing that her supervisor gave her when she was hired into her management position. Joan stated, "You're given your budget, and your baseline staffing is this—this." This information shaped Joan's understanding that her staffing level and budget was set, and that she was required to keep the cost of staffing within the budget.

Looking to discover more about how the budget was determined, I discussed Joan's understanding of how her budget and staffing level was determined with the VP of Hospital A. The VP confirmed Joan's understanding, stating that while NMs could decide what the staffing mix would be on a unit, the budget was determined higher up in the organization. The VP explained how the budget was normally determined year to year: "So, historically they've said, 'Okay, here's your budget for salary this year.' You're going to get the same next year plus x percent for inflation, for example." The VP added another component to this budget decision, however, when she identified how, in her previous position as ED, she had moved money from one functional centre to another within her portfolio.

> I would make the decision as the ED to transfer funds around, knowing sort of what was happening in the departments. That one [pointing to a line in the spreadsheet] I knew they had a lot of growth, the patient volumes were increasing,

> they were over capacity, and their budget was showing me they were $500,000 negative. My medical colleagues were doing well, had $500,000 positive variance, so I would make a choice to move it. And I would communicate that with the managers.

The VP, while identifying those "higher up in the organization" were responsible for allocating budget amounts to the unit, identified that the ED can increase or decrease funds for unit budgets. NMs' budgets can be increased based on a perceived need. It can also be decreased based on reallocation of resources by the ED, or on a decrease in planned budget funding. How funding decisions become a ruling relation organizing NMs' staffing decisions is explicated in the following pages.

Alberta Government Funding Cuts

In 2010, the Alberta government made a 5-year commitment to AHS to increase the budget by incremental percentages in each of the next 5 years (Government of Alberta & AHS, 2010, p. 4). The government announced that beginning in 2010–2011 funding to AHS would be increased by "six per cent in each of the first three years and 4.5 per cent in each of the next two years" (Government of Alberta & AHS, 2010, p. 4). AHS's estimated cost of health care funding for each functional centre was planned within this budgetary framework. In 2012, Alberta's Ministry of Health announced that for 2013–2014 AHS would receive 1.5% less than had been committed and only 2% more the following year (Alberta Health, 2013). Minutes from an Alberta Clinical

Council (2012)[84] meeting indicated the Chief Executive Officer of AHS, in his report to the council, noted that the biggest challenge facing the organization was related to the "ministerial directives … and preparing for the overall budget increase … [that had directed planning] being reduced by 4.5% in years 4 and 5 of the budget cycle" (p. 3). The decrease in planned budget amounts put AHS into a deficit situation, necessitating all management personnel recalculate their budgets and make the required cuts to keep within the new budget.

The VP acknowledged that NMs had little flexibility to "find savings," as she had already removed money from their budgets in previous years. As an example of budget pressures experienced prior to the 2012 decrease in funding, the VP cited costs incurred due to AHS's contract with the nursing union. Nursing budgets needed to reflect increases in salaries while reducing overall costs. The VP noted,

> RNs got a 2% wage increase 2 or 3 years ago. We were never given budget for that. And so, it's like, "Here's your baseline budget. Find some savings to account for that 2%." So, that's at a government and our executive level.

NMs whose budgets were already stretched to cover these increased costs were compelled to find new savings when the promised increase in funding was not forthcoming.

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[84] The ACC "is a forum made up of approximately 60 front-line clinicians from a variety of disciplines. Applying their collective knowledge, experience and expertise, the council advises senior leadership on issues and opportunities to improve quality, access and patient safety across the province" (AHS, 2012a, p. 1).

Authorized Knowledge of Costs

When the Alberta government decreased promised health care funding, AHS's executive cut hospital budgets, and the hospital VP, after consulting with her team of directors and managers, made the decision about where budget cuts would be made in the areas for which she was responsible. The VP used information in a printout provided by the Finance department, depicting functional centre budgets and quarterly spending, to support her to make these difficult decisions. This was "information" that could help to justify the cuts. However, while it suited the VP's purpose to use budget and quarterly spending reports that the financial staff had been building (and considered reliable), it was evident from my observation of a meeting between an NM and a BAS Rep that these financial texts were not as reliable as the VP believed.

BAS Rep Peter and NM Mary were reviewing Mary's budget. The meeting had been arranged to address Mary's concerns that the financial statements for her unit were showing that she had spent significantly more than the unit's approved budget. Mary was disputing the figures. Peter pointed to a financial statement spreadsheet on the computer and indicated to Mary that they together needed to identify why she was "over budget" by $480,000. As the discussion continued, and they both looked at their respective documents, Mary at the unit rotation and Peter at the financial statements delineating how many staff members were hired at which FTE, they discovered that in actuality the financial statements had numbers that were incorrect, and Mary was only $120,000 over budget.

Peter's initial insistence that the documents he was referencing were correct slowly changed as together he and Mary identified the errors in the document and made

corrections. Mary had intricate knowledge about staffing, which nurses were in which positions, how many FTEs she had filled with RNs, LPNs, and HCAs. She referenced her rotation to show that the number of RNs on staff was different than what Peter had documented on his form. Whereas, for Peter, the FTEs were merely numbers, Mary could identify each person hired into a line in the rotation with a name. Peter had initially stated the details of the rotation were irrelevant to his work. He tried to dismiss Mary's insistence that the two documents had to be reviewed side by side. However, as they worked together he became aware of the role the rotation played in Mary's work of staffing as well as its correlation to the financial numbers with which he worked. What became even more important, in light of the VP's comments related to moving funds around, was the disparity in authorized knowledge related to funding and budget usage. Peter's stubborn insistence that his objective figures should "trump" Mary's material knowledge from working on the unit is a built-in feature of the functional centre budget reports and quarterly spending figures. It was only by chance and Mary's persistence that these serious errors came to light.

NM Knowledge Greater Than Authorized Knowledge

NM Marg explained how, in her work, a BAS Rep's understanding of financial documents caused a problem for her:

> The financial department too, I think is, and this is our BAS Rep. They really don't have an understanding of unit operations. It's about your funded FTEs.… And with this current [BAS Rep], out of our funded positions we had all these part-time positions that were being saved to make full-time positions.

Marg explained how she needed to work very hard to educate the BAS rep about how the FTEs were being manipulated during the ROP. NM Marg was working to incorporate budget cuts into her unit costs by keeping part-time positions vacant until she was able to consolidate them and create full-time positions to accommodate the ROP. These efforts had not been captured in the financial management system and, therefore, were unavailable to the BAS Rep during his work to find cost savings. The decisions the BAS Rep made were based on woefully inaccurate "facts" as Marg described.

> Well, in their wisdom they've decided that they're going to take money out of the unit clerk hours, and it had nothing to do with any of the workings that were being done and there was no explanation. Well no, that can't work—we need our unit clerk. [The BAS Rep] can't make a savings by removing those positions. So it's that lack of dialogue. I mean, I keep everything on an Excel sheet that shows the tracking number for … [each of] my inactivated positions. Everything is there, right down to the FTE it's at. And I really keep track of it. So when somebody tells me that this is what they've done, I think that's not playing in the same sandbox. You're not even dialoguing to say this is what your plan is.

Marg understands that the BAS Rep should have consulted her before making decisions that directly impact her ability to ensure patients receive care on the unit. However, with the limited electronic data available, the BAS Rep made a decision that negatively impacted the unit. His understanding is that the data present an accurate description of what is actually occurring with Marg's budget.

My IE analysis revealed that Marg's knowledge of her work of staffing and budget is greater than the knowledge collected and collated in the electronic records. She

organizes her rotations and empty part-time lines on an Excel spreadsheet that allows her to keep track of the movement of personnel in and out of lines in the rotation—a sheet that is not part of the electronic system that serves as authorized knowledge for others in the organization. This sheet functions as Marg's own record, or back up, to the electronic record and financial spreadsheet that collects only a specific type of information—the information the BAS Rep sees as numbers to be moved around. Marg produces a "safety net" with her sheet, one that she can use to produce knowledge that is absent from the BAS Rep's knowledge but critical for Marg to be able to justify staffing allocation on her unit. In order to have her material knowledge acknowledged within the ruling relations, Marg does extra work for when she, for example, is required to reconcile numbers in consultation with the BAS rep. There is value in the extra work, however, as it allows her to stand her ground when her material knowledge would otherwise be subordinated.

The financial record relied on by the BAS Rep produces a limited view of the complexity of this component of NMs' staffing work. Keeping her Microsoft Excel spreadsheet up to date allows Marg to identify when and where changes have been made, rapidly changing local information that is not easily accessible by others who utilize the electronic data collection system. The BAS Rep's reliance on the authorized knowledge of the financial texts cannot accommodate Marg's work of planning and implementing organizational initiatives that lay outside the "normal" work of staffing. Depending on financial documents for decisions regarding budget allocation, without checking with NMs to ensure those numbers do, in fact, reflect costs and needs, creates serious staffing issues and concerns at the unit level. Thus, even with the adoption of complex integrated

computer systems—the WMS, ESP, and the MWR (or perhaps *because of* them)—there are serious problems, as exemplified by Marg and Tori's experiences.

Work of "Finding Savings"

The VP explained the work to find savings in NMs' budgets. Her explanation provided insight into why the BAS Rep removed needed funds for NM Marg's unit clerk. The VP described how budgets were set and how savings were taken out of the budget:

> There's also savings that will come out of functional centres, which has happened over the last 2 years. Significant money has come out of each of the budgets (i.e., been taken out of the functional centres budget), and unless we could define it as a very clear initiative project, we [just] attached a certain percent to salaries and benefits.

Savings, as identified by the VP, were funds previously designated for a functional centre that were removed in across-the-board percentage cuts from the official budget documents by people in the Financial department within AHS. Each time funds were removed from the budget, a percent of those funds previously designated for salaries (such as overtime pay) and benefits, was also removed. In making these decisions the VP noted that she had consulted not only the financial documents related to unit budgets, but also with NMs and the EDs, requiring them to find additional savings.

NM Joan identified how this pressure to find additional savings impacted her work of staffing. Joan was under pressure to be "fiscally responsible." This was incongruent with her knowledge about the nursing staff and the unpredictability of patient care. Joan's bifurcated consciousness is evident in her question, "How lean do you let it go?" Joan understood that if she did not limit staffing numbers senior administrators

could “make decisions for us.” She noted, “It costs money to run an organization, but when you do something here it affects the health of people. If you run your staff ragged, they’re not making good decisions, and now you have people’s lives touched.” Joan struggled to find savings on her units, yet at the same time worried about running it lean. She rationalized that maintaining some modicum of control over the decisions was better than the alternative of having others, who did not know from local experience what was necessary for patient care, make decisions for them.

Joan’s bifurcated consciousness was also evident in her fight to reframe how she approached the work of finding savings. She stated,

> I’m not cutting, okay, but every day it’s the same conversation with the CN and the SC: “Do you need that many staff? Tell me—you justify to me why you need that many staff.” … How do you—that’s the big question in this area—how do you safely staff for an unpredictable workload?

Joan understood the work of nursing at the front line to be complex and unpredictable, while at the same time she consistently challenged the CNs to justify to her why they needed more staff nurses. Her focus on ensuring she was providing safe staffing was, in actual fact, a focus on how lean she could run the unit without crossing a line that may result in significant problems for patients and nurses alike. Furthermore, Joan’s knowledge of what nurses needed to keep patients safe was at odds with the need to find savings within her budget.

Strategies to Decrease Costs: Staff Mix and Overtime

In my research I found that one of the ways AHS focused NMs on finding savings was in relation to changing staff mix and decreasing the use of overtime. Through tracing

discourses of the right staff mix and nursing shortages in informants' talk and AHS texts, I provide an analysis of how the work of decreasing costs gets done. I begin this explication by starting with the VP of Hospital A, who assumed that staffing changes needed to occur and NMs needed to find the "right model of care."

"Improvements" and Strategies for Workforce Planning

The VP's talk, directing NMs to make staff changes that eliminate RN positions in favour of LPNs and HCAs, reflects discourses of the right skill mix and nursing shortages that are embedded in AHS documents. My research unearthed AHS documents that included statements such as "global health workforce shortages" (AHS, 2011, p. 62). It was assertions about predicted shortages in nurses that were being used as the rationale behind the reforms being implemented. Another AHS (2013d) report focused on a predicted shortage of nurses,[85] which made it a priority to develop a workforce plan that ensured sufficient care providers were available to meet the needs of the population. A further AHS document highlighted the need to maximize the skills and abilities of health care professionals, with reference to the "unique" aspects of their work:

> AHS must maximize the efficiency of the current workforce, engaging clinicians at the highest unique scope of their legislated practice and optimizing interprofessional collaborative practice to deliver the care and services required and improve outcomes. (AHS, 2013b, p. 5)

Following this line of analysis, other AHS documents suggested LPNs and HCAs are able to provide much of the care required of patients on acute care units (AHS, 2013b),

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[85] While AHS documents highlight the anticipated shortage of RNs in the near future, in a contradictory turn NMs are being organized to decrease the number of RNs working to care for patients.

care that in theory allows RNs to exercise their "unique" scope by removing them from the work of washing, toileting, weighting, and positioning patients.

I learned more about AHS's plan from a consultant hired to develop and implement the collaborative practice care model. The plan includes reconfiguring how RNs work, to ensure they work to "full scope," utilizing more fully skills and abilities that are unique to RNs.

> So when we look at full scope of practice for the different professions, so the RNs, LPNs, we looked at not only what are the tasks of the Health Professions Act that they're allowed to do, but also looked at it from a training perspective. What are those unique skills that they bring to the table as well in their scope of practice? (Consultant, personal communication, January 8, 2014)

Recommendations made by this consultant were that HCAs and LPNs, providing patient care within their scope of practice, would take on work that RNs used to do. RNs would be involved in other work that is focused on coordinating and supervising; RNs would, as a rule, be working at more of a distance from patients and their bodily needs. The consultant noted,

> When we look at the RN scope of practice, really those lower-level scopes of activity are tasks, right, so completing tasks. Where I see full scope of practice for an RN is in that higher-level thinking, that critical thinking, looking at the bigger picture, looking at the environment, the psychosocial perspective of the patient/family/community. So that broader sort of knowledge base that they bring to the table, and the leadership ability. (Consultant, personal communication, January 8, 2014)

Formulating and designating "lower-level scopes of activity" as simply completing tasks limits how RNs' advanced education supports their practice acumen gleaned through their hands-on experiences with ill people. Removing RNs from bodily-oriented work suggests patients' bodies are no longer the purview of the professional nurse.

The assessment and "noticing work" accomplished when providing bodily-oriented nursing care has, historically, been a critically important aspect of nurses' contribution to patient wellbeing. Adams and Nelson (2009) described this noticing work and what nurses do while performing these types of "tasks"—tasks to which nurses bring higher-level and critical-thinking practices.

> Nurses gain information about their patients not only by looking at their charts and listening to the words they say, but also by observing the strength of their voice, the color of their cheeks, the temperature of their hand, their gait as they are assisted to the toilet, their agitation at the prospect of treatment, and many other signs, which are often so subtle that they would go completely unnoticed by a non-nurse. The continual practice of these skills in observation and assessment gives nurses the individualized knowledge that allows them to monitor a patient's progress, plan their care, and head off crises before they begin. (Adams & Nelson, 2009, p. 15)

This type of complex work has only recently been recognized as worthy of a baccalaureate education (Canadian Nurses Association, 2003). The consultant's comments above highlighted AHS's assessment of RNs bodily-oriented work as tasks. The hard-fought battle to value the necessity for intellectually demanding bodily-oriented work has been economically devolved to workers who do not have the privilege of

university education and who are less costly than RNs.[86] In the organizational talk of right staff mix and finding savings, nurses are being portrayed as "too educated" to do the bodily work of patient care that some research suggested saves lives (Aiken et al., 2003; Estabrooks, Midodzi, Cummings, Ricker, & Giovannetti, 2005; Kane, Shamliyan, Mueller, Duval, & Wilt, 2007; Tourangeau et al., 2007).

Staff mix. In 2012 AHS committed to "balance workforce skills with need" by increasing the number of LPNs and HCAs in the system by 5% in 2010–2011 and by 8–10% in 2011–2012 (AHS, 2009, p. 14). AHS's efforts to find savings involved working to change NMs' knowledge of their staffing needs. NMs were encouraged to incorporate less-expensive health care personnel into their staff complement. As Joan's talk demonstrated, NMs' work of running it lean involved limiting the number of nurses available to work as well as consideration of the level of expertise required for patient care.

How this work of changing NMs' knowledge of staff mix requirements happens is the explication and analysis I begin in this chapter. This piece of analysis begins with the VP of Hospital A's use of the institutional discourses of acuity, safety, and right staff mix for the job. During our interview, the VP stated that she encouraged NMs to decrease the number of RNs working on their unit by incorporating LPNs and HCAs into their staff complement. "I have one manager in particular who had 100% … [RN] staff mix, and I said to her, 'You know, I want you to figure out a way to introduce LPNs to your team.'"

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[86] RNs' hourly wage in Alberta ranges from $35.78 to $46.96; HCAs' salaries range from $19.53 to $24.46; and LPNs' salaries range from $26.21 to $34.28 (Alberta Union of Public Employees, n.d.; United Nurses of Alberta, 2010).

The VP indicated this NM resisted change to her staff mix. The NM insisted that other NMs with units similar to hers also had 100% RNs. The VP countered that the resistant NM and others like her lacked knowledge regarding what the scope of practice[87] was of LPNs and HCAs. The VP said, "They don't think it's safe, because there's a lack of knowledge about what is scope, and who do they even engage to help make those types of decisions."

AHS (2013) *Vacancy Management Process* (first introduced in Chapter 4) also worked towards increasing LPN and HCA numbers by requiring NMs to consider whether a vacancy could be replaced by "a different classification of worker." Requiring NMs to find savings in their budgets—budgets that include no discretionary funds—requires NMs to change their staff mix. This is a major cost-savings strategy that requires NMs to consider cutting the most expensive staff, the RNs, to replace them with LPNs and HCAs. NM Tori's story of how this organizational directive impacted her hiring choices and became embedded in her work of staffing is presented in the following section.

Tori's story. Tori stated that, previously, her experience of working with patients and various types of nurses provided her with knowledge of the type of nurses needed on the unit. She recounted a situation that had arisen before the current emphasis on staff mix and the recently introduced pressure to replace RNs with LPNs:

> When I started … [on a unit] we had 12 nurses. The LPN/RN mix was quite heavy on the LPN side, I'd say 60% LPN and 40% RN. And many of the RNs

[87] Scope of practice is a discourse that is circulating within AHS and is used to convince staff members and NMs of the rightfulness of changing staff mix.

> would be … [working] in the telemetry units. So we noticed that there was quite a big burden on the RNs to support the LPNs, and the LPNs were frustrated that they kept having to run [to the RNs] to get things done that weren't in their scope, things like: giving blood; pushing [intravenous] medication; [managing] TPN [total parenteral nutrition], PCAs [patient controlled analgesia], and epidurals; pulling epicardial wires, things like that.… So there were a number of things they couldn't do and then they were frustrated. So, we put together a business proposal to change some of our LPN FTEs to RN FTEs.

Previously the staff mix had created difficulty for LPNs who did not have the education to care for complex patients and RNs who were being pulled away from their assigned patients to assist LPNs.

> Sometimes, the only RN on the floor—there would be RNs in telemetry—was the CN. And the LPNs would be coming to her to get things done, as well as the rest of her work that she needed to do, as far as managing who is coming and who is going, and who's on break, and which patients are being discharged, and which are being admitted. So that was quite difficult for her to be managing that. (NM Tori)

Tori noted that in advocating for changes to staff mix she used her knowledge from being on the unit and hearing from nurses.

> There were no numbers. There were situations that we used, including reporting and Learning Safety Reports.[88] So we identified that the LPNs really didn't have the scope—even though they worked to full scope, they really didn't have the ability to function as high as an RN did. So we needed more RNs on the unit than LPNs. So that speaks more to the skill mix than numbers.… So we've changed the mix quite dramatically—we're at 80% RN/20% LPN now, which I think is a good mix, a good balance on the unit.

Tori understood her ability to advocate for increased RN levels improved nurses' ability to provide patient care. She also knew that a nurse with a higher level of education had a greater ability to function on the unit and was better prepared to address multiple complex patient issues.

Impact of skill mix discourse on Tori's work. NM Tori was aware she would need to justify to her supervisor why she needed RNs on the unit, given the new focus on staff mix. As Tori spoke of her work of staffing, and deciding on staff mix, the discourse of right staff mix came to the forefront. Tori expressed concern that she would be questioned about her RN staffing level given AHS's directions to change staff mix on units.

> They're also talking about everybody working to their full scope and looking at designation—can an LPN do the same job as an RN—right? So I think that I'm flying under the radar, is what I feel like, in that they haven't really come to me

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[88] Safety learning reports are computer forms that nurses are required to fill out and submit when an incident occurs that harmed a patient or had the potential to harm a patient (i.e., a patient fall, a medication administration error, or the movement of a patient into a wheelchair when the brakes were not engaged).

> yet. And I think when they do come to me there's going to be a lot of questions. So I just want to be prepared that I have the right answers, to say there were issues before, there are fewer issues now. I have a staff that is more supportive of the patients—I think they are well cared for.

Tori did not think to use computerized reports available in the WMS, meant to assist NMs with making staffing decisions, to justify her skill mix. Tori's concern about having to justify her staff mix echoed the following comments made by the VP, providing evidence of the ruling relations organizing NMs' knowledge of staff mix.

Discourse of the "right staff mix." The hospital VP explained that planned budgets were cut and NMs were expected to find savings within their areas of responsibility by changing their staff mix.

> If a position became vacant they can choose to do with it what they want. So, they can say, okay, I have—and it's getting a little less flexible now because we are trying to find some savings so some money is gone—but, if they had $100,000, they have to determine what is the right use of that $100,000. Is it, you know, three … [HCAs]; is it an RN only; is it an LPN and an … [HCA]? What does that look like?

The VP indicated that while staffing is determined based on budget, if an NM wanted more staff members working at any one time, they could hire less experienced staff or those with fewer qualifications. No matter how well Tori "prepares" to defend her mix—it is constructed as her "choice." She can keep her RNs, but to do so she will have to reduce baseline staff.

The potential effects of having more individuals with less education working, however, is to produce situations such as Tori's, when the skill mix required the highest credentialed nurses and the established number of those nurses. Being asked to find savings within the allotted budget required NMs to remove required resources that had already been established. The staff mix changes resulting from organizational pressures to cut costs are, according to executives at AHS, to result in safe patient care being produced with fewer RNs. Moreover, AHS documents claimed that in spite of decreased RN levels quality patient care will be maintained or improved (AHS, 2013a).

The VP talked about the work processes she engaged in to alter NMs' knowledge of staffing needs, to encourage them to organize nursing work within a different model of care. The VP explained that NMs' decisions on which staff mix they required was a process of trial and error.

> So a unit might introduce LPNs, but actually, this wasn't the right number, so, I might have to back off, or, I might introduce one, maybe it needs to be three, but I'm going to stage it—introduce one and see how that goes, then introduce three.

This sort of trial and error is not simple. Each change requires the redevelopment of the nurses' hours of work, shift rotations, and days off duty. Introducing a change to staff mix requires the NM to initiate a rotation change for each introduction of a new position.

The VP indicated that NMs were hesitant to make decisions that altered the established ratio of RNs, LPNs, and HCAs. She recognized that requesting NMs to make rotation changes involved a lengthy organizational process.[89]

> I think the managers—maybe we've set it up within our organization ourselves—but they are sometimes fearful to make those decisions, one. Two, don't have the time or energy cause they're so overwhelmed and are doing so much work, that then to take on, "What's the right model for my team look like," that they just don't do it.

The VP's suggestion that NMs are not making staffing changes because they are afraid ignores the possibility that NMs know other things that are not accommodated by the organizational staff-mix strategy in response to the fiscal pressures.

As Tori noted, "I have a staff that is more supportive of patients—[patients] are well cared for." NM Tori knows the skill and knowledge level of nurses on her unit, which provides her with confidence that the unit staff are able to deal with patient care needs. Disrupting a system that is working well is not easy, especially when a trial-and-error approach is being suggested as the alternative. Fiscal pressures overwhelm the extensive experience that NMs have developed in ensuring there are enough qualified nurses to manage the inherent unpredictability of patient care. Institutional discourses related to changing staff mix by eliminating RN positions in favour of LPN and HCA

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[89] How this trial-and-error approach could be accommodated within the rotation optimization project and the attempt to introduce 48 "standard" rotations produces a contradiction in directions that NMs experienced.

positions are influenced by the availability of funds, or lack of funds, causing the right staff mix to be defined as the less costly staff mix.

Introducing a new ruling relation: Acuity "trumps" baseline. How AHS executives know about staff mix and acuity is through the authorized knowledge produced in the WMS. However, NMs know about staff mix and acuity not only from the WMS, but also from their material experience of the work nurses do to provide patient care. NM Joan's concerns about "the dark cloud of finance" and "how lean do you let it go" emphasized one of the core concerns that, in varying ways, all the NM informants described when they explained their work of staffing and the troubles they encounter as they address the tension between their accountability for limiting costs and their desire to support nurses' ability to provide safe patient care. Recall, in this key piece of data, what Joan said:

> A lot of my decisions are made with the dark cloud of finance over me because, … ultimately, I have to say what our budget is doing and why it's doing it. And when you're dealing with people, you're dealing with staff and their well-being and you're dealing with patients—and how lean do you let it go?

Joan was aware that reports produced through the WMS provide authorized knowledge of how effective and efficient NMs are in their use of resources, reports that Joan will be held accountable to and must justify in order to continue having some ability to provide nurses with resources to do their work.

Any person with access to the WMS can review the numbers and see that a unit has been staffed at, above, or below WMS-recommended levels. Administrators, such as my VP informant, are provided with this information. The VP explained how she was

using the WMS data to implement a new approach to staffing. She described how she was using the WMS to actively focus NMs' and nurses' knowledge away from prior conceptions of baseline staffing into a more flexible conception of staffing for patient acuity. Her knowledge of patient acuity on a unit is informed by the acuity index[90] embedded in the WMS.

Focusing on the relatively new capacity to (apparently more accurately) measure acuity data allows the VP to build more flexible rationing systems into day-to-day staffing practices. The VP stated,

> When we do grievances with the union, it always comes to baseline. And sometimes the front-line staff … [do] not articulate well enough why they feel it was unsafe. [The staff may say], "Well, we always have six on that shift." But, did you really need six? And was it actually an RN that you needed? What kind of care were you doing?

The VP's comment above questions nurses' knowledge of staffing requirements for patient care. Nurses know that working "short" on a shift may require ad hoc adaptations to normal routines. For example, they may have to adapt how many nurses are assigned to specific areas (i.e., postpartum, observation nursery, labour and delivery, etc.). The adaptations may create enough disruption and concern for patient safety that they deem the situation as worthy of initiating a PRC, which the union brings to the hospital management in the form of a grievance. However, the VP has what she believes is "better" knowledge and uses it to challenge the nurses' account of the shift. The VP's

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[90] The WMS produces an acuity index (i.e., how sick a patient is) for each patient.

assertion that "front-line staff …[do] not articulate well enough" reflects the authority of knowledge produced in technological systems, as it contrasts with nurses' knowledge about navigating a difficult shift. The VP's capacity to calculate an acuity index overrules nurses' experience of what it is like when the numbers of nurses drop below baseline.

On the Labour and Delivery Unit, where I conducted my first observation of an NM, I discovered an important component of nurses' work that the acuity index could not accommodate, which was the geographical distance between patient rooms and special care areas. Nor could it account for the experience and background of the nurses who reported for duty. The NM's scheduling work—organizing the lines to accommodate coverage with experienced and novice nurses, ensuring there is always a complement of nurses who are competent with deliveries, newborn babies, and teaching breast-feeding—is now being reduced to an acuity index that cannot accommodate the multiple variances among patients and simultaneously cannot be adjusted for the skills and experiences of the nurses. Just as the VP can challenge the nurses to be more "articulate" about what is going on shift to shift, the VP's authorized knowledge of the WMS limits what NMs and nurses can articulate. NMs' and nurses' material knowledge of their work does not appear in the authorized knowledge of the WMS, where "objective" knowledge, or the "truth," about what resources were needed resides (Diamond, 2006, p. 51).

Was it really an RN that you needed? The VP, whose focus is on resourcing the "right person in the right position at the right time" (AHS, 2012d, p. 8), asked NMs, "Was it really an RN that you needed?" The introduction of the WMS provides opportunity for administrators to obtain knowledge of what was needed on any one shift in staff of numbers of nurses as well as the scope of each category of nurse included in

the staff mix. Informant George, the data analyst, was working to draw data out of the WMS that would be used to calculate a "complexity" index for a unit's workload on any given shift. The WMS developers stated the complexity index could determine the level of nursing care required of patients and provide a recommended category of nurse that is expected to match patient acuity. The WMS, therefore, is being developed to provide the VP with authorized knowledge that the number of nurses and skill mix was "adequate" on a specific shift. This is a managerial strategy to match patients' needs to the appropriately credentialed caregiver. Put another way, contemporary staffing approaches are being developed to organize nurses into their component parts of "scope" and "skill," and patients into a "classification," which is a composite of their parts organized by tasks, in order to ensure that the least expensive nurse is available for the least acute patients.

The VP, in altering the focus from baseline staffing to patient acuity utilizes authorized forms of knowledge to overrule what nurses' know from being there. The VP noted, "Culturally, and as leaders, and within the union, we speak about baseline staff mix and models. I try to reword it, as *it's based on acuity*. What is the right staff mix for acuity, not baseline?" Within increasingly sophisticated workload and acuity technologies, the VP's accountability work organizes her reliance on abstract calculations that she uses to rationalize executive decisions and activities.

Material knowledge that lies outside of the WMS. Like staff nurses, NMs are sensitive to the hidden complexity and unpredictability of actual patient care. This is reflected in NMs' description of staffing: "We don't know what is going to come in the door" (Joan); "It's how you anticipate what's coming" (Marg); "You plan ahead, how many inductions, how many in labour, what is the work going to look like in four hours,

will we have enough staff?" (Marg). These remarks revealed the elements of skill that are actually needed to assess and predict what staffing needs are and will be. They are not the sorts of decisions that can be made quarterly, far removed from local sites of patient care. The number of inductions and number of women in labour on any given shift cannot be ruled completely by mathematical averages developed from large numbers of patients over time; however, this is what is being organized by the new managerial technologies of health care.

The distinctly different modes of knowledge that the VP draws on, as contrasted to the knowledge of nurses and NMs working on the unit, is made even more apparent when data on the work being done to run the unit are analyzed. A CN is assigned by the NM to be responsible for each shift. This CN is usually an experienced nurse who can be consulted when nurses encounter complex patient care situations and who is expected to ensure that nurses are getting breaks and so forth. As well as their duties related to overall organization of nurses and patients on the unit, the CN often also cares for a "stable" group of patients. One CN I interviewed, Barb, noted,

> If we have 10 staff, then we are too low. Like 10–11, barely covers us, because a day like today, we have six labouring patients at this moment, we have had at least our third OR. ORs are C-sections, or a retained placenta, or a double set up for a difficult delivery. But, normally, a C-section requires three nurses—one for patient care, one for circulating, and one to scrub—that is three staff tied up for the OR. So if you take three staff out then there's 11 left, you have two or three in triage, and depending on what kind of day triage is having, they might be run off their feet, literally, just having a revolving door. It's been that way a lot of days

> lately. If we have 10 or less we're scrambling. And see, an emergency C-Section after three o'clock, still requires three of your staff. So staffing goes down, you might still have a full board of patients, but you still have to cope with all these C-sections. Usually they would start calling in extra staff in the morning when our staffing person comes in, if it's looking busy and there are not enough people. Or they'll call on the fly. But really, when you're in the middle of a situation, you don't have enough time to call somebody.

The work of staffing the unit involves the NM, CN, and SC working together to plan for and anticipate staffing requirements in a complex patient care environment. In my experience, staffing on the fly is time consuming and, although the capacity to call in extra nurses has not been completely overruled by the preplanned staffing system, on the fly staffing has become increasingly difficult to accomplish and comes under excessive scrutiny within the new accountability systems. On the fly staffing increases the difficulty for nurses who are in the middle of the situation, especially when the complex series of steps required to call in an extra nurse does not result in needed help. In order to run it lean, staffing on the fly has become the norm rather than the exception, and this has consequences for nurses and patients.

Organization of Overtime to Find Savings – How Overtime Actually Happens

Recall BAS rep Peter's talk of cutting overtime to find savings, as well as NM Tori's talk of decreasing overtime costs by not replacing the first sick call. I now turn to a second AHS strategy, to decrease costs, which was to limit funds available to pay nurses' to work overtime. I show how removing overtime funds, as well as the complex set of rules instilled to hold nurses, NMs, CNs, and SCs accountable for overtime use, create

problems for nurses and patients. NM Tori noted, in attempts to find savings, a percentage of funds had been removed from the "relief" portion of NMs' budgets—funds designated to cover overtime costs. Estimated overtime costs projected in unit budgets are based on a certain percentage of salaries. NM Tori stated, "There's a certain amount of relief built into each employee position. I think it's 18% percent. So [on my unit] LPNs are at 8%, RNs are at 12%, and Nurse Clinicians are at 14%." NM Tori understood that normally a percentage of employees' salaries was available to pay overtime in the relief portion of her budget. However, due to cutbacks, this amount had been decreased significantly, depending on the type of employees on the unit. As an example of how the overtime budget cut impacted the work of patient care, in the following section I present the process of approving overtime as described by SC Jodi.

Work of approving overtime. SC Jodi, describing how nurses who were entitled to overtime pay obtained approval, referred to a form that nurses needed to complete.

> This other one [showing me a form], it's called the overtime. So overtime—they miss their break, the rest break. Then they'll fill it out if they came in early for their shift or they're staying after shift. So they'll fill out this form, and then they have to put the comment in. Charge nurses are … [the only nurses on the unit] allowed to sign it.

When a nurse misses a break due to patients requiring care, or when the unit is short staffed, the nurse is entitled, according to the union contract, to be paid overtime. On this unit, NM Marg had designated the CN to sign for overtime worked by nurses during a shift. This involved the nurse filling out the overtime form, ensuring the CN signs it, and leaving the form for the SC to pick up from her mailbox or dropping it off at her office.

Marg and Jodi relied on the CN to monitor the work of the unit nurses (i.e., who was busy, who had missed a break, why they missed their break, etc.). Delegating overtime approval to the CN meant Marg could ask the CN to justify any overtime requests she had signed. The CN was delegated the job of ensuring nurses received their breaks, that they received extra support when needed, and that the unit functioned efficiently and remained cost effective in its use of resources.

Requiring the CN to justify overtime to Marg ensured she in turn required nurses working at the front line to also justify asking for overtime. As Jodi explained, nurses needed to provide a reason for requesting overtime before it was signed by the CN. The top-down requirement to justify overtime shifts nurses' focus from ensuring a patient received the care they needed to a focus on not having to request and justify overtime. Staying within the budget—a budget designated by someone somewhere who estimated that it was sufficient for the care patients require—became the ruling relation that organized nurses and NMs to limit the amount of care available to patients. I am not suggesting that this sort of claim for overtime should not be accounted for, but rather that nurses and NMs, by being required to complete documents to justify their work, are organized to justify cost, as opposed to providing needed care in situations that are determined by texts such as the MWR as decreasing unit efficiency.

While the CN was authorized to approve overtime incurred by nurses working the shift, SC Jodi approved overtime for nurses she called in. Jodi noted, "If I bring somebody in, come in early, then I'll sign it myself, because I know I called her in, or asked her to stay after, or [she came in on her] designated day off." In talking about how she worked with the NM, Jodi noted,

> If there's anything that I need to know, she'll email me, or she'll come and talk to me about it, or if there's a problem with the staffing I'll come and talk to her about what I need to do. For overtime as well, it's the same thing, [the NM] still needs to approve for overtime. It really depends on the unit. If the CN really needs extra staffing, then I'll bring people in for overtime.

When questioned if she needed to obtain approval from the NM before approving overtime, Jodi stated, "I'll just tell her, 'I can't find anybody to come in for straight time. I can find this one person to come in, but it's overtime.' She'll … [say], 'Just bring them in.'" While Jodi stated she would sign for the overtime, she only did so after she had discussed the situation with the NM and received approval to offer the overtime to the nurse. Working together, the NM and SC attempt to limit the use of nursing resources to ensure minimally safe standards are maintained while at the same time staying within the budget.

NMs' ability to find savings by limiting overtime. In her work of finding savings, Marg needed to consider texts, such as the union contract. NM Marg explained that while it was usually clear who was entitled to overtime, there were some negative implications for staff members and NMs when following the union contract.

> A really good example is there's a person who was casual and now she has a position, part-time position. In casual, she can pick up 8 or 12 … [hour shifts], it doesn't matter, but this position is an 8-hour line. So, if she picks up a 12-hour … [shift], which she likes to do, we have to pay her overtime for 4 hours. So no, you can't pick up 12s.… Well, then you have to find someone who is in a 12-hour.

> Might be a casual then in that case. Or, if you have to, okay, "Could you stay 4 hours?" but it's at overtime.

Aware of the cuts to the overtime budget, Marg believed she should not offer work to this person, as the union contract stipulated that she had to pay the nurse overtime for the last 4 hours of the shift (UNA, 2010, p. 13). In attempts to limit overtime use, Marg and the SC actively sought to bring in a second person at straight time, choosing to split a patient assignment between two people over a 12-hour period. This required an additional patient handover with a nurse who stepped in for only 4 hours. Despite Marg's apparent logic of being fiscally responsible that supports this approach to overtime use, increasing the number of nurse handovers within a shift increases safety concerns for patients and nurses (Drach-Zahavy & Hadid, 2014).

The AHS executive, believing that NMs are not vigilant enough in managing staff and limiting the use of overtime, forced their hand by deciding arbitrarily (not based on any hard data)[91] to remove funds to pay nurses who gave more of their time than they had contracted to give, thereby increasing NMs' focus on their use of overtime. However, the process of approving overtime, as noted above, ensures that nurses are already being held accountable for overtime requests, being asked to justify the use of overtime each time it is paid. Arbitrarily limiting funds to pay for overtime costs increases nurses' focus on

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[91] I am not suggesting that the "hard data" generated within the managerial technologies should be used to make the decision to cut the relief funds—that would undermine my overall critique of these technologies. However, I am underscoring the ongoing inconsistency that my research uncovers: how the managerial technologies are consistently used to govern NMs and to hold them accountable to their day-to-day decisions, while the executive-level decisions are not similarly held accountable to the WMS-generated data. My institutional ethnography has discovered that the executive-level decisions related to nursing resources are often carefully thought out, but nonetheless arbitrary pronouncements based on fiscal pressures.

justifying overtime use instead of focusing on providing required care to patients. This is one example of how nurses and NMs are directed to focus on the institutional discourses of overages and the budget, overriding knowledge of the needs of patients and their requirements for care.

Authorized Knowledge of Overages Used to Create Discourse of Inefficiency

When NMs go over budget, others in the organization judge them as inefficient and implement remediation strategies. BAS Rep Peter (in the course of my observations of NM Tori's work) provided me with an example of his remediation work.

> Well, in April we also do reconciliation, and we look at changes to the budget. So there are savings issues, there's contingency money that's added for cost pressures, that kind of thing. And everything gets entered into the system and there's a whole bunch of savings. So you have to go into the system and put so many negative FTEs to take that money out.

When asked how taking FTEs, or staff positions, out of the budget worked for the NMs, BAS Rep Peter noted,

> [The NMs are] already hundreds of thousands over each year, and they [administrators] take more budget away. I'm not quite sure what they hope to achieve by doing that. But they also have their own view that, "Oh, well, they're being *inefficient* so they can still do the same work with less money if they were being *efficient*. So it's the managers' fault."

Peter understood that AHS executive members laid the blame at NMs' feet for going over budget when unit budgets were cut.

To be seen as efficient NMs need to decrease the cost of providing patient care. This requires them to look at the cost of supplies or at decreasing staffing costs. The portion of the budget assigned to cover nursing costs is much greater than that designated for supplies; therefore, nursing services are typically looked to first when initiatives to save costs are implemented. As the BAS Rep indicated, any time money is removed from a functional centre, funds allocated for staffing are also removed, thereby decreasing money available to pay salaries on a unit. Therefore, cutting the budget results in the need to decrease the cost of staffing or go over budget.

The end result of the decisions to remove funds from acute care is that NMs are required to reorganize their units by removing staffing positions, changing staff mix, and redoing nursing rotations. At the same time NMs are removing resources they are expected to ensure nurses continue to provide safe patient care. Despite NMs' efforts, my analysis shows that, ultimately, the WMS supersedes what NMs and nurses *know* from their work in the setting. The WMS organizes a different form of knowledge that subordinates NMs' knowledge about what is actually happening. Despite this subordination, some NMs are occasionally successful in flying under the radar, or creating their own safety net, finding ways to act on their own knowledge about what is required on their units. The ability to fly under the radar could be fleeting, however, since the distinct possibility remains that "decisions might be made for our unit if we don't run it lean" (NM Joan).

Conclusion

My IE analysis revealed that NMs', SCs', and nurses' knowledge of the work of staffing is different than the knowledge collected and collated in managerial technologies

and is depended on to keep patients safe. Take for instance the BAS Rep's reliance on financial texts that could not accommodate Marg's work of planning and implementing organizational initiatives, which lay outside the normal work of staffing. I have also shown, despite their greater knowledge of staffing, NMs are being organized to focus on changing staff mix in efforts to cut costs. Institutional discourses related to changing staff mix by eliminating RN positions in favour of LPN and HCA positions are influenced by the availability of funds, or lack of funds, causing the "right staff mix" to be defined as the "less costly staff mix." I have shown how discourses of right skill mix and finding savings are ruling relations that draw attention away from the fact that less costly and less educated staff are being used to replace RNs on patient care units. In the organizational talk of right staff mix and finding savings, nurses are being portrayed as too educated to do the bodily work of patient care that some research suggests saves lives (Aiken et al., 2003; Aiken et al., 2002; Salvador et al., 2012).

No matter how well Tori prepared to defend her staff mix, knowing what worked for her unit, she understood that she would soon be pressured to change that mix. The VP constructed staff mix decisions as an NM's *choice.* Tori could keep her RNs, but to do so she would have to reduce baseline staff. While the VP rationalized that staffing changes were difficult and that NMs were afraid to make changes, my research revealed that NMs like Tori know the staff mix she has can be relied on to keep patients safe. In my research I have shown how contemporary staffing approaches are being developed to organize nurses into their component parts of scope and skill, and patients into a classification, in order to ensure the least expensive nurse is available for the least acute patients.

NMs' work of ensuring enough nurses are available to do the work of patient care involves much more than merely ensuring shift to shift that there are enough competent hands to do what needs doing. It must be preplanned, always with a focus on baseline, ensuring there are never too many nurses. This preplanning that NMs do requires complex rotations, knowledge about what happens on the unit, and insight into when and how nurses' work is needed and accomplished. I have shown how NMs take up the knowledge of staffing in managerial technologies to carefully plan nurse schedules so there is no time in the day and no day of the week when there are extra staff.

Chapter 9: Planning for the Needs of Patients

The systems in place that organize NMs to focus on the interests of the efficiently run organization have implications for patient care. In this chapter I use an extreme example to show how the work of one NM, Marg, who incorporated several AHS initiatives into her staffing work, seriously undermined how she could apply her nursing knowledge to ensure that the unit ran well. The opening of a new hospital (and the complexities that introduced) exemplify how two organizational initiatives, rotation optimization (discussed in Chapter 7) and staff training,[92] intersected with Marg's work of vacation planning. The end result of Marg's mandated attention to union contracts and project directives collided with her planning for the new hospital and created a serious shortage of nurses available to work on the unit. While Marg's involvement in training staff for the new hospital is an unusual situation, I include it here because it highlights the ruling relations of the ROP as it plays out in one NM's work. What this explication exposes, in a raw form, are the ruling relations that I have been describing throughout this dissertation. It is a compelling example of how NMs develop strategies to mediate organizational directives and initiatives at the front-line of managerial work.

Staff Training

Training new employees is part of the planning work NMs undertake to staff their units with qualified personnel. NM Marg explained that her ongoing work of hiring staff was increased due to a need to train "extra" nurses, those hired into temporary lines, in

[92] The main focus of the rotation optimization initiative is to eliminate part-time lines, while the training initiative involves educating nurses for the opening of a new hospital.

preparation for opening a new hospital. It was work that eventually collided with AHS's ROP, leaving her with a decimated staff and seriously undermined morale.

To meet the anticipated needs of the new hospital the AHS leadership established a plan to provide temporary funds for NMs to hire and train extra nurses.

> We did all the training and it started as of August of last year. Okay, so there were prehires and then there were … [new hospital] hires. So there were 18 people in those … [surplus] positions. And they weren't hired for them [the new hospital]; they had to apply for the positions. That was the unknown. (Marg)

Marg hired 18 nurses into temporary positions to increase the number of Labour and Delivery Room nurses available within AHS, producing what AHS understood would be an excess of skilled nurses from which to hire for the new hospital. The goal was to not go short at existing hospitals when staff moved to the new hospital. However, how many nurses would eventually be hired from Marg's unit at the new hospital was unknown.

Marg understood that she needed to know which positions were permanent and which were temporary, as her temporary funding would not cover permanent positions. In efforts to be mindful of the budget and the unit's "normal" rotation and funded staffing positions, Marg created her own staffing board. Pointing to a cardboard panel leaning against the wall, Marg stated,

> This was our main rotation—these positions here [points to top of panel]. All these positions here [points to the lower half of the board] were hired as prehires or new hospital hires. So there were 18 positions here that were actually not funded—and here, on the back of the board are the temporary positions for the new hospital.

When Marg spoke of "funded" positions she was referring to her base-operating budget that includes only permanently funded positions. Temporary funding was provided by AHS for the 18 positions that were not funded, or not included in the base-operating budget. Nurses hired into positions created by the initiative to staff the new hospital received wages for a time-limited period and were classified as being in temporary positions according to the union contract (UNA, 2010, p. 2).

To keep the temporary and permanent positions separate, Marg taped paper copies of the rotations on different sides of the board so that she had to turn the board over to see the temporary positions. The process of negotiating how to manage temporary positions, who belonged in which line, which line was permanent and which was temporary, and how she anticipated what would happen in the future all impacted how she filled her lines *and* how she made staffing decisions shift to shift.

Marg's effort to make a "rotation board" was a strategy she developed to ensure that the complement of trainees to experienced staff was well balanced. Marg knew that it is possible to have too many people working each shift. While nurses most often report working short, there are times (in my experience) when nursing students, medical trainees, and new nurses being oriented are present on the unit and generate a general chaos that jeopardizes safety. Marg adhered to the rules for scheduling established in the collective agreement when making decisions related to scheduling temporary trainees. She also ensured she stays within the allotted budget for each budget period. Despite the introduction and expense of complex computerized systems, expected to support scheduling, NMs like Marg continue to develop informal tools that capture their knowledge gained from being there; knowledge unavailable in computerized systems.

Eliminating "Extra" Lines

While the unit rotation provided Marg with the authorized knowledge of staffing, it did not provide her with details about whether the staff on duty would be able to manage the unpredictability of the workload. For this she needed to know her staff: who, among the nurses on duty, is experienced and familiar with the unit; who is competent in multiple aspects of the work and able to manage orienting and training a nurse while carrying a full patient load; and whose workload can be altered to accommodate the emergencies that arise. Marg is positioned inside competing knowledge claims, the knowledge provided by ruling relations (such as baseline staffing, the union contract, and organizational initiatives aimed at increasing efficiency) and her own knowledge obtained from working with nurses.

According to Marg, in this particular situation many of the nurses hired into the temporary positions did not end up applying for a position at the new hospital. AHS's plan to train nurses for the new hospital seemed to be well thought out on paper; however, as frequently happens, the plan did not work out as expected. Furthermore, the new hospital did not open as planned, so funding for the temporary positions had to be extended, ultimately requiring Marg to absorb some unanticipated costs into her budget. "They were funded for a little bit longer, because orientation happened, and what happened is a lot of people—I probably had the most to absorb, but I had to take them into the funded positions." Marg and other managers she worked with were asked to absorb those who remained into their permanent rotations.

> When we were asked to absorb, people … [other managers] had filled all their vacancies as they went along. I knew that these 18 positions were not going to be

> staying, because they were [only] funded until the end of March. I knew I had to do something. Nobody told me I had to do it—I just knew that they were unfunded positions after that point.

Marg understood from her years of experience working as a manager that funds for temporary positions were, in fact, temporary. She would be required to go back to her baseline staffing numbers. To plan for this she recounted,

> So I never posted any of my vacancies. And I was able to then [keep my active positions] under the funded positions. I've got 54.8 [active FTEs], and I'm funded for 57. So I'm under the funded positions because I am also trying to work towards full-time positions.

"Active" positions are lines in the schedule that are assigned to a specific nurse.

Marg, accountable to the ROP, intentionally did not hire nurses into vacated part-time positions. By the time the temporary funding came to an end, Marg had a number of empty lines. These holes in the rotation were staffed with casual nurses, part-time nurses wanting to pick up extra shifts, or one of the extra nurses newly trained. Marg expected to continue her ad hoc staffing process until all part-time positions were eliminated and new full-time lines developed and filled.

In this way, she also worked to accommodate the nurses who had been hired into temporary lines, and to ensure resources invested in training them to work within the unit in turn benefited the unit. Marg responded to the request to absorb the temporary nurses by hiring them into vacant permanent positions that were part of baseline funding as they became available. The rationale for this manoeuver was motivated in part by costs incurred by AHS and Marg's use of nursing resources (such as the educator, preceptor,

CN, and other nurses time) to train the new nurses, and the challenge of hiring qualified people. Pointing to the board again, Marg stated,

> So, the only way I could do it, if you see the orange ones there, those are vacancies. Those are vacancies that were removed in order for me to actually keep the ones that [were in temporary lines] – six went to [the new hospital]. I had to find a way of bringing them [the ones remaining] into my main rotation. In the end, you have to balance out what's going to be left, and you have to not go short, like the problem for us was that we had to absorb these positions *but we had also given vacation*.

Marg did not know which of the nurses would apply to move to the new hospital at the time that vacation was assigned. She stated,

> And so vacation planning goes ahead, and you grant everybody the vacation, then you have these new needs, because, as people move, you don't know that they're moving till they move. So officially, they don't move until August 15th, but we've also had to bring them back, and do orientation of different things. So it's been a very complex environment.

Marg was held to the union contract (UNA, 2010) related to posting the vacation planner and granting vacation requests. As the temporary nurses were also entitled to vacation, they needed to be included in the vacation planning process and given time off as requested. However, the unknowns related to staff movement produced for Marg and nurses working on the unit a significant amount of uncertainty about how many nurses were available to work in the coming months.

Approving a Shortage of Nurses

The ruling relations of baseline budget and rotations complicated the organizational initiatives focused on training new employees and removing part-time positions. Marg's work of incorporating these initiatives into the already existing rules and regulations that orchestrate and coordinate her work of staffing resulted in an inability to facilitate adequate nurse staffing. Marg's work of implementing these initiatives was further complicated by the vacation planning process as set out by the United Nurses of Alberta (2010) collective agreement. The union contract (UNA, 2010) and AHS's HR Vacation Policies require NMs to ensure employees receive their vacation entitlement each year. Below I provide a detailed explanation of how vacation planning went ahead on Marg's unit, in spite of the multiple anticipated transfer of staff to the new hospital that was opening in the summer.

The SC is a key worker in vacation planning. SC Jodi outlined the process of assigning vacation days. On this unit it is Jodi's job to post the "vacation planner" by January 1st each year and remove it on March 15th. These are dates designated in the union contract (UNA, 2010). The vacation planner consists of a table with the months from April to March running across the top and the names of the over 60 nurses working on the unit listed down the left side. Nurses working either part or full time in permanent or temporary positions are entitled to vacation.

Between January 1st and March 15th these nurses enter their vacation requests in the column beside their name, under the months that they want to take their vacation. They enter specific dates in the box under the month. The union contract stipulates that the NM establishes the rules for how many nurses can be off on vacation at any one time

—most often this is a ratio of the total number of nurses working. The union contract also determines how many vacation days each nurse is entitled to take during the course of the year (UNA, 2010). After the first year of work a nurse receives 15 days of vacation, and receives yearly increments until they reach 30 days per year at 20 years of service.

Once the posted planner has been removed the NM must approve or deny the requests by April 30th, when the vacation schedule is posted. The United Nurses of Alberta (2010) contract states that when too many nurses have requested the same day off, seniority on the unit is the deciding factor. Once the vacation planner is taken down and the SC and NM formally assign vacation days, emails are sent out notifying employees to check their work schedules. The NM and SC Jodi were both careful to abide by the United Nurses of Alberta contract.

Jodi clarified how vacation planning further contributed to the shortage of nursing staff in August. NM Marg had instructed Jodi to grant each nurse the exact vacation requested as much as possible.

> So, as you can see in July and August, June as well, look how many people are requesting vacation! [Twenty-one people requested vacation in June, 38 in July, and 39 in August]. So, next year, if we don't approve everybody's vacation, we go with seniority. That's what it says in the contract. They have to go with seniority.

NM Marg had not invoked the contractual clause to limit the number of nurses who were off during any one shift. Jodi stated, "We've been approving everybody's vacation because they do the survey, they have so many vacation hours in their bank*, and they have to use it before the end of the year*, if not they get paid out."

Marg's decision to grant vacation days was directed by an organizational text, a memo from HR. The memo was written to address "confusion … for vacation payout vs. vacation carryover." The memo explained that vacation carryover includes vacation days earned but not taken before the end of the following year. As wages increase from one year to the next, the employee is paid at a higher rate if vacation is taken too long after it is earned. The memo stated that approval is required from the hospital VP for an employee to be paid out for greater than 5 days of vacation not taken in the previous year (the employee would receive money instead of days off). If more than 5 days of pay out was requested the Executive VP needed to approve it. If an employee wanted to carry over up to 5 days of vacation to the year after it was earned, the manager could approve it. Any vacation carry over requested that was greater than 5 days required the ED's approval. The requirement to obtain approval for vacation carry over or pay out brings the NMs' management practices under close scrutiny by those she reports to.

This memo, combined with the union contract (UNA, 2010), the budget, the training initiative, and the ROP, are texts that NM Marg took up to organize decisions around vacation planning. The end result for Marg of taking up these organizational texts was that in July and August she approved everyone's requests for vacation, thus eliminating the need to carry over vacation days to the next year, thereby limiting the cost of those days.

> Well because we knew that people were going to be transferring to [another hospital], we knew people from the other hospital were taking holidays, which we didn't grant—that was their staff to do it—eight people went. But at the same time we had to grant all of our vacation by the end of March. We had 18

> pregnancies … [among the staff] that also left at that time. So we knew that we were in trouble. Because we were not able to hire at that time because we still needed to remove positions.[93] So, having all that said, you know that you might as well grant holidays because you're going to be left with the burden of holidays and staff that are unhappy. Some staff will actually leave. So, the decisions you make have to be with the knowledge that there's going to be some impact. You hope for a not busy August—but it wasn't—it was very busy. (NM Marg)

It was apparent that Marg was caught in a situation where she could not make a good decision for patient care. The only way that she could move forward without mere "hope" was with extra resources.

At the same time that she knew resources would be scarce due to vacation, Marg was required to reduce those resources even further. The ROP required her to delete part-time lines and "condense" the staff schedule into fewer people working largely in full-time lines. Marg knew that the sum total of available staff would be reduced, even though, according to the theory of the optimization project, the actual staff available to work would be the same. The optimization project could not accommodate the nurses' vacation and maternity leaves. Moreover, neither of these systems could accommodate the knowledge that summer is a time with more vacation requests than most other months of the year.

Marg's hope that August would be quiet was the only option available to her—and when August turned out to be madly busy, it was Marg who was at the centre of both

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[93] This comment is referencing the work of amalgamating part-time positions into full-time lines required of the ROP initiative.

the nurses' and administrators' consternation. By minimizing the cost of paying out vacation time, while at the same time giving nurses what they were entitled to and had requested, Marg hoped to decrease the risk of nurse dissatisfaction and the administrative hassle of rolling the vacation into the next fiscal year. However, the ruling relations of the union contract, the budget, the HR vacation policy, and new staffing initiatives resulted in a shortage of nurses available to work over the summer months.[94]

NMs' Organized to Limit Staffing Resources

Marg's work of vacation planning provided evidence of how the institutional discourses and initiatives that NMs activate impact patient care. Marg spoke of how she followed organizational directives, specifically the union contract (UNA, 2010) and the ROP, when adjusting the unit nursing rotation. Referencing her staffing work and the MWR, she stated,

> Even the workload stuff, you can get the numbers and the [MWR], and you can go to those reports and get a quick answer, but you still have to know why that happened. So for example, now it's overtime in August, we had lots of sick time, we had minimal staff, and we had a very heavy workload. That's all you need to know—those are the basics. And were some shifts more than others? Well, it could be, but that really isn't very important. It was across the board, and we knew that August was going to be difficult. So, it's how you anticipate what is coming and then to be able to know that you are going to have that variance in your report—and you're just going to have to answer to it.

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[94] This situation further emphasizes the fundamental limitations of the workload management technologies designed to eliminate subjective practices from staffing work.

Marg understands that the MWR aligns in important ways to what has happened, but she also knows the report does not tell the whole story, nor does it really support her work of ensuring there are enough nurses on duty to accomplish the necessary patient care. Moreover, the report becomes something that she has to "answer to," as she has to justify and demonstrate that the overspending of resources reported in the MWR was not due to her own poor management. Even though this situation is an exception to "ordinary" staffing demands, the point being made is that the NM is held accountable to organizational decisions made distant from her unit and that do not "line up" with the busied world of patient care on the unit.

As the unit's vacation requests made by nurses were all approved, there was little flexibility to grant vacation days after the April 30th deadline. This lack of flexibility impacted nurses' practice during the summer months. A CN commented,

> And we had a very slim summer in staffing. People got their holidays, but there's no replacement, so you always have a busy time in summer, you can bank on that, and we run short, so we do always run close to what's safe, what's unsafe, and that's the scary part.

Granting all vacation requests in efforts to retain nurses and keep morale and engagement high (Chapter 7) backfired on NM Marg, as it left her with little to no flexibility in accommodating urgent needs for time off that arose in nurses' lives.

> Every year it's always different, you know, people go off on [maternity] leave early, because there's something wrong with their pregnancy, or people want to come back early from maternity leave, and people are going off sick, WCB [Workers' Compensation Board], those are the things. You just never know

> what's going to come—when people hurt their back, or they can't do this or do that, it's hard.

Not only are there short-term daily consequences of large managerial initiatives for nurses and patients, but there are also longer-term impacts for recruitment and retention. SC Jodi identified the toll that the summer took on the staff and the time required to replace high attrition.

> Quite a few people left their line—they want to find another job, or they want to just stay casual, so, it takes time to post that line. It takes 10 days to post it, bring it down, see who's qualified to get that job, what if there's nobody else but that new staff, then of course you're not going to be counting her for at least 4 months, because they have to do their orientation, right? So, that's another blank, so it happened to us this summer. But we tried to hire people with experience so it would be easy for them to learn. Every year it's different.

The multiple impacts on the ability to staff to baseline or beyond are evident in Jodi's talk. Not only do nurses need to be replaced because they are away on vacation, but also because they may have taken a position elsewhere and resigned their position with the unit. Another reason is that in the ongoing quest for nursing work-life balance, staff may have resigned their permanent position to take a casual position.

Nurses' Knowledge of "Safe" Staffing Subsumed by Authorized Knowledge

Eventually, NM Marg reverted to her prior status of baseline, but she was left with 12 very junior staff. The staff continued to report troubling situations. However, despite Marg's loyalty to and insight into the nurses who work for her, her efforts to maintain baseline above all else provided justification for dismissing nurses' concerns

about staffing levels. Adhering to the authoritative view of baseline staffing and its fundamental adequacy, she said,

> But there's a misfit to really understanding what was going to happen with these positions. People believed that all of a sudden, they had 16 or 18 people on shift every day. [Then] you go back to your baseline. All of a sudden, people are pretty miffed, because now, we're short staffed—it's unsafe.

Here Marg's knowledge that the unit is back to baseline provides a way for her to characterize nurses' worries as a "misfit" in their understanding, while her own knowledge about baseline (regardless of the 12 new staff) is oriented to the ruling relations of her managerial interests in the budget. Marg understands that because the nurses have become used to working with 16–18 nurses each shift, they now believe baseline staffing to be insufficient to accomplish the required work. Marg refuted the nurses' talk of sufficient staff by referencing her knowledge of baseline and budget—the authorized knowledge that supersedes nurses' material knowledge.

As Marg's knowledge is subordinated to the managerial technologies of the MWR and the WMS, so too is she organized to subordinate nurses' knowledge to her own use of the accountability systems. Marg is organized to challenge the nurses' knowledge of their work and what they consider safe staffing levels. However, for the front-line nurses, something has shifted. Having experienced a period of having enough nurses to deliver what patients need from nurses, it is difficult for the nurses to return to running it lean. It is up to the NM to mediate the rationed care (and its rationality) back into the nurses' own understanding of what is necessary. The extra nurses who can step in during emergencies, spend more time supporting breast-feeding, or respond to the

unpredictable influx of patients are no longer available. Baseline inserts the "just enough" strategy that does not provide for the flexibility of back-up nurses.

Nurses find working at baseline difficult and unsafe when fewer nurses are working than they judge are needed. Marg, in activating the institutional discourses, actively engages in producing a scarcity of nurses required to provide (apparently) well-resourced nursing care. AHS initiatives, such as the project developed to staff a new hospital, create stress for NMs like Marg and for front-line nurses alike. Initiatives expected to contribute to stability and predictability work instead to introduce major fluctuations and instability.

Marg, despite her intention to be an accessible, supportive leader, is positioned in an oppositional relationship with nurses. She said,

> So, you have to kind of work through what that means, too. No, this is our staffing. This is what we're funded for. We increase our staff as we need it based on the needs at the time and that's how we work. We're not going to book you up to 18 every day because that isn't what we're funded for, so we have to be accountable for that.

In making judgments that are contradictory to nurses' understandings of what is needed, Marg activates authorized texts, namely the permanent rotation and assigned budget. These texts inform her managerial response to staff nurses, whose experience organizes their knowledge of what is safe and unsafe differently from Marg's. She argues that limiting staff numbers to permanently funded positions is safe the majority of the time.

Conclusion

In this chapter I have shown how Marg took up the training initiative, combined with ruling texts such as the union contract (UNA, 2010), the ROP, and the WMS, in her work of staffing, resulting in a nursing shortage on the unit. I have shown that while new programs are developed to address staffing concerns and improve efficiency metrics, they work instead to tighten already scarce resources as they are incorporated and absorbed by nurses and NMs. In each analysis chapter I have shown how the need for efficient use of resources creates daily nursing shortages. I have shown how NMs like Marg, Tori, and Joan take up organizational discourses related to staffing, effectively putting aside their knowledge of their work in favour of what is authoritatively known, to produce a scarcity of nurses for patient care.

Chapter 10: Summary, Discussion, and Recommendations

My experience of nursing management created in me disquiet when I found my ideological understanding of what it meant to be an NM and a leader did not match the material knowledge of being an NM. Perhaps my consciousness was not quite bifurcated enough, as I continued to rely on my own knowledge of what was happening and acted on that knowledge. In the course of doing this research I have discovered that my former (pre-doctoral) understanding of NM work was based on an ideological foundation that I worked to enact. However, I was working in an accountability framework that in fact organized me to act in opposition to my ideological understanding. I now question whether the "practice" of nursing, along with its ideological construction of care and leadership, creates its own disillusionment when married to an economically driven health care organization. As I explored informants' work of staffing and their disjunctures, as explicated in this dissertation, I noted that they reflected my own experiences of disquiet. However, my analysis has also expanded my understanding of how I and other NMs are drawn into the ruling relations of managerial technologies to pay attention to authorized knowledge of staffing that does not match what we know materially.

My analysis departs from the noncritical literature on the topic of nursing management and clearly displays what is actually happening with the work of staffing for which NMs are responsible and held accountable. I have explicated how NMs' work of coordinating and organizing hospital nursing care in Alberta happens. NMs' activities, that shape nurses' work and work lives, have been empirically tracked and carefully displayed. I have shown how the textual coordination of Canadian health care funding

practices draws NMs into reporting and accountability structures that have negative outcomes for staff. How these negative outcomes come about has been traced to people's activities in local and extralocal locations. In this final chapter, I highlight major findings of my analysis, discuss their relevance for NMs, and make recommendations for future research.

Summary of Major Findings

My analysis began with NMs' expressions of frustration and concern about their ability to staff units based on what they knew was needed. This is exemplified in NM Joan's comment: "When you're dealing with people, you're dealing with staff and their well-being, and you're dealing with patients—and *how lean do you let it go?"* Exploring Joan and other informants' disquiet, I looked to discover how they knew to create lean staffing situations. I found informants' references to baseline, acuity, budgets, and workload were mirrored in texts produced by managerial technologies. In this way I discovered the ruling relations present in informants' work of filling the lines. I found that while NMs, CNs, and SCs knew the work needed to support nurses, their knowledge frequently came up against the "conceptual frames that are deemed institutionally important" (Corman & Melon, 2014, p. 171), frames embedded in the technologically produced categories of patient acuity, baseline, budget, and workload. I found that, despite the tension they experienced, informants worked to accommodate into their staffing work knowledge from managerial technologies to which people in extralocal places held them accountable. My analysis shows how this incorporation of authorized knowledge into NMs' talk and thinking was done in spite of their statements that they

found the information provided to them in the WMS not useful in their everyday/night work of staffing.

I have shown how NMs are organized by these same managerial technologies to create work situations that go against what they know are needed by patients and nurses alike. I found that when NMs prioritized the virtual knowledge contained in managerial technologies over their material knowledge**,** a shortage of nurses available for patient care resulted. Similar to Corman and Melon (2014), I discovered that technologically produced virtual reality "cannot stand alone; the knowledge … [it] provide[s] is an incomplete picture of what is going on. Unintended consequences may result when work is reorganized on the basis of this incomplete understanding and limits possibilities of addressing actual problems" (p. 171). Examples of unintended consequences identified in my research included the BAS rep removing money from Marg's budget, financial statements that did not reflect staffing levels accurately, WMS figures that indicated there were enough staff when nurses reported being short staffed, and situations where informants asserted that a lack of nurse availability negatively impacted patient care. I discovered that managerial technologies provide NMs and nurses with incomplete knowledge of how many nurses were needed and how sick patients really were. My research showed how staffing decisions "in the moment" relied on the material knowledge of nurses and NMs alike; knowledge that was absent in the virtual reproduction of staffing work upon which the VP, BAS Rep, and data analyst relied.

Instead of valuing NMs' material knowledge, I found NMs' knowledge of staffing was discounted when it came to budget decisions that prioritized finding savings. The discourse of finding savings arose in my explication of NMs' staffing work, as it directly

impacted how many and what type of health care professionals NMs could hire. I found the need for NMs to find savings in their budgets was used to eliminate resources needed to provide for staff salaries. I found that NMs knew from experience what the right staff mix for their team was, yet were being pressured to change that mix for the purpose of reducing costs and being seen as efficient. Thus, I discovered that finding savings worked up into a discourse of determining the right staff mix and cutting patient care costs by focusing NMs on the least expensive labour option. Couched in terms that suggest health care professionals need to work to full scope, organizational initiatives (such as the WMTP) urge putting the right people in the right place as a strategy to change NMs' knowledge of the type of care provider patients required. Managerial technologies in AHS work to keep NMs' attention on budget numbers, organizing them to stay within their budget by considering changes to staff mix. These same technologies, as exemplified in the MWR, allow for comparison and contrasting of NMs' efforts to increase productivity (elimination of part-time positions), effectiveness (decreased overtime use and vacation bank), and efficiency (change in staff mix). By using digital-era governance structures the ruling relations of staffing work organize NMs to act in ways that contradict what they know from experience is required.

Of interest to me was that the technologically produced knowledge of staffing differed significantly from nurses' material knowledge. I found nurses describing the busyness of their units and how they consistently worked short staffed. However, those working outside of the immediate area, such as the VP, the data analyst, the BAS Rep, and at times NMs, refuted nurses' knowledge of the difficulties they encountered in the process of providing patient care. These individuals referenced the authorized knowledge

of the WMS, which identified that staffing levels were "at baseline or better," to negate nurses' knowledge about how they experience the materiality of their work. AHS texts, such as the WMS and MWR, are used to establish authorized knowledge of staffing conditions as "the truth," in opposition to nurses' material knowledge of their work and its demands. WMS calculations construct facts both of how sick a patient was and of whether or not nursing resources matched the mathematical calculations that estimated what patients needed from nurses. The linking of information inputted into computer systems created a level of abstraction that supported particular administrative interests and limited what administrators could know about patients and staff. NMs' stories revealed a disjuncture between their responsibility and accountability to ensure there were enough nurses and the socially constructed mandate of efficiency, as it measured up to standardized knowledge about good resource utilization.

One of the major findings of my research project was that the WMS seemed to only organize budgetary work one way. This system was used almost exclusively as a ruling tool to manage NMs and their cost-saving work. WMS data were essentially ignored when it came to making funding decisions for nursing care. Within the institutional arrangements of the broad institution of Canadian health care, WMSs are used to create benchmarks and comparisons that organize the rationed resources I have described. However, in terms of the local allocation of resources (contrary to what NMs believed), I found no evidence that the WMS (and its detailed data) was used to make decisions about individual unit's funding. As an example, I reference back to NM Tori's decision not to replace the first sick call—a decision made due to an across-the-board

decrease in relief funding. Tori's decision resulted in a shortage of nurses, increased nurses' workload, and increased risks of adverse patient events.

NMs' knowledge of what is needed to safely manage the unpredictability of patient care needs, which hospitals rely on, is considered subjective and, therefore, not to be trusted. In efforts to find "trustworthy" data that objectively "show" what is happening in health care and support NMs and others to make "better" decisions, health care organizations have turned to managerial technologies purported to find the truth about the need for nurse staffing on patient care units. These managerial technologies, in the form of the WMS, MWR, and budgets, are taken up by extralocal workers and thought to be sufficient to make decisions on budgets and staffing needs, effectively replacing NMs' local knowledge with technologically produced knowledge.

Each analytical chapter has demonstrated how the work of NMs is organized and coordinated to focus on limiting the availability of patient care within a health care system that constantly laments a shortage of nurses and resources to manage the work of patient care in hospitals in Alberta. Using electronic systems to "improve" NMs' decision-making to supposedly increase their ability to staff their units efficiently hides from view the work that is organizationally coordinated to happen—work that perpetuates situations of short staffing and heavy workload that nurses and NMs' experience day to day. My work of writing up how NMs' knowledge is being orchestrated by the WMS and MWR provides evidence of the negative effect that keeping authorized knowledge in the forefront of staffing work has on NMs' abilities to safely staff their units.

Noticeably absent from information produced in managerial technologies was the ability to capture the knowledge and experience a nurse contributed to the work of patient care, knowledge that my research found was invaluable when staffing decisions were being made by NMs, SCs, and CNs. The textual construction of a nurse as an FTE, whose engagement in the work of patient care was considered in terms of the number of hours she or he worked, was virtually introduced as nurses' productivity in the MWR. I found that knowledge of productivity in the MWR organized NMs to pay attention to the amount of time a nurse worked, creating a focus on decreasing part-time workers. At the same time, NMs knew that increasing nurses productivity by decreasing part-time lines created a problem for their work of staffing. My research found that NMs knew from experience that a nurse's material knowledge and skill were what was considered when making staffing decisions, and in order to keep nurses the NM needed to consider nurses' work–life balance as well as unit needs. Here again, the idea of productivity as portrayed in managerial technologies bumped up against NMs' knowledge of what was needed to keep experienced nurses who were integral to the unit's ability to care for patients.

Discussion

NMs are able to contribute knowledge from being in the local setting and knowing their staffing work that is different from authorized knowledge. Managerial technology that produces authorized knowledge, seen by extralocal people as the truth of what is happening with patient care and nurses work limits NMs' and nurses' abilities to provide safe, quality care. Griffith and Smith (2014) noted,

> Producing technologies to standardize and make comparable performances, outcomes, or the costs of inputs and so on presents particular difficulties when

> what has to be represented institutionally does not straightforwardly fit into what is involved in doing the work. (p. 18)

Placing what nurses and NMs know behind increasingly complex computer programs creates a false sense of what is true, as well as a false understanding of what is actually happening.

While nurses' material knowledge is understood by extralocal people (i.e., the data analyst, BAS Rep, and VP) as subjective and, therefore, not to be trusted, in a contradictory relationship the same is said for computer programs. The data analyst understood NMs could "manipulate the data inputted," and NM Tori understood the WMS was still "a work in progress." Understanding that neither the computer program nor NMs' knowledge is sufficient to know the work needed at the front line of patient care, perhaps it is time to at least build flexibility into nurses' work. I am not recommending for flexibility that adheres to the numbers generated in the WMS, but rather flexibility that provides a resource bank for nurses to draw from on short notice, when acuity increases. In addition, perhaps some flexible work time for nurses needs to be considered. Building time into the regular staffing rotation would provide the opportunity for nurses to read evidence, provide further education to staff and patients, and communicate new practice initiatives in the event of a quiet shift. Resources need to be available close to the local, daily happenings of patient care in order to establish the sort of systems that are able to address unpredictable patient care needs that informants experience. These initiatives should be accompanied by careful research, but not research of the numerical sort; rather by research that generates narrative accounts that provide

insight into things that actually happen, not aggregate, abstract representations of what is going on.

My research contribution has been to show some of the actualities to which NMs are responding, as an alternative to blaming them for being inefficient. There are research studies where authors tell NMs how to improve their effectiveness and efficiency (Chubbs, 2013, Laschinger & Wong, 2007; Schreuder et al., 2011), and other studies where authors suggest it is NMs' lack of leadership and/or knowledge of economics that result in poor outcomes for health care organizations (Cummings et al., 2010; Duffield et al., 2011; Meyer et al., 2014; Sherman & Pross, 2010). Instead of focusing on how NMs can improve their "performance" (performance as something to be measured and assessed), this dissertation has focused on the social organization of NMs' work—how it comes to happen as it does.

I have set aside, for the most part, any examination of NMs' individual characteristics and leadership style in order to chronicle what they are actually doing. These conceptual categories captured my former (pre-IE) ideas about what was interesting in NMs' work. They were ideas that were organized by my formal studies and my subsequent explanations about my own ill-fated time of being an NM. At that time, this was the only analytical framework available to me. However, this framework did not provide me with a way to show how NMs are sandwiched between what they know is required to safely staff their units and their accountability to the managerial technologies that provide a different knowledge of staffing needs. My introduction to IE provided me with a way to show this disjuncture in NMs' work and explicate the problematic that I discovered.

By chronicling what NMs were doing and how they know to do their work of staffing I discovered them taking up discourses and texts that effectively result in a shortage of nurses. The economic discourses that accompany this work, that subsume NMs' knowledge of what is needed, hide from view what is not known within the MWR and other electronic systems used to provide authorized views of NMs' staffing work. I have shown that what Rankin and Campbell (2006) discovered in their research about nurses' work is also true of NMs.

> Their subjectivity is being restructured as they activate the text-based and ideological practices of health care reform and hospital restructuring. We consider it important that nurses and others recognize that in activating the working texts, they absorb ruling ideas. Their place within the ruling agenda is crucial. Theirs is a bridging and coordinating position within the new order. (p. 168)

My research has illuminated the social organization of administrative reforms and my analysis chronicles some of the untoward effects these reforms have on NMs and nurses. I have presented an alternative account to that provided by the authorized forms in managerial technologies. Since IE focuses on problems, not on where things are going well, I have not provided examples of where the WMS is working well. Furthermore, my informants did not provide me with data that would support statements made to that effect. My data instead showed how the authorized texts of the WMS are not able to capture NMs', SCs', and CNs' material knowledge of their work of staffing and the needs of patients.

I have shown that NMs' work to meet the needs of staff is socially organized by ruling relations of the WMS and AHS that are designed (for the most part) to eliminate

NMs' options to consider individual staffing needs. Cowden et al. (2011) found that NMs who focus "on the individual needs of their staff and who strive to meet those needs are more likely to retain their staff" (p. 471). The initiative to implement scheduling structures leaves no room for individual staff needs. Similar to Wong et al.'s (2013) discovery that identified NMs' concerns with "the dissonance … [NMs] experience in their role trying to meet both staff and organizational needs" (p. 239), I found a disjuncture in Marg's work of staffing, as she navigated between knowing what her part-time nurses needed and meeting AHS directives to ignore those needs in favour of the ROP. Here, the analysis moves well beyond Wong et al.'s conceptual explanation vested in roles, to show how the practices that organize NMs' dissonance are socially organized and designed to pull NMs into line with organizational interests, at the expense of staff and patients.

My research has shown that NMs are paying attention to organizational processes and designs intended to improve outcomes. However, in doing so they are ignoring their own knowledge of what is needed to support nurses, instead limiting staffing to just enough. My research addresses Denis et al.'s (2011) findings that hold NMs partially accountable to transform health care, in which they stated, "Managers have to change their focus and pay more attention to the inner workings of their organizations and to the design of environments and processes that can stimulate performance" (p. 16). Here is another instance in which performance can be seen as a contested discourse that NMs work to incorporate into their work of staffing. My research shows NMs do pay attention to the organization and the ruling relations that organize them; however, in doing so they

put aside their own knowledge of what is required to provide safe patient care, limiting resources to just enough, which often results in not enough.

I have shown how within AHS work is being done to decrease the number of RNs at the bedside, in keeping with the neoliberal agenda that seeks to decrease the costs of providing health care. The work of improving managerial technologies to more accurately assess the appropriate use of resources and standardize processes of staffing to decrease costs are a reflection of the neoliberal agenda organizing NMs' work. While AHS texts proclaim that quality of care will not deteriorate with changes to skill mix, the analysis I have presented has shown how NMs are being pressured to put aside their knowledge of staffing needs and focus instead on finding savings and reducing costs, requiring them to consider changing their staff mix. This pressure has led to a decrease in the number of RNs available to provide for patient care. I highlight here Aiken's (2008) descriptive statistics that indicated a reduction in RNs results in negative patient outcomes. Ongoing work is being done to replace RNs with lesser-educated professionals, thereby increasing the risk of negative patient outcomes for patients in Alberta.

Recommendations

My dissertation provides empirical evidence of the staffing work NMs do and the ruling relations that coordinate and orchestrate that work. My work adds to the work done by previous IE researchers and is building a historical account of what is happening in health care within the neoliberal agenda. It is too easy for those who are immersed in this work to see only what they expect to see, while at the same time being unaware of their own role in accommodating the ruling relations that organize them to think and act in

ways that result in negative outcomes for patients and staff alike. I suggest that by making visible the social organization of NMs' work I have provided an alternate account that can be used to speak back to those in authority.

While NMs understand that the authorized knowledge of the WMS is not complete knowledge, they need an analysis that takes up their standpoint and provides a way for them to see what is happening—an analysis that extends what can be known from the local setting into extralocal ruling relations. My analysis shows that NMs' knowledge of their work of staffing and the needs of nurses and patients is necessary to the safe running of patient care units. It is my firm belief that unless NMs can develop a more robust analysis of their work and its built-in contradictions they will be unable to continue to advocate for patients and nurses.

Insight into how the electronic systems, meant to improve their ability to manage and organize nurses' work, needs to be developed to include strategies for NMs' own knowledge about what is happening to be authorized at the forefront. By recognizing the importance of contributing their material knowledge to any discussion involving managerial technologies, NMs can speak back to aggregate knowledge that is being amassed that works to undermine critical "subjective" knowledge upon which nurses and patients rely. My dissertation provides NMs with a tool to use in understanding how the tensions they experience in their work are socially organized. It also validates their own material knowledge of their work and provides them with the possibility to respond to organizational discourses and knowledge with empirical evidence that supports them to speak back to authorized discourses from their knowledge of their local setting.

Providing knowledge of how NMs work of staffing is socially organized to happen as it does, producing contradictory and, as I have shown here, risky effects on staff and patients, is evidence that needs to be amassed by everyone working in health care who are concerned about sustainability, efficiency, and effectiveness. Ensuring this knowledge is distributed widely, for all to read, is one of my intentions for this work. By publishing, presenting at conferences, workshops, and organizational meetings, I can increase awareness of the hidden costs of the economic imperatives of NPM that dominate patient care concerns (Griffith & Smith, 2014).

This research project has begun a work that is new in nursing, using IE to explicate the ruling relations of nursing management. Further research needs to be done to more fully understand how NMs' work of staffing happens as it does. Much of the data related to employee sick time, workers' compensation, and the coordination of hiring practices by HR, have not been addressed. There are many threads that I could have chosen; however, the most compelling given my own experience and understanding of NMs' work were the staffing efforts that absorb so much of NMs' time and attention. There were times in the course of my analysis when I discovered a thread I could not pursue, such as explicating the in-depth work of computer programming language and terminology.

Further exploration of the various technological processes in the WMS and how they come to be would provide further insights into how nurses' and NMs' work is socially organized by the work of counting, regulating, and standardizing. Further ethnographic explication is also needed of how patients' are impacted when consideration of work–life balance is put aside in favour of increasing the number of nurses working

full time, or when there is a shortage of nursing staff. Further research is also needed to identify the impact of changes to staff mix on hospital units, given AHS's increased focus on implementing collaborative practice models that decrease the numbers of RNs available to provide patient care.

I presented my work in this dissertation from the standpoint of the NM, looking up into the organization to identify the ruling relations in which NMs participate in their work of staffing, and exploring how NMs' activation of ruling relations unfolds for nurses and patients. Furthermore, research that explores how simulation modelling and the use of LEAN thinking in health care are impacting patients is limited. Topics such as whether the world of health care reflects simulation and computer modelling forms and whether health care professionals see the complexity and unpredictability of their day-to-day work in the developed simulations require further research.

Conclusion

This research has begun to explicate how NMs' know to do their work of staffing and the institutional discourses that they take up to do that work. My hope is that within these pages, NMs and others will obtain a greater understanding of how they are drawn into *knowing* their work differently than they understand and experience it to be.

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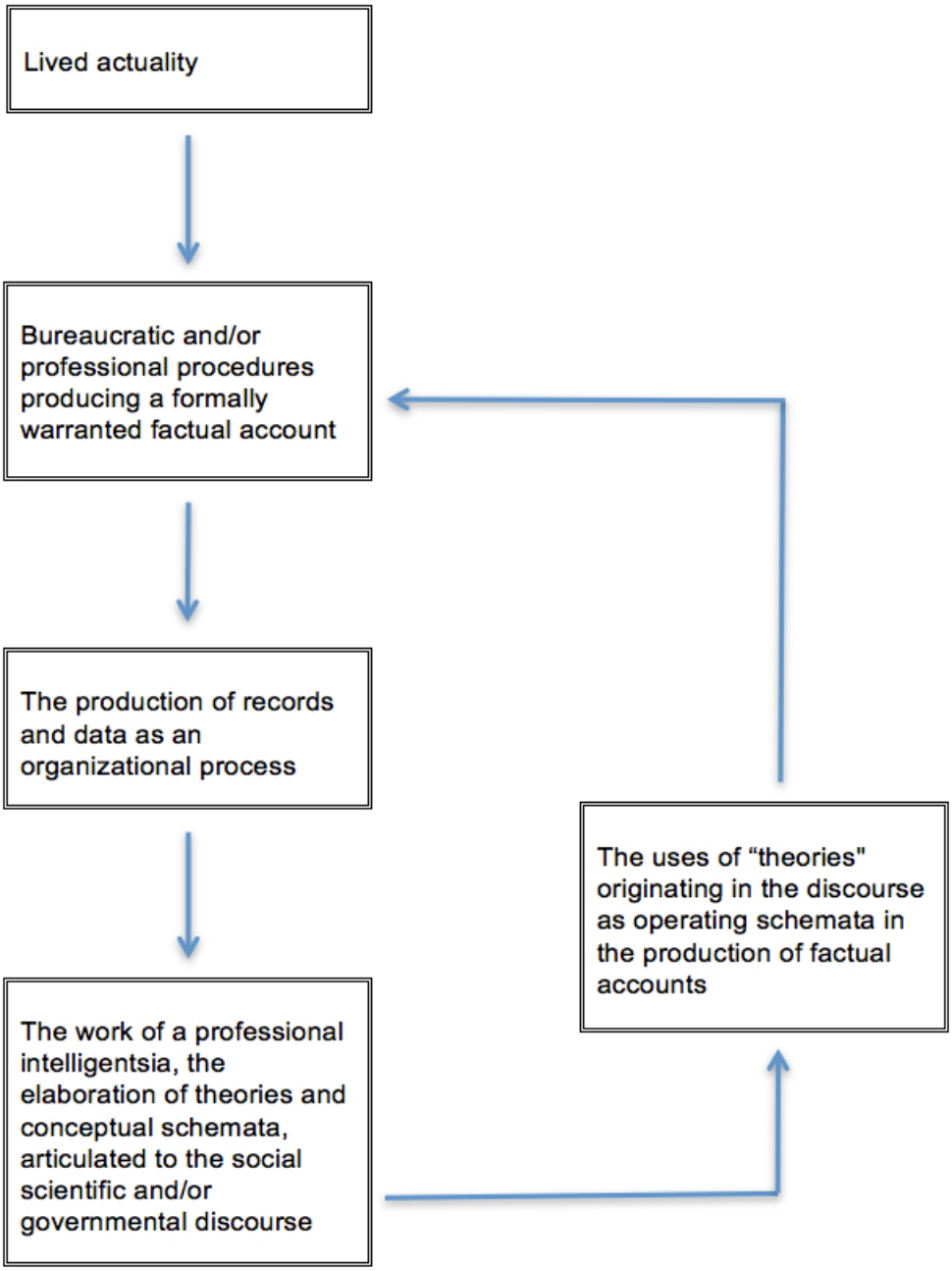
Appendix A: The Ideological Circle



Note. From *The Conceptual Practices of Power: A Feminist Sociology of Knowledge* (p. 148), by D. Smith, 1990, Toronto, Canada: Author. Copyright 1990 by D. Smith. Reprinted with permission.

Appendix B: Investigation into the Social Organization of the Work of Nurse Managers in Acute Care

I am conducting a research project focused on the social organization of the work of nurse unit managers in the acute care setting. Utilizing the method of institutional ethnography, I will focus on the tensions and contradictions that arise in the work of nurse managers and describe how these come to be.

Your participation in this study is purely voluntary. You will be asked to allow me to observe you for several hours during your workday, as well as to participate in a follow-up interview session lasting 1-2 hours. All interviews will be taped and transcribed by myself. You will also be asked to provide access to texts that are referred to during the course of our time together.

You may withdraw from the study at any time. If you wish to withdraw after participation, you can contact Olive Fast at [telephone number] or by email at [email address]

All information received will be kept confidential. Names will be removed and any personal identifying information will be eliminated from any reporting of the results.

All observational data, tapes, and interview transcriptions will be stored in a secure space. Texts identified through observation and interviews will be collected and stored under lock and key.

The Conjoint Health Research Ethics Board (CHREB) at the University of Calgary has approved this study. _____, Senior Ethics Resource Officer may be contacted at _____ or _____ in case of participant comment or complaint.

If you are interested in participating or would like more information about this study please contact [email address].

Appendix C: Investigation into the Social Organization of the Work of Nurse Managers in Acute Care

I am conducting a research project focused on the social organization of the work of nurse unit managers in the acute care setting. Utilizing the method of institutional ethnography, I will focus on the tensions and contradictions that arise in the work of nurse managers and describe how these come to be.

Your participation in this study is purely voluntary. By signing this form you are agreeing to allow me to observe you for several hours during your workday, as well as to participate in a follow-up interview session lasting 1-2 hours at a mutually agreed upon time. All interviews will be taped and transcribed by myself. You will also be asked to provide access to texts that are referred to during the course of our time together.

You may withdraw from the study at any time. If you wish to withdraw after participation, you can contact me, Olive Fast, at [telephone number] or by email at [email address]

All information received will be kept confidential. Names will be removed and any personal identifying information will be eliminated from any reporting of the results.

All observational data, tapes, and interview transcriptions will be stored in a secure space. Texts identified through observation and interviews will be collected and stored under lock and key.

The Conjoint Health Research Ethics Board (CHREB) at the University of Calgary has approved this study. _____, Senior Ethics Resource Officer may be contacted at _____ or _____ in case of participant comment or complaint. Alberta Health Services has also approved this study, as has Sue Gudmundson, the VP of the PLC.

Informant Signature _____

Appendix D: Institutional Ethnography Interview Table

Analytic concept	Analytic intent
Inquire from a perspective rooted in the activities of standpoint informants. This position is maintained throughout the inquiry that explicates how organizations work.	Learn about the issues, tensions, and contradictions that people experience in their lives (problematic).
Examine work practices and processes in organizational and bureaucratic settings in such a way that the researcher "think[s] organizationally" (D. SMITH in DeVAULT & McCOY, 2004, p. 758).	Orient interviews toward features of social life that link standpoint informant activities to activities occurring more broadly (social relations).
Investigate the material, empirically observable events of peoples' lives.	Listen to people's "stories" of what practices and activities they engage in (DIAMOND in DeVAULT & McCOY, 2004, p. 756).
Uncover the research problematic over time through the researcher's immersion in the field.	Be attentive to how informants describe the events of their lives. Listen for how people use institutional language and official or authoritative reasoning to explain events. People's accounts might actually be dissonant from what they experience and know.
Study features operating across multiple sites, and explore how these are connected through circulating texts and documents.	Ascertain the implicit and explicit social relations that shape informants' activities.
Identify the texts people use in their daily activities, and examine how they use them.	Find out about how texts organize what informants say and do (discursive organization).
Focus on how an informant's social location informs her/his knowing, and consider what the person can say from this position.	Develop understandings about how institutions function because this provides about social organization and power or ruling relations.
Cultivate understandings about the organization of institutional places from informants and texts. Researcher follows up on analytic clues of thread gathered in one interview or observational setting to the other.	Acquire understandings about how people use texts. Informants talk about peoples' work practices, and the researcher prepares to dialogue with and/or observe extralocal informants in later stages of fieldwork.

Note. From "Navigating the Politics of Fieldwork Using Institutional Ethnography: Strategies for Practice," by L. Bisaillon & J. Rankin, 2013, *Forum: Qualitative Social Research, 14*(1), Art. 14. Copyright 2013 by Bisaillon & Rankin. Reprinted with permission.

Appendix E: Information Regarding Presence of Institutional Ethnographic Researcher

TITLE: Investigation into the Social Organization of the Work of Nurse Managers in Acute Care

INVESTIGATORS:

Primary Investigator: Dr. Janet Rankin – [telephone number]
Co-Investigator: Olive Fast, PhD(c) – [telephone number]

I am a PhD student conducting research into the work of nurse managers. I am interested in discovering how the work of nurse managers is socially organized to happen as it does. Part of this research involves observing the nurse manager as they go about their work. During this process I pay attention to the documents and forms that are used by her/him in the course of doing their work. I collect copies of these documents and use them as data sources.

Because I am interested in the work processes of nurse managers I am also interested in the day to day communications they have with staff, colleagues, and administrators. With your verbal permission I will describe select interactions that are analytically useful. You will not be identified in the write up of the research, pseudonyms will be used and strategies adopted to ensure there are no breaches in confidentiality.

Should you be uncomfortable being included in the research observations you may ask the researcher to leave at any time. You may also approach the researcher privately following the observation to have your data removed from the research.

The Conjoint Health Research Ethics Board has approved this research study as well as the VP here at Hospital A.

If you have any questions concerning this research, please contact the Chair, Conjoint Health Research Ethics Board, at [telephone number].

If you would like further information related to this study please contact Olive Fast at [email address] or at [telephone number].

Appendix F: Workload Management System Report Provided to Nurse Managers

Unit Period Detail - In Staff

[redacted]

Date: 2013-02-01 to 2013-02-28

FY Start Date: 2012-04-01

Unit: B

[redacted]

	Fri 2013-02-01	Sat 2013-02-02	Sun 2013-02-03	Tue 2013-02-05	Wed 2013-02-06	Thu 2013-02-07	Fri 2013-02-08	Sat 2013-02-09	Sun 2013-02-10	Mon 2013-02-11	Wed 2013-02-13	Thu 2013-02-14	Fri 2013-02-15	Sat 2013-02-16	Sun 2013-02-17	Mon 2013-02-18
I	0.00	2.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	2.00	1.00	1.00	2.00	3.00	2.00	3.00
II	1.00	0.00	1.00	3.00	2.00	1.00	0.00	3.00	4.00	2.00	2.00	2.00	1.00	1.00	1.00	0.00
III	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
V	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Class Cen	1.00	2.00	1.00	4.00	2.00	1.00	4.00	3.00	4.00	4.00	3.00	3.00	3.00	4.00	3.00	3.00
LOS Adj Cn	1.00	2.00	1.00	4.00	2.00	1.00	4.00	3.00	4.00	4.00	3.00	.3.00	3.00	4.00	3.00	3.00
Mn Census	4.00	1.00	0.00	2.00	2.00	2.00	4.00	4.00	4.00	3.00	3.00	3.00	4.00	3.00	4.00	5.00
Class WI	1.00	1.40	1.00	4.50	2.00	1.00	2.80	3.00	4.00	3.40	2.70	2.70	2.40	3.10	2.40	2.10
Class Acuity	1.00	0.70	1.00	1.13	1.00	1.00	0.70	1.00	1.00	0.85	0.90	0.90	0.80	0.78	0.80	0.70
Complexity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
THPWI	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62
Dir Staffing																
Budget	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rec	3.00	3.00	3.00	3.72	3.00	3.00	3.00	3.00	3.31	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Actual	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
AHPWI	24.00	17.14	24.00	5.33	12.00	24.00	8.57	8.00	6.00	7.06	8.89	8.89	10.00	7.74	10.00	11.43
RHPWI	24.00	17.14	24.00	6.62	12.00	24.00	8.57	8.00	6.62	7.06	8.89	8.89	10.00	7.74	10.00	11.43
N-Dir Staff																
Budget	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Actual	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AHPWI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RHPWI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bud HPPD																
Direct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-Dir	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Act HPPD																
Direct	24.00	12.00	24.00	6.00	12.00	24.00	6.00	8.00	6.00	6.00	8.00	8.00	8.00	6.00	8.00	8.00
Non-Dir	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	24.00	12.00	24.00	6.00	12.00	24.00	6.00	8.00	6.00	6.00	8.00	8.00	8.00	6.00	8.00	8.00
Rec HPPD																
Direct	24.00	12.00	24.00	7.45	12.00	24.00	6.00	8.00	6.62	6.00	8.00	8.00	8.00	6.00	8.00	8.00
Non-Dir	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	24.00	12.00	24.00	7.45	12.00	24.00	6.00	8.00	6.62	6.00	8.00	8.00	8.00	6.00	8.00	8.00

Note: Budget In LOS Adj Census

QuadraMed. AcuityPlus 8.1

Page: 1 of 2

Run Date: 2013-03-07

Note. From AHS Employee (personal communication, June 22, 2014).

Appendix G: Aims of the Provincial Services Optimization Review

"By taking a provincial perspective, this report serves to crystallize current thinking in order to:

- *Assess current and future supply and demand for workforce and infrastructure capacity*
- *Identify potential future gaps and outline alternative care delivery models to address these gaps*
- *Emphasize a patient-centric approach throughout the continuum of care*
- *Amplify innovations and creative ideas already underway within Alberta, which could be induced to take root on a larger scale*
- *Inform solutions to Alberta's issues with global best practices*
- *Ensure that inter-related initiatives are effectively linked*
- *Enable the system to make appropriate tradeoffs between differing priorities—to optimize quality, access, and sustainability*
- *Propose a model in which Alberta Health and Wellness and Alberta Health Services work together collaboratively, along with other stakeholders, to further define and implement these solutions."* (p. 1)

Note. From *Provincial Services Optimization Review: Final Report* (p. 1) by McKinsey and Company, 2008, Edmonton, Canada: Alberta Health and Wellness.