Where we are and how we got here:

An institutional ethnography of the Nurse Safe Staffing Project in New Zealand

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Abstract

Frontline nurses in New Zealand hospitals still work on short-staffed shifts 18 years after they began to express concerns about unsafe staffing and threats to patient safety. The Nurse Safe Staffing Project and its strategies (Escalation planning and the Care Capacity Demand Management Programme) were designed to address the incidence and risks of short-staffing. After a decade, these strategies are yet to yield tangible improvements to frontline nursing numbers. Using institutional ethnography, I have charted a detailed description and analysis of how aspects of the strategies of the Nurse Safe Staffing Project *actually work* in everyday hospital settings. Competing institutional knowledge and priorities organise what is happening on short-staffed shifts, and nurses are caught in the crossfire. The central argument throughout this thesis is that nurses' vital situated knowledge and work are being organised by and overridden in this competitive institutional milieu. I show how what actually happens is consequential for nurses, patient care, and staffing strategies. This analytical exploration contributes knowledge about nurses' situated and intelligent compensatory work on short-staffed shifts, how this knowledge is displaced by abstracted institutional knowledge, and the competing social relations present in environments where nurse-staffing strategies are negotiated.

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To the frontline nurses who provided data, but also to all frontline nurses who show up every day out of a commitment to patients and the profession. THANK YOU! If it was easy, everyone could do it.

Thank you to all the research participants. Collectively we have created something no single one of us alone could know, and that will always be significant. Thank you for your contribution.

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My thanks also to Pip, Jane and Rachel for being practice readers and identifying inconsistencies, misspellings, flow issues and troubles with apostrophes. I am grateful for your time and feedback.

Notes for the reader

To assist the reading of this thesis, I offer these notes

- I use the term 'Nurse Safe Staffing Project' to describe the entirety of efforts directed at resolving nurse-staffing shortages in NZ. The Nurse Safe Staffing Project includes the collection of campaigns, enterprise bargaining agreements, industrial action, the safe staffing healthy workplaces committee of inquiry, the safe staffing healthy workplaces unit and nurse staffing strategies designed to reduce the incidence and risks of short-staffing

- After the introduction to each chapter (except chapters 2 & 9), a glossary will detail the terminology and abbreviations relevant to that chapter. Chapter 2 constitutes an in-depth explanation of institutional ethnography that precludes the need for a glossary. In chapter 4, the glossary appears immediately ahead of part II – the Nurse Safe Staffing Project.

  All images of the Care Capacity Demand Management (CCDM) Programme tools, (except those I have created for this research report) are under copyright owned by the New Zealand Ministry of Health, 2017 and were provided by the Safe Staffing Healthy Workplaces Unit and used with permission, or from the public CCDM website.

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- There are two patient acuity systems in use in NZ hospitals (Onestaff and TrendCare). None of the participants used Onestaff, therefore most references are to Trendare. All references to TrendCare are based on peoples' personal and individual knowledge and experience of learning, implementing, and using the system in NZ hospitals. The exception is the reference to the copyrighted TrendCare Gold Standards provided by TrendCare CEO Cherrie Lowe and used with permission.

  All references to Smith pertain to Dorothy Smith unless the presence of initials indicates otherwise.

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Chapter 1 – Introducing the study

Introduction

Extensive primary research studies, meta-analyses, and syntheses have investigated why globally shifts are short of nurses (Thungjaroenkul, Cummings, & Embleton, 2007; Weinberg, 2003; Willis, Carryer, Harvey, Pearson, & Henderson, 2017), what happens for patients when there are not enough nurses, (Ausserhofer, Shubert, Desmedt, Blegen,De Geest, & Schwendimann, 2012; Ball, Murrells, Rafferty, Morrow, & Griffiths, 2014; Cho, Ketefian, Barkauskas, & Smith, 2003; Kalisch, Tschannen, & Hyunwha, 2011; Jones, Hamilton, & Murry, 2015), and what happens for nurses when there are not enough nurses (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Gallagher, 2010; Rathert, May, & Chung, 2016). However, despite this extensive effort, there is little definitive evidence on the 'right' number of nurses to *guarantee* patient safety and comfort through the completion of all nursing work within the hours of every shift. This lack of definitive numbers has not precluded the development of a variety of nurse staffing strategies. In New Zealand (NZ), a decade has been devoted to the development and implementation of nurse staffing strategies, and it is these, and what they have and have not achieved, that is the focus of this research.

In this chapter, I introduce the problem this research investigates. I provide a background to the problem in the form of an overview of the literature, a summary of the NZ context, and the disquieting experiences providing the catalyst for the investigation. I identify gaps in existing knowledge, the significance of this research and the purpose of this inquiry. The research questions, the scope of the inquiry, and investigative approach are all detailed, followed by a summary of the chapters that structure the thesis.

Table 1 Glossary for chapter 1

Short-staffed shift	A shift with an inadequate number of nurses, experience or skills for patients' needs, and to meet the other needs of the ward, staff, and organisation
District Health Board (DHB)	Healthcare purchaser and provider organisation responsible for delivering healthcare services to the community within their jurisdiction. There are 20 DHBs in NZ

Nurse staffing strategies	Globally includes nurse-patient ratios, local and national guidelines committees. In NZ nurse staffing strategies include Escalation planning and the Care Capacity Demand Management Programme (abbreviated to CCDM or *the programme*)
The Safe Staffing Healthy Workplaces Unit	A national unit established to implement the COI report (see next row). Staffed by nurses and a social worker (allied health) abbreviated to *the unit*
Safe Staffing Healthy Workplaces Committee of Inquiry and report (2006)	Report of the Safe Staffing Healthy Workplaces Committee of Inquiry (SSHWCOI) – made up of union, DHB, Ministry of Health, and independent representatives. Tasked with producing a report on requirements to achieve safe staffing and healthy workplaces in NZ healthcare settings. Abbreviated to the COI report
New Zealand Nurses Organisation (NZNO)	Professional and industrial organisation for nurses, some midwives, and health care assistants in NZ.
Enterprise bargaining and Multi-Employer Collective Agreement (MECA)	Enterprise bargaining occurs every three years when numerous items are negotiated between the employers (DHBs) and the unions for each professional group. The MECA text enshrines the agreements of negotiations for the current term, e.g. the current MECA agreement is dated June 4, 2018, to July 31 2020 (abbreviated to *the MECA*)
TrendCare	An electronic patient acuity system. Currently licensed in 16 of the 20 DHBs in NZ (at the time of writing). Frontline nurses enter data into the TrendCare system on each patient at least twice on each shift
Organisation for Economic Cooperation and Development (OECD)	An intergovernmental economic organisation with multiple member countries, founded in 1961 to stimulate global economic progress and world trade

The problem this research investigates

Frontline nurses in New Zealand (NZ) hospitals still work on short-staffed shifts 18 years after they began to express concerns about staffing shortages, threats to patient safety, and unmanageable workloads[1]. Industrial campaigning and enterprise bargaining on these (and other) issues has resulted in a collaboration between employers (DHBs) and the nursing union (New Zealand Nurses Organisation, NZNO)[2] to develop and implement several staffing strategies across NZ. Investment in the development and

[1] The same is true of other settings where nurses work but this study focuses on NZ's public hospitals.
[2] As well as other unions subsequent to the original collaboration in 2004.

implementation of these strategies has consumed extensive resources; costs associated with personnel, the design and dissemination of strategy resources, the purchase, design and dissemination of hardware and software and so on. This investment is yet to yield tangible results that mitigate frontline nurses' concerns. This situation is both puzzling and problematic. Why, after a decade of development and implementation has the evidence-based nationally agreed Nurse Safe Staffing Project and its strategies not resolved short-staffed shifts and nurses' concerns in NZ hospitals?

Background to the problem

The background to the problem this research investigates, incorporates the extensive nurse staffing literature, some of the unique developments in NZ, and my own disquieting experiences as a frontline nurse and staffing strategy designer. It is impossible to separate my experiences and knowledge about nurse staffing strategy design and implementation gained before undertaking this research, and the approach of institutional ethnography supports the contribution of the researcher's experience and observations to the project. However, I take care to differentiate my experience and observations from data arising from participants and texts associated with this research.

The literature

More than 30 years of extensive and compelling research literature examines connections between nurse staffing (numbers, skill, education, and experience) and patient experience, safety, mortality, and outcomes (Aiken, et al., 2014; Blegen, Goode, & Reed, 1998; Bruyneel, et al., 2015; Butler et al., 2011; Duffield, Diers, O'Brien-Pallas, Aisbett, Roche, King, & Aisbett, 2011; Dunton, Gajewski, Klaus, & Pierson, 2007; Fagerström, Engberg, & Eriksson, 1998). Assumptions about such connections seem logical (Aiken, Clarke & Sloane, 2001), but few have proven to be empirically causal (Griffiths et al., 2016). One exception being Aiken, Clarke, Sloane, Sochalski and Silber's (2002) research on the relationship between high numbers of patients in nurses' allocations (8 or more) and an increased risk (7%) of each patient dying in hospital (failure to rescue), or immediately after discharge (30-day mortality).

Nurse staffing research is framed within contemporary healthcare where business management and modelling, patient safety and global nursing shortages

dominate thinking, policy, and practice (Attree, Flinkman, Howley, Lakanmaa, Lima-Basto, & Uhrenfeldt, 2011). Globally, under the neo-liberal regimes of most western societies, healthcare services of Organisation for Economic and Development (OECD) countries are organised and controlled by marketplace modelling and factory thinking (known as New Public Management, NPM) (Buchan, O'May, & Dussalt, 2013; Buchan, Duffield, & Jordan, 2015; Church, Gerlock, & Smith, 2018; Dent, Chandler & Barry, 2004). Since NPM swept across OECD countries in the 1980s fiscal constraint, practitioner and organisational performance, and outcome measurement have dominated and inexorably altered the contours of the professional workforce landscape (Dent & Barry, 2004; Simonet, 2015).

In healthcare settings, the ideas and practices of NPM contend with the global and professional focus on patient safety, often with catastrophic results for patients (see Church, Gerlock, & Smith, 2018, and the report of the Mid Staffordshire public inquiry, The Francis Report, 2013). New Public Management is also implicated in the construction of a global nursing shortage (ICN, 2016; OECD, 2005). Causes of nursing shortage include scenarios in which many countries (such as NZ) cannot supply their national demand for nurses internally (Ministry of Health, 2016; New Zealand Immigration, n.d; OECD, 2016). The nurse staffing research and the complexities of contemporary healthcare settings provide the backdrop to nurse staffing strategies, including the unique approach taken in NZ.

The NZ context

There are approximately 52,700 registered nurses in New Zealand as of February 2018 (Cassie, 2018; Nursing Council of New Zealand, 2018). Along with the right to vote for women in 1893, New Zealand was the first country to appoint a Chief Nurse and to formally register nurses in 1901 (Cassie, 2009). Registered nurses are regulated by the Nursing Council of New Zealand, and are assessed under the regulatory framework of practice competencies as fit to practice and hold an Annual Practising Certificate (Health Practitioners Competence Assurance Act, 2003; Nursing Council of New Zealand, 2007). Several of these competencies[3] make nurses specifically and explicitly accountable for

[3] Nursing Competencies 1.2, 2.4, and 2.5.

patient safety, and the provision of a safe environment for care (see detail in chapter 4). Nurses are trying to accomplish these professional accountabilities for patient and environmental safety under complex and constrained conditions.

New Public Management reforms, including healthcare reforms, were embraced and implemented more aggressively in NZ than in any other OECD country (Gauld, 2009 Schick, 1996; Trailblazers, 2017). Among the changes wrought, control over nursing numbers and care environment resourcing were shifted away from frontline nursing managers, reducing clinical nursing's jurisdiction over these critical aspects of direct patient care. During one of the most significant declines in nurse staffing numbers precipitated by healthcare reforms (see Carryer, Diers, McClosky & Wilson, 2010, and chapter 4), nurses expressed concerns about nursing numbers at the bedside, threats to patient safety, and unmanageable workloads (COI report, 2006). In 2004, nurses' concerns were a major feature of the enterprise bargaining round (COI report, 2006; Lawless, 2014), and contributed to an agreement between DHB providers and NZNO to work in partnership on an agenda to improve safe staffing and provide healthy workplaces (Kai Tiaki New Zealand, 2005; Lawless, 2014). This collaboration resulted in a committee, a national review, a report, an operational unit, and two nurse safe staffing strategies (I overview these next and provide significant detail in chapter 4).

The two nurse safe staffing strategies – Escalation planning and the Care Capacity Demand Management (CCDM) Programme - have necessitated significant changes in thinking and practices from the frontline to national-level governance. For example, most hospital frontline nurses in the DHBs implementing CCDM must now enter data into a patient acuity system (predominantly TrendCare in the majority of NZ hospitals) every shift, for every patient, as this data is vital to the operation of CCDM. Myriads of new technologies, data gathering and reporting processes, software systems, hardware systems, meeting structures, and bipartisan decision-making groups have been formed to *operate* both strategies. The investment has been immense. However, in July of 2018 NZ nurses undertook a nationwide strike, the first in nearly 30 years, protesting wages, working conditions and the lack of widespread substantive gains on safe staffing.

The following account of a recent shift from a frontline nurse[4], which occurred immediately before the July 2018 nurses strike, illustrates the ongoing travails of frontline staff. Grace, a senior nurse on a casual contract works in an acute planning unit with a high turnover of patients on each shift; she recounts her experience;

> *"As soon as I got there I was handed the pager[5]. I was told there was no resource nurse[6] on, so no backup. I had a student nurse on the shift with me, and two new graduate nurses. That was it. I asked the shift coordinator going off shift what the new graduate nurses knew - were they going to be any use to me in an emergency? I told the Duty Nurse Manager that I would fax my details down to the bed meeting. The meeting is held in an office miles away from the unit, and there is no way that I could go off the ward for 30 minutes with this staffing. It wouldn't be safe" (Grace).*

Grace completed the required 'paperwork' (an electronic tick-box list, and patient acuity data entry) she has learned are the requirements for assessing and reporting staffing needs. Once data entry was completed, Grace received a system-generated assessment that there were sufficient nurses (in hours of nursing care) on the shift. However, for Grace, there was no option to state that the staff on the shift were made up of herself, two new graduates, and a student. In Grace's professional judgement, the shift remained short-staffed; short of skills, experience, and back-up for the routine work of the shift, as well as for an emergency. This account points to a gap between what the Nurse Safe Staffing Project strategies are intended to accomplish, and what is actually happening on frontline nursing shifts. Grace's experience is not an isolated incident, and I heard many such stories while travelling the country, promoting and supporting the implementation of CCDM. I began to experience some disquiet.

[4] Working in a DHB more than five years into implementation of Escalation planning and CCDM.
[5] Carried by the coordinator of the shift so that they can be notified of patients needing to be admitted to the unit.
[6] An experienced senior nurse able to provide additional skills, knowledge, and support to the nurses rostered on the shift.

A disquieting catalyst for the investigation

In 2009, I joined the Safe Staffing Healthy Workplaces Unit to contribute to the design and implementation of a nurse staffing strategy for NZ nurses[7]. Escalation planning was well established as a process (though not without problems, as subsequent chapters will show). I was employed to work on the strategy that ultimately became known as CCDM (or *the programme*). Several years into designing and implementing *the programme,* I began to hear stories from nurses that contradicted the newsletter and reports I was writing about the success of CCDM. In 2014, I was visiting DHBs as a CCDM Consultant, an invited expert on *the programme,* and had the opportunity to talk with people located in a variety of positions across these organisations, as well as with nursing union representatives. These meetings were characterised by talk of ongoing troubles with staffing, the complexity and challenges of meeting the requirements of CCDM, and the limitations of the environment in which *the programme* was being implemented.

In these meetings, I heard stories of how frontline nurses were redeployed (floated), more often than previously, to solve staffing problems in other wards, including nurses from maternity and paediatric services being sent to work in acute mental health. I heard from managers that the data for calculating nursing FTE was not accurate enough to trust, and that little could be done about this as there was no resourcing to invest in someone to improve this data. I heard that the television and computers screens designed to help create a whole of hospital view of staffing and patients were not purchased because this would require significant financial investment, as well as investment in time getting nurses (and others) 'up-to-speed' with these tools. I saw aggregated data from several electronic systems that showed the incidence of short-staffed shifts remained high, and that there were consistently high levels of a discrepancy between how many nurses were needed for a shift, and how many were actually available (sometimes too many and sometimes too few). I heard that the gaps in nursing FTE[8], identified by *the programme's* software, could not be employed because the ward's

[7] This was ultimately to be extended to other care settings and professional groups such as allied health.
[8] Full Time Equivalent.

budget was insufficient. In other words, few of the people in these meetings were talking about the success of Escalation planning and CCDM, and the problems they had solved.

People appeared to have different knowledge depending on where they worked and how they interacted with these two strategies. I *knew* that some DHBs were taking up the tools, putting up screens, teaching staff about the ideas and tools of the system and the new language that went with them (more about this in chapters 5,6,7,8). As a CCDM consultant, this uptake of *the programme's* requirements equated to the success I wrote about in newsletters and reports. Managers *knew* that data emerging from the tools of the strategies were to be the basis for decision-making, and while some welcomed this while others had concerns about the volume and accuracy of this data. Frontline nurses *knew* that sometimes when they completed the screens and changed the numbers and colours on them, they got a staffing response, and sometimes they did not. These discrepancies, tensions, and contradictions between knowledge and experience were the catalyst for this study. I wanted to know what was actually going on[9].

Gaps in existing knowledge

In preparation for this research, I began to investigate where there was contested knowledge, and where there were gaps in knowledge, particularly concerning the operation of staffing strategies. The primary nurse staffing research is dominated by quantitative methodologies, particularly retrospective observational studies of patient outcomes, system, and staffing data. Although some of these studies involve millions of points of data, incorporate numerous countries, and are published in high ranking journals (such as Aiken et al., 2014) little of this knowledge is easily or directly translatable into operational strategies (Griffiths et al., 2016). This disconnection between the research and its application to practice represents the first gap in knowledge. Why is the substantive and powerful research not sufficient for practical interventional design?

In addition, there are few if any primary research studies that occur before, simultaneously, and following the implementation of a nurse staffing intervention. Rather, these studies, employing both quantitative and qualitative approaches, assess

[9] I provide a detailed context to this study in chapter 4.

nurse reported changes during or following the intervention, but this is often not matched with the contemporaneous collection of system, patient outcome, or staffing knowledge[10]. The points of experience, knowledge, and data are not occurring in real-time with each other. There is a gap in knowledge about how interventions are actually taken up and operated in the everyday work of organisations.

In NZ, the nurse staffing strategies, Escalation planning and CCDM, are soundly evidence-based. These tools build on the extensive research literature, and the knowledge gathered by the Safe Staffing Healthy Workplaces Committee of Inquiry (SSCOI)[11], and specific to NZ hospitals. An evaluative study of the implementation of *the programme (*Hendry, Alione, & Kyle, 2015) identified both gains and potential improvements. Objective reviews of discrete aspects of CCDM validate the accuracy and value of these elements, and yet, frontline nurses are not consistently materially better off after a decade of development and implementation. There appears to be a gap in knowledge between how Escalation planning and CCDM are imagined and how they are done. I set out to investigate what was *actually* happening in NZ to contribute to closing these gaps in knowledge.

The significance, rationale, and purpose of this research

This study is significant because among the extensive nurse staffing research there is a dearth of ethnographic investigations of how nurse staffing knowledge and interventions are actually operated by people in their everyday work; day after day, month after month, year after year. Between the research participants and myself, this study incorporates close to 10 years of observational and experiential real-time operation of NZ's two nurse-staffing strategies. Therefore, the findings of this research have the potential to contribute new knowledge to closing these identified existing gaps.

The rationale for this research stems from the acknowledgement that in NZ nurse-staffing strategies are being developed and deployed, but are yet to make a significant difference to frontline nursing numbers and workloads, nor address nurses'

[10] The exception being Twigg et al., (2011) whose primary research study addressed approaches for ascertaining requisite nursing levels for effective staffing across the team skill mix (registered nurses, health care assistant and so on).

[11] See the glossary at the start of this chapter.

concerns about patient safety. Substantial commitment, effort, intelligence, and resources have been directed into these strategies as 'staffing solutions'. In NZ, the Nurse Safe Staffing Project has required and precipitated significant changes in thinking and practice without comparable material improvements being achieved for frontline nurses. In short, the problems, as frontline nurses experience them (sometimes frequently) are not being resolved. Even DHBs implementing these strategies for close to a decade still have several short-staffed shifts on each day of care, and little recourse to resolve them.

The purpose of this research is to produce a detailed investigation, analysis and explanation of how the Nurse Safe Staffing Project *actually happens* in the everyday settings of NZ hospitals. Four research questions guide this inquiry.

Research questions

1. What are the material conditions under which short-staffed shifts occur?
2. What do nurses actually know and do on short-staffed shifts?
3. What accounts of their staffing related knowledge and work do nurses produce for others?
4. What influences the nurse staffing decisions made on the day of care, and in annual budgeting rounds?

Any research endeavour must consider scope. There is a great deal more to creating and maintaining safe staffing and healthy workplaces than simply increasing the number of skilled nurses at the bedside. I acknowledge that the scale and complexities of the nurse staffing landscape are vast with multi-layered, social, historical, cultural, political, and gendered features. However, in this project, as a necessity of scope, I am holding a magnifying glass over the territory of frontline nurses as 'the place to start', and bringing initial focus to the knowledge, skill and practices nurses employ there to try to *make things work* on short-staffed shifts.

Researcher credibility and location as a committed insider

I know the experience of being a frontline nurse and of being a frontline nurse on a short-staffed shift. I worked many short-staffed shifts in 18 years as a clinical children's nurse. I also know the experience of being part of a team of committed nurses

working on staffing strategies for frontline nurses. I identify myself as a 'committed insider' (Brinkman, 2012), to this research based on my experience and knowledge, as well as my passionate interest in understanding what is actually happening with the operation of the Nurse Safe Staffing Project.

My interest, to quote G. W. Smith, is "practical and political, rather than theoretical and speculative" (2014, p. 22). I am not intending to produce a theory about what is occurring, nor to seek consensus among the proponents and critics of *the programme,* or critique its elements or implementation. Nor is the endeavour to seek scapegoats or cast blame. The objective of this investigation is to discover, interrogate, and provide a detailed explanation of what is actually occurring in the everyday operation of the Nurse Safe Staffing Project. I intend to map out and detail actual goings-on and **how** these are organised to occur as they do. To accomplish this intention, I am employing a method of inquiry called institutional ethnography.

Introducing institutional ethnography

Institutional ethnography is a method of inquiry developed over several decades by feminist and activist Dorothy Smith. Smith (1996, 1999, 2003) contends that knowledge is socially constructed and that how knowledge organises and (sometimes) controls peoples' everyday lives is discoverable in their everyday activities and the contexts of their lives. Rankin and Campbell, state that "[t]he distinctive contribution of institutional ethnography is in making links empirically – not theoretically - between everyday life and its specific social organization" (2009, page number not supplied). This empirical linking is accomplished by focusing on the actual material things people can be seen doing, on the words they use and on the texts (documents, screens, presentations) they interact with (Campbell & Gregor, 2004; Smith, 2006).

Institutional ethnography is a densely theoretical and conceptual approach to investigating the real and tangible things going on in a given research setting. Observation, interviews, researcher experience, and textual analysis are the techniques employed to access the real and tangible aspects of research participants' experiences

and contexts (Campbell, 2006). The endeavour is to discover, describe and explicate[12] the political, social, historical, gendered and economic contours of people's experiences (Campbell & Gregor, 2004; Bisaillon, 2012b). A standpoint (explained shortly on page 13) is employed to anchor the inquiry and to focus and orientate the course of the investigation amid the vast social landscape of the topic (Smith, 2006).

Institutional ethnographers commonly invoke the metaphor of a map to describe how they discover connections between research participants, the work they do, their talk (discourse), the documents and technologies they employ and so on (Smith, 2003, 2014; Turner, 2014). These organising connections (termed social and ruling relations, overviewed shortly and explained in detail in the next chapter) are how the social organisation of participants' knowledge and experiences, in different times and various places, can be uncovered, illuminated and explicated. Explicating these connections, and the social organisation they bring into view, is the analytic work and product of an institutional ethnography (Campbell, 1984; Rankin, 2017b; Smith, 1999, 2003). (I detail institutional ethnography further in chapter 2).

Social and ruling relations

The social relations of our lives organise what actually goes on for us (Campbell & Gregor, 2004), but we take much of this organisation for granted. In their primer on institutional ethnography, Campbell and Gregor (2004) offer the example of university students boarding a bus in a Canadian city. What is observable is that each student shows a card to the bus driver as they board the bus, which he acknowledges with a nod (Campbell & Gregor, 2004). What cannot be seen in this exchange is the work the student has done to obtain the card, have a picture taken, learn the bus schedule and the campus layout in order to arrive at class on time. Also invisible in this exchange is the work of the campus officials who authorise the student card process, and how the bus driver is organised to expect to see and check each card as authorised access to the bus. This social organisation goes on in the background, and people enter into its courses of action on the taken for granted assumption that this is how things are done.

[12] A term commonly used in institutional ethnography that goes beyond explanation to clarification, illumination, and exposition.

Ruling relations, as Smith (1996) conceives them, are social relations but differ in that they accomplish the insertion of institutional interests and priorities into people's activities. In their book, Rankin and Campbell (2006) describe nurse Linda and nurse Janet's activities associated with the routine discharge of a patient from a surgical unit. The patient is discharged nauseated, in pain, having been advised to buy over the counter analgesia and anti-nausea medication on the way home and handed a cardboard receptacle in case she vomited in the car (Rankin & Campbell, 2006). In the example, the authors acknowledge that the discharge of this patient does not appear to reflect professional expectations and documented standards for nursing care, but do not give this example to criticise the nurses involved. Rather, they identify that what is organising nurse Linda's priorities is her knowledge that all patients are to be discharged by 11 am. The professional ethos and practice of each nurse, and the specific needs of this particular patient, are overridden by the hospital priority of a timed discharge.

This project intends to be able to provide these types of explanations, like the two above, of the social and ruling relations organising the operation of the Nurse Safe Staffing Project in NZ hospitals. The starting point for this investigation is the everyday experiences of frontline nurses in direct patient care and shift coordination roles.

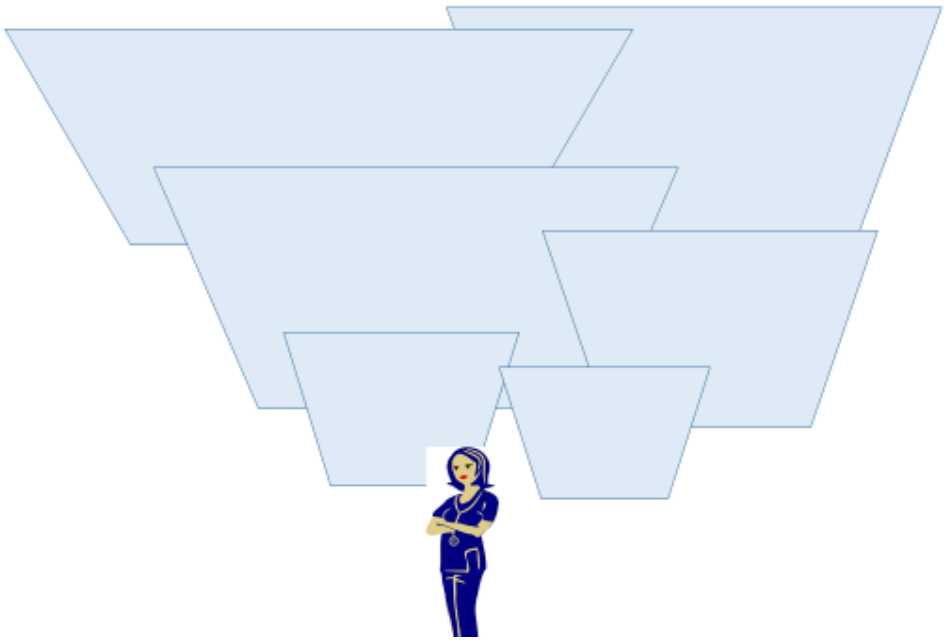
Standpoint as the starting point

As the researcher, I adopt a standpoint alongside frontline nurses and pay attention to how they know and talk about their everyday day work and the context in which it occurs. I burrow down into the detail of their actual work as only they can know and speak of it. Talking to them about short-staffed shifts, I pay attention to the problems, contradictions and frustrations they experience. These problems and contradictions often indicate chafe points, instances where their knowledge and work comes into tension with priorities that arise from outside the context and urgencies of the short-staffed shift. I am also interested in the texts that nurses are reading, writing, and acting on (more on texts shortly).

Standpoint participants are what Smith (2006) calls the small heroes at the bottom of a vast complex of socially organised knowledge. The illustration below (adapted from Smith's version) has a frontline nurse standing beneath a mosaic of

overlapping empty boxes. These boxes represent the social and ruling (governing) relations that organise frontline nurses' experiences of and on short-staffed shifts. An example of what might populate these boxes is the assessment and regulation of nursing knowledge and practice by the nursing competencies of the New Zealand Nursing Council[13]. The competencies (a text) organise the issuing of an annual practising certificate (a text), as proof of competence to practice. Nurses enter this textual process because they must have an annual practising certificate to be employed and to work as a nurse. What nurses may not know is that behind this regulatory process is the State's interest in protecting the public from nurses, and the regulation and control of the profession (social and ruling relations).

Figure 1 Smith's (2006) small hero concept



In chapter 9, this image in figure 1 will appear again with the boxes populated with the social and ruling relations discovered in the course of the investigation.

[13] Body regulating the knowledge and practice competence of nurses and Health Care Assistants, HCAs, in New Zealand.

Texts as social mediators

Smith (2005) asserts that social and ruling relations are omnipresent, taken for granted and often invisibly acting in institutions. They manifest themselves in standardised and replicable texts which move from place to place and person to person (Campbell & Gregor, 2004; Smith, 2006); such as the competency assessment and annual practising certificate process described on the previous page. In this project, I focus on the texts (documents, screens, data entry) nurses produce to communicate their knowledge and experiences on short-staffed shifts to people located elsewhere in the organisation. I will follow the trail of these texts into other settings and examine what the people there do with them. The objective is to trace texts in a documentary chain as far as possible to establish how they organise multiple people, in multiple settings to talk, think and act in similar ways.

As the investigation proceeds, the conditions that establish short-staffed shifts and the troubles with resolving them will be examined. I will trace and interrogate how the texts of the Nurse Safe Staffing Project are taken up in frontline settings, and elsewhere. Using the concept of a map, a commonly employed device in institutional ethnography, I will chart and trace the locations associated with textual processes. What happens to the texts in each setting will be examined, as well as the actions that are taken as the text moves from place to place. This charting practice brings into view social organisation in action (Smith, 1999, 2003).

Structure of the thesis-chapter summaries

Chapter 1, see the conclusion to this chapter.

Chapter 2 introduces institutional ethnography as the approach to this inquiry. Placement of this chapter was deliberate as employing institutional ethnography requires an ontological shift in the thinking and practice of the researcher before engaging with the literature, framing the study, and entering the field. In chapter 2, the rich and dense theories and concepts of the approach are unpacked and described. This approach exemplifies how I have learned about the features of the method, and will aid the reader to see how these have framed the investigation. The explanations and

examples in this chapter will also help the reader make sense of the dense work of analysis and the findings of the research.

Chapter 3 describes the structural and procedural approaches to the research. Ethical considerations, data collection methods, analytic approaches, and issues of research validity and warrantability are carefully considered. The fundamental importance of reflexivity in institutional ethnography and how reflexive practice has been woven throughout this investigation is presented.

Chapter 4 locates this investigation in relation to existing research knowledge and to the Nurse Safe Staffing Project in NZ. The literature is summarised, highlighting investigative focuses, key debates and identifying the research (and researchers) considered the 'authority' on nurse staffing. I trace how these authorised ideas in the research have been taken up and incorporated into the development and implementation of nurse staffing strategies in NZ. I map a chronological development of the Nurse Safe Staffing Project, highlighting specific milestones and considering their impact on the trajectory, organisation and impacts of the project.

Chapter 5, the first of the findings chapters, is an ethnographic journey through a short-staffed shift told by multiple frontline nurses as standpoint participants. This journey illuminates some of the knowledge, work, processes, troubles and tensions of nurses' experience of short-staffed shifts. Several puzzling contradictions come into view from nurses' experiences. First-level analysis of these contradictions leads to the formulation of a problematic puzzle to guide subsequent data collection and frame the analytic arguments of the thesis.

Chapter 6 provides context to the texts frontline nurses described in chapter five, which they produce as textual accounts (textual versions) of the short-staffed shift. Three of these texts are explained in detail including their (conceptual) purpose, a short history of how they come to be a feature of frontline nurses' work and how nurses take up these textual tools. Nurses' concerns about where these texts go, who looks at them and what they accomplish are detailed. This chapter focuses on the work nurses do to translate their knowledge, decision-making and skilled nursing work into textual forms. I argue that these textual forms are poor representations of what is actually occurring because

they are partial and conceptual. I also argue that these textual accounts reconstitute actual people and their experience into abstract stand-ins such as numbers and colours. I show how these standardised abstractions can be consequential for nurses and patients.

Chapter 7 follows the textual accounts, introduced in the previous chapter, as they leave the short-staffed shift and enter into staffing decision-making processes elsewhere in the hospital on the day of care. Nurses' knowledge about staffing and the risks to patients is located, contextual, immediate and specific. Decision-making managers in meetings outside the short-staffed shift base their decisions on the textual accounts (the stand-ins of numbers and colours) nurses have produced. How these managers know patients' needs, nurse staffing, risks, and nursing workload, based on these textual stand-ins, is materially different from how nurses know these things. In this chapter, I argue that this disparate knowledge has tangible, discoverable and consequential effects on the organisation of frontline nursing work and the safety of patients on the day of care.

Chapter 8 follows aggregated versions of the textual stand-ins into annual cycles of calculating and budgeting for nursing staff (FTE[14]). Here, research participants who are managers and union members are involved in decision-making meetings and receive aggregated versions of numerous shifts, patients and staffing patterns from the previous 12 months. I describe the people, conversations, readings and decisions of these meetings to illustrate socially organised knowledge in action in this setting. I show how decisions made in these meetings are accountable to different requirements and priorities than those of frontline nurses. I argue that location-specific knowledge has differing power and authority, and show how one organises the other in ways that displace situated professional expertise and reorganise frontline nurses' work, knowledge and ideas about professional accountability.

In chapter 9, I close the analytic loop of the investigation by revisiting the questions and problematic of the project and summarise the substantive findings and arguments made. I identify that the findings of this research have generated a narrative

[14] Full Time Equivalent

that runs counter to the authorised view of the Nurse Safe Staffing Project, and CCDM in particular, as an 'agreed solution' to nurse staffing issues. I offer material and empirical findings of what is actually happening to create short-staffed shifts, as well as what is happening on and because of them. I explicate the social and ruling relations organising the experiences of frontline nurses as the small heroes of Smith's (2006) diagram. I consider the implications of the study in relation to existing knowledge in the research literature and the implementation of nurse staffing strategies in NZ and elsewhere. Opportunities to change the status quo are offered. The study is evaluated by reflecting on the approach used and project limitations and includes a summary of investigative paths not followed.

Conclusion

Chapter 1 introduces the study, the problem being researched and touches on the background to the problem, providing context to this investigation. I identify gaps in existing knowledge and the potential contribution this study makes towards reducing these gaps in NZ and elsewhere. The purpose of this research is identified, along with the research questions and scope of the inquiry and the introduction of institutional ethnography as the investigative approach. I identify my location in relation to the research terrain as a committed insider and my credibility as a researcher based both on knowledge and experience of short-staffed frontline nursing work and on my in-depth knowledge of the nurse staffing strategies being employed in NZ. A single research endeavour cannot substantively map the vast, dense and complex terrain of the entire Nurse Safe Staffing Project. Instead, this research offers a sample, mapping a portion of the whole, charting *some* of the social and ruling relations that are orchestrating the current state. The next chapter takes a deep dive into institutional ethnography as a research strategy, making available some of the conceptual and theoretical ideas of the approach that frame this inquiry.

Chapter 2 –Approach to the inquiry

Institutional Ethnography as a research strategy

Introduction

The purpose of this chapter is to introduce the research strategy of this inquiry – institutional ethnography. I describe the philosophical, formal, and tacit alignment of institutional ethnography with the intent of the research and my stance as a researcher. A short history of the methodology leads into a description of the dense conceptual and theoretical lineaments that frame the structure, approach, and analytic work of an institutional ethnography.

Why institutional ethnography and not a different approach?

Numerous considerations are factored into selection of a research methodology, including the research question being asked, the type of investigation to be produced, how well the methodology aligns with the formal theories of the researchers' discipline, as well as with the tacit beliefs and stance of the researcher (Badenhorst, 2018; Denzin & Lincoln, 2003). The research problem this project investigates is why short-staffed shifts, leading to threats to patient safety and unmanageable workloads, are still occurring ten years after work began on resolving them. The 'solutions' (staffing strategies) developed have, in theory, the potential to resolve short-staffing, but have not done so. The research questions and approach of this investigation seek to uncover how short-staffed shifts occur and continue to occur, and how it is that the nurse staffing strategies have not delivered promised resolutions.

In order to investigate the research problem, I sought a critical approach. I wanted a way to interrogate the operation of the nurse staffing strategies that would see behind taken for granted assumptions about them, including my own. As part of my consideration of possible frameworks, I examined the 'big three' qualitative approaches ethnography, phenomenology, and grounded theory, (Korstjens & Moser 2017), which have been popular approaches employed for decades in nursing research. In addition to these and other approaches commonly employed in nursing research, such as discourse analysis, I examined less familiar techniques such as social constructivism, critical realism,

human geography and actor-network theory (Brinkman, 2012; Fouberg, Murphy & de Blij, 2015; McHoul & Grace, 1993; Stanley & Wise, 1990). I was looking for an approach that would access what was actually happening behind what people say and do. With this approach in mind, and because I was an insider in the chaotic environment in which I was conducting the research, I narrowed my exploration to ethnographic approaches.

With roots in both sociology and anthropology, there are many different types of ethnography arising in grounded theory (Glazer & Strauss, 1967), symbolic interactionism (Prus, 1994), and anthropological ethnography (Fetterman, 1998). These approaches employ procedures such as generalising or conceptualising the data, and some set out to prove/disprove an existing theory, or triangulate data to 'validate' findings (see Bisaillon, 2012b and Campbell and Gregor, 2004 for a summary of distinguishing characteristics and key authors).

Following a lead from one of my supervisors, I investigated institutional ethnography, as an emerging approach to critical feminist nursing research in NZ (Adams, Carryer & Wilkinson, 2015). Although feminist epistemologies[15] vary, they tend to share a focus on how peoples knowledge and experience are 'particular and concrete' rather than conceptual and abstract (Encyclopaedia of Philosophy, n.d). They also take seriously the ways in which people are entangled in the social orchestration and control of their lives and work (Mann & Kelley, 1997; Olesen, 2003; Schumann, 2016). This epistemological focus, coupled with the emancipatory and consciousness-raising foundation of institutional ethnography was congruent with my worldview and researcher stance. They were also congruent with my research intention to investigate, for nurses, what is actually going on in the operation of the Nurse Safe Staffing Project and its strategies. I set out to gain a greater understanding of the theory and application of institutional ethnography.

Sources of knowledge on institutional ethnography

To gain a comprehensive understanding of institutional ethnography, I read closely and carefully a number of Dorothy Smith's publications (Smith, 1974, 1983, 1987,

[15] Epistemology - The theory of knowledge especially in regards to its method, validity, and scope

1988, 1990a, 1990b, 1996, 1999, 2001, 2002, 2004, 2005, 2006, 2007, 2014). In addition, I read numerous edited compilations of institutional ethnography projects (Griffith & Smith, 2014; Smith 2006, Smith & Turner, 2014), and a small number of explanatory and critical texts written by others (Campbell, 2010; Campbell & Gregor; 2004; Carroll, 2010; Norstedt, & Breimo, 2016; Stanley, 2018; Walby, 2007). I was also fortunate to attend an institutional ethnography workshop with Dorothy Smith and Susan Turner (one of Smith's early students) in during the first year of my study, which was instrumental in clarifying some of the complex conceptual ideas of the approach, some of which I detail shortly.

Several other sources of knowledge were also employed. I read widely, other institutional ethnography projects by Masters and Doctoral students, and their publications, paying particular attention to studies involving frontline nurses (Adams, 2017; Campbell, 1984; Melon, 2012; Melon, White & Rankin, 2013; Rankin, 2004; Rankin & Campbell, 2006). I am also a member of a monthly online institutional ethnography group who reviewed newly released institutional ethnography publications and projects and discussed particular concepts of the approach, and how to conduct and write up analysis. The online group members also discussed discrete aspects of their own studies in depth, which was an effective way to explore the application of the approach to different social contexts. The remainder of this chapter summarises what I have learned from these many sources.

Beginnings – development of an alternative sociology

Already a feminist and activist, Smith's work on her alternative sociology began in earnest during the second wave of feminism in Canada, where she found herself experiencing two different socially constructed realities simultaneously (Smith, 2006). One, in which she was a mother engaged in the everyday work of parenting, checking homework, reading stories, shopping for food, cooking, cleaning and so on, and the other, as a teacher of traditional Sociology in a university department (Smith, 1987, 2003). Positivist sociology, as Smith was experiencing it, followed the model of Auguste Compte, the 'father' of traditional sociology, who believed that the natural sciences with rigid, linear, and methodical empirical scientific methods (such as experiments and

statistics) could provide valid data on how society operates (Crossman, 2018; Gottfried, 2019). The key characteristics of the traditional sociological approach were to objectify *what* was being studied or subject *who* was being studied and to maintain researcher objectivity to keep the science 'pure' (Crossman, 2018).

Of the traditional approach, Smith states "sociology created and creates a construct of society that is specifically discontinuous with the world known, lived, experienced and acted in" (1990b, p. 2). Such a construct, according to Smith, creates an objectifying break whereby the particular people and the material of the actual experience disappear into a pre-conceptualised account of the occurrence (Smith, 1990b, 1999). Smith's experience aligned with the feminist discovery of the time, which was that women "had been living in an intellectual, cultural, and political world, from whose making we had been almost entirely excluded" (1987, p. 1). Campbell states, of Smith's 'bifurcated' experience, of being a mother and a traditional sociologist, that the "[w]ays of knowing that were relevant there [at home], even essential to giving and supporting life, were not recognised as a legitimate basis for knowing in the other world" [academic sociology] (2003, p. 13).

Smith's difficulty was with the way sociology constructed mothering in abstract and conceptual terms from which individual mothers and children, and their unique knowledge and experiences, were absent (Smith, 1987, 2006). In her quest to develop an alternative to traditional sociology, Smith began exploring her own experiences, and those of the women conventional sociology excluded (Smith, 1996; Stanley, 2018). Campbell states (of Smith's development of the alternative sociology), "she didn't want to accept the limitations of a technique that separated out for analysis an event, a conversation, or some other practice from its place nested in the lived world of the subject" (2003, p. 12).

Beginning her project to develop an alternative sociology (for women) Smith met Erving Goffman, who supervised her doctorate, and, at the time, was writing *The presentation of self in everyday life* (1959). Along with Goffman's thinking, Smith says she 'unashamedly borrowed' and took up ideas from various other thinkers and writers, examining, reinterpreting, and extending many of the ideas as she developed the

alternative sociology (Carroll, 2010). Table 2 below contains a list of some of these contributing thinkers and some of their influential ideas and writing.

Table 2 Influences on Smith's development of an alternative sociology

Contributing thinkers	Influential ideas	Influential publications
Erving Goffman	Looking at what people actually do	*The presentation of self in everyday life* (1959)
George Herbert Mead	The conceptualisation of language as coordinators of individuals consciousness and actions	*Mind, self and society from the perspective of the behaviourist* (1962)
Karl Marx & Friedrich Engels	Materialism, ideology, and the political economy	*The German Ideology*, Marx & Engels (translation 1976).
Michel Foucault	Knowledge, power and discourse	*The order of things: An archaeology of the human sciences* (1970) *The archaeology of knowledge: And the discourse on language* (1972).
Harold Garfinkel	Critique of the generalising and abstracting formulations of sociology Ethnomethodology	*Studies in ethnomethodology* (1967)
Valentin Volosinov	The conceptualisation of language as coordinators of individuals consciousness and actions	*Marxism and the philosophy of language* (1973)
Mikhail Bakhtin	Primary and secondary speech genres, utterances, discursive chains	*The dialogic imagination: Four essays* (1981)*, and Speech genres and other late essays* (1986)

(Table constructed from Bisaillon & Rankin, 2013; Campbell, 2003, Campbell & Gregor, 2004; Carroll, 2010; DeVault, 2014; Smith, 1999, 2006; Smith & Turner, 2014). For more on the points of congruence of these concepts/theories with Smith's development of

institutional ethnography, as well as points of departure, see Smith, (1987, 1990a, 1990b, 2005), Carroll (2010), and Stanley (2018).

The overarching ontology of Smith's sociology is that knowledge is socially constructed and that people's everyday lives and work are socially organised by this knowledge (Campbell & Gregor, 2004; Smith, 1990a, 1999, 2005). Smith resists the positivist view that decontextualised knowledge can be constructed from an objective Archimedian point located outside the social settings and conditions of people's lives (Smith, 2006). Speaking of research located in everyday life Brinkman states, "we need to desacralize knowledge and admit that if knowing is a human activity it is always already situated somewhere" (2012, p. 32).

The social knowledge constructed by people and coordinating their lives is local, contextual, specific, historical, embodied, personal, cultural, interactive, discursive, authoritative, institutional, gendered, and so on (Brinkman, 2012; Darville, 1995; Smith, 1999). Smith (2006) says that the socially constructed knowledge to be discovered is perpetually there but also perpetually in motion, active among actual people and the activities in everyday life. In order to be able to access and investigate socially constructed knowledge in action, Smith developed a method of inquiry - institutional ethnography.

In the following section, I examine some of the concepts/theories and methodological devices of institutional ethnography. By breaking down the complex method and understanding its conceptual pieces, as other institutional ethnographers have done, (see Benjamin & Rankin, 2014, Bisaillon, 2012b; Deveau, 2008; Rankin, 2017a, 2017b), I was able to interpret and employ them in the framing and analytic work of the investigation. Therefore, while acknowledging that an institutional ethnography inquiry is informed by a complex set of intrinsically intertwined concepts and theories, I believe this somewhat artificial separation aids the reading of the analysis chapters and helps make sense of study findings.

Institutional ethnography – an approach to inquiry

There have been a variety of approaches taken to explaining the lineaments of institutional ethnography (see Benjamin & Rankin, 2014; Bisaillon, 2012b; Campbell, 2003; Deveau, 2008; Rankin, 2017a, 2017b; Smith, 2002, Stanley, 2018; Walby, 2007). There is no simple linear progression through the ideas of the method because they both organise how an institutional ethnographer thinks about the research, as well as how they are employed directly as interrogative and analytic techniques. I begin with some of the larger overarching concepts - social and ruling relations, ideology, institutions, materiality, and discourse. I then offer descriptions of methodological ideas associated with 'people' and with 'texts', as these are central to accessing the *material* of socially constructed knowledge, before moving to aspects associated with the field and analysis – work, disjunctures/problematics, and mapping. For a number of the elements, I begin with theory, incorporate explanation by proponents and critics of the approach, and provide examples from various completed institutional ethnography projects.

Social and ruling relations

McCoy provides a relatable example of social relations, she states "you get out of bed, turn on the tap, make coffee, read the newspaper you collected from your front step – and you are participating in [social] relations (municipal water systems, international trade, the mass media)" (2006, p. 111). These are the taken for granted and seemingly mundane practices of everyday life that we expect with almost no detailed knowledge of what is involved in the production of drinking water, coffee, and newspapers. The work of producing these commodities is invisible to us, and so are the material conditions and experiences of the people who undertake this work; unknowingly we may be hooked up into drinking coffee that is harvested and processed by an exploited workforce.

Discovering and explicating what is actually going on for people in a particular research setting must be connected, by Smith's (1990, 1999) conception of social relations, to what is going on for others located elsewhere. Institutional ethnography's fundamental focus is on accessing and explicating these social relations, from numerous

different social locations, and from the texts in documentary chains (Bakhtin, 1981; Turner, 2014). Imagine each participant and text as pins on a map of the research terrain. The work of the investigation is to trace, map, and explicate the social relations between pins that connect and coordinate people in their various locations. However, as Dobson qualifies, a social relation "is an organum; it is an instrument used to explicate organization rather than something to be looked for" (2001 p.148). Using people's experiences, knowledge, talk, texts, and work, the social relations can be traced and mapped to piece together how organisation is *actually occurring*; social organisation in action (Campbell & Gregor, 2004; Carroll, 2010; Smith, 2006).

Ruling relations differ from social relations. Ruling relations are not neutral; they privilege authoritative and ideological forms of knowledge, which displace people's local knowledge and experience, and serve to regulate and even control society (Bisaillon, 2012b; Campbell & Gregor, 2004). Wright defines ruling relations as "the textual venues (such as legislation, governing boards, program planners, management and administration) where power is perpetuated in society across multiple sites" (2003, p. 244). de Montigny states,

> For women, working people, immigrants, racialized and cultural minorities practices of knowledge production are not neutral, nor are they of mere academic interest. Existing practices of knowledge production are experienced to be central for the reproduction of marginalization, stigmatization, exploitation, and oppression of people (2017, p. 358).

The intention of an institutional ethnography is to make visible how ruling knowledge excludes local experiential knowledge subsuming what is actually happening, and inserting authoritative interests into the knowledge and work of people in multiple different locations (Campbell & Gregor, 2004; McCoy, 2006; Smith, 1990a, 1996).

Reading institutional ethnographies and publications that bring into view socially organised knowledge and the orchestration of everyday experience has been critical to learning how to apply these concepts to this project. Campbell (1984) and Rankin's,

(2004) projects explicated ruling relations orchestrating nursing knowledge, talk, and work to accomplish accountability practices, and meet organisational priorities and interests over those of nurses and patients. In de Montigny's chapter (in Smith & Turner, 2014) professional and authoritative training "take over from the sensory responses" (2014, p. 173) in a child protection case exemplifying how we are all active (consciously and unconsciously) in the orchestration and perpetuation of our own and others experiences. Webster (2009) explicating evidence-based best practice for stroke, and Eastwood, (2014) explicating forest preservation policy documents in the United Nations, both bring forward the machinery, discourse and encoding of governing ideological knowledge that can be traced into the actual practices of actual people in actual places.

Ideology

Smith takes ideology from Marx and Engels (trans, 1976), not in the political sense, but in the sense that the ruling regime produces knowledge in forms that perpetuate and sanction the social relations of ruling (Deveau, 2008; Smith, 1999). Smith states,

> I view the ideas, images, and symbols in which our experience is given social form not as that neutral floating thing called culture but as what is actually produced by specialists and by people who are part of the apparatus by which the ruling class maintains control over society (1987, p. 54).

From the position of dominance, ideologically produced institutional knowledge (including that in discourse and texts) becomes legitimised (Bisaillon, 2012a), and pushes out and excludes other ways of knowing. An example of legitimate knowledge that overrules others was provided (in the previous chapter) from Rankin & Campbell's (2006) example of the discharge of an unwell patient to meet the 11 am discharge target. The organisational ideology of every discharging patient being *fit for departure* by 11 am is not substantiated by nurses' actual knowledge of individual patients and their specific needs.

Institutions

How institutional ethnography investigations conceive of and treat institutions as a fundamental concern of the research are important concepts for the neophyte ethnographer to grasp. Smith (1990b, 1999, 2006) defines institutions as the apparatuses of administration, management, education, healthcare and professional authority. According to Smith, the social relations, knowledge, and practices of these institutions "organize, regulate, lead and direct contemporary capitalist societies" (1990b, p. 2). The work of an institutional ethnography project requires the researcher to keep the institution in view and trace accurately and tangibly how its discourses, texts, and courses of action constitute the conditions of the research setting, and the experiences of the people there (McCoy, 2006). The analytic effort targets the identification of texts and discourses that carry the standpoint of the institution (Hamilton & Campbell, 2011), which privileges ruling interests over those of locally situated frontline workers and which organise the material conditions of their everyday experiences.

Materiality

In order to trace, map, and explicate the social and ruling relations, one must first access them. Smith (1987) says that institutional ethnography relies on a method of thinking that starts in the same world as the one in which we live. To this end Smith takes up Marx and Engel's (1976) materialist formulation that begins among individuals, that looks at what they are doing and the material conditions under which they undertake their activities in their everyday lives and work (Smith, 1987). The focus and emphasis of the investigation, Smith states, is on the "world that *actually happens* and can be observed, spoken of, and returned to…" (1987, p. 123).

In an institutional ethnography project, attention to the material conditions focuses on what people are actually doing, as well as the standardised, replicable texts people are using as part of their everyday activities (Campbell 2014; Smith, 1999). In the research setting of this project, nurses can be seen sitting at computer stations entering data, writing in patients' notes and updating whiteboard lists. These material and observable actions that incorporate texts provide the access point to social organisation. Excavating behind these material actions begins the process of learning how nurses

know to perform this work, as well as charting how the knowledge and actions of these nurses are connected to those of nurses in other settings and to organisational processes and priorities.

It is vital to remember; however, that texts do not construct or speak for themselves; they are without agency (Dobson, 2001). Instead, texts are constructed, updated, adapted and activated by people using socially constructed technical, professional, social and context-specific knowledge and discourses. It is not possible to separate people's activities, discourses and texts because it is their work with and on behalf of discursively organised texts that brings social organisation into being (Smith, 2006).

Discourse – words, utterances, and texts

During the development of a sociology for women (which later was reframed as a sociology for people) Smith had to work with ideas about discourse (and sociology) constructed solely by men, that produced, reinforced and reified concepts that made sense in the world constructed by men (Campbell, 2003). Many such ideas and concepts were used as if they were self-evident (Campbell, 2003). In order to get behind and underneath the use of these abstract concepts, Smith's thinking and formulations over time focused on the role of situated discourse and discursively organised texts as the material means to interrogate taken for granted practices of knowing that arose from the hegemony of men's sociology and society (Campbell, 2003; Smith, 1983, 1990a, 1990b). These interrogative techniques remain intrinsic to institutional ethnography's focus on digging through taken for granted language to the actual work of individuals that these conceptual discourses obscure.

Smith's reformulation of the ideas of several philosophers and writers (Mead, Volosinov and Bakhtin) on discourse, included concepts such as the coordination of consciousness, connections between peoples situated discourse and institutional discourse, abstraction and power (Campbell, 2003, Carroll, 2010; Turner, 2014). Words, utterances and spoken and textual discourse connect peoples' consciousness and coordinate their activities across multiple settings, expressing the social organisation in

which they are enmeshed (Campbell & Gregor, 2004; Dobson, 2001; Smith, 1999). Smith states that,

> In what people say or write, hear or read, we can find at least one important dimension of social organization as a local accomplishment. I am interested in how people are putting our worlds in common together in the ongoing of our everyday lives (2018, conference presentation abstract).

Campbell states that Smith took up Bahktin's (1981,1986) ideas about speech genres, utterances and discourses as local accomplishments in her thinking and focus, describing "discourse-driven dialogue" (2003, p. 121). The social comes into being through language (Smith, 1999), through people's talk[16] of the material conditions, activities and experiences of their everyday lives. Campbell and Gregor state this represents a central tenant of institutional ethnography, that "trans-local and discursively-organised relations permeate informants' understandings, talk and activities" (2004 p. 90).

Campbell (2003) describes the ideas of Wittgenstein (1953), and Smith's graduate education with George Herbert Mead as influential on Smith's thinking about abstraction as an accomplishment of discourse and discursive concepts. In tracing the organisation accomplished by discourse, Smith sought to identify how to bring things back from the conceptual and abstract to the complex, problematic and *actual* ways in which people talk about their material realities (Campbell, 2003), in order to see what is obfuscated by these taken for granted and authorised ideas. Conceptual and technical discourse carries traces of social and institutional organisation that the institutional ethnographer must listen for in the talk of participants. Here is the opportunity to burrow down into what participants are actually doing and saying, and what is actually happening in individual situated experiences.

This type of obfuscation and the resulting production of differently organised knowledge can be seen in an example from Rankin and Campbell's (2006) book, *Managing to nurse*. Managerial concepts of discharge and length of stay and abstract

[16] Which Bakhtin conceived as the primary speech genre made up of utterances in a discursive chain.

health data associated with costs become the basis for a manager to re-categorise shoulder-repair surgery patients to a day of care ambulatory pathway (Rankin & Campbell, 2006). The nurses Rankin observed and spoke with during her fieldwork on the ward had different knowledge and experience of how well these patients fared on the day of surgery. In their example, Nurse Linda's knowledge of Ms Shoulder's actual needs (unmanaged pain, uncontrolled nausea) is overridden by the need to discharge Ms Shoulder on time (Rankin & Campbell, 2006). Nurse Linda's actual work (providing an emesis basin, an antacid and advising Ms Shoulder to purchase an over the counter antiemetic), intended to (try to) compensate Ms Shoulder for what could be perceived as incomplete and substandard care, does not appear in the official account of the discharge. The abstract measure that matters, in this case, is the time of discharge. Nurse Linda's knowledge and the manager's knowledge are not valued equally; one pushes the other aside, identifying a discursively organised power imbalance.

Uncovering asymmetries of social power (Bisaillon, 2012b) in discursive coordination is part of tracing and mapping social organisation and is another focus of Smith's thinking on discourse in which she takes up some of Michel Foucault's (1970, 1972) ideas about power. Campbell states that in Smith's sociology "no setting is an isolated unit, but is part of an organized whole. This underpins strategy for identifying how power is inserted into (enacted in, actually) the experiential setting, often in silent and mysterious ways" (2003, p. 13). Listening to peoples talk enables the researcher to see social construction and organisation in motion (Campbell, 2010). The social power of the organisation is illuminated and uncovers people's participation in the construction and organisation of their discourse and experiences (Bisaillon, 2012a).

Discursively organised experiences and texts are central to institutional ethnography. Campbell claims "a socially constructed world is one in which control, like all other aspects of an organisation, is a practical accomplishment of real and potentially identifiable people" (1984, p. 22). It is people that accomplish the production of knowledge, that activate knowledge into social processes such as workplace procedures, that read, write and act on behalf of socially constructed documents. In her thesis, Campbell identifies that texts are not only information about organisation "they are integral to how organization is brought into being" (1984, p. 17).

In the following section, I detail the institutional ethnography concepts/theories associated with people's material and discursively organised experiences/activities and texts. I begin with people.

People - situated expert knowers, standpoint, experience as data, local and extra-local participants

Following on from the materialist focus on what is *actually happening* the people observed and interviewed as part of an institutional ethnography are positioned as situated knowers; experts in their own everyday lives as they live and experience them (Campbell, 2014). It is from within people's situated expertise that social processes can be opened up for examination to understand how society works (Brinkman, 2012; Denzin & Lincoln, 2003). People's experience as only they can know and speak of it (Campbell, 1998; Smith, 2006), grants access to traces of socially organised knowledge that coordinate their consciousness and orchestrate their experiences (Bisaillon & Rankin, 2013). In other words, what people know and can tell of their experiences carries traces of how their consciousness and activities are operated by society.

Part of institutional ethnography's theory of knowing recognises that the conduct of the research enters the researcher and the situated expert knower participants into a social relation with each other, a relation in which power is a factor (Campbell & Gregor, 2004, for more on this see Walby, 2007). Mitigating this power imbalance is accomplished by the researcher positioning themselves alongside a group of the expert knower participants, not only to collectively explore and explicate how knowing in the research setting is organised, but to also ensure that it is for these participants that the research speaks (Campbell & Gregor, 2004; Smith, 1999, 2006). In this way, the research is *for* participants, rather than *about* them. Positioning oneself alongside these participants is known in institutional ethnography as adopting a standpoint.

Adopting a standpoint position from which to begin is a central commitment to and the starting point of most projects using institutional ethnography (Bisaillon, 2012a; Campbell & Gregor, 2004). Smith (1999, 2005) says that taking a standpoint enables the inquiry to proceed without reproducing institutional discourses and organisation, and

reifying ruling relations. Rankin states that the institutional ethnographer "must stay grounded in descriptions of things happening—and the observed tensions and contradictions that arise there for those people (who occupy the standpoint)" (2017a, p. 2). Positioning myself alongside the standpoint participants (in this case frontline nurses and shift coordinators) I must learn the research setting as they know it and talk about it, and then learn to see how it is organised and controlled from elsewhere (Campbell & Gregor, 2004).

Positioning the researcher alongside the standpoint must be accomplished without her/him being swayed or, to use an institutional ethnography term, *captured* by authoritative institutional discourses and texts, which carry the standpoint of the institution (Hamilton & Campbell, 2011). Within the current neo-liberal frame, we are both consciously and unconsciously orientated to authoritative discourses and logic, and it is not uncommon for an institutional ethnography analysis to be pulled off track because the researcher is captured by powerful institutional ideas (Campbell, 1984; Rankin, 2017a). The challenge is to produce an analysis anchored in the experiences of standpoint participants, to treat their experience as data, but not to make the analysis solely about participant experiences (Deveau, 2008; Rankin, 2017b).

Whether experience constitutes knowledge/evidence is contested (see Deveau, 2008; Hesford & Deidrich, 2014; Murray, Holmes & Rail, 2008; Scott, 1991, for detail on this debate). Deveau states that institutional ethnography's "stance on experience is that it is real and anchored in material conditions" (2008, p. 14). Campbell (2003) says that Smith was focused on learning how to think from inside experience (what was actually happening), rather than looking in on it from outside. Although Smith (2005) supports Scott's (1991) assertion that experience does not directly translate to fact, she maintains it is a legitimate place to begin a discovery of how experience is socially organised; beginning where people are in their socially organised material actualities.

While acknowledging the ongoing debate regarding feminist researchers' use of experience as knowledge, Campbell (1998, 2006) identifies that institutional ethnography uses experience as the ground zero of analysis to substantiate two arguments. The first argument is methodological, contending that experience grants access to the social relations under investigation. The second argument is substantive.

Campbell (1998, 2006) using examples from her own and Rankin's (2004) work, brings into view how a substantive argument is built on the ways a particular relation, (such as workload measurement and healthcare reform) alters how nurses talk about, think about and conduct the nursing work of caring for patients (Campbell, 1998, 2006).

Experiential data is generally gathered from participants in two locations, locally and extra-locally. The local setting (in this case hospital wards, and short-stay acute care units) is where standpoint participants are located. It is the experience, actualities and material conditions of standpoint participants in their local settings that anchors and orientates the investigation. de Montigny states that "[a] core insight of Dorothy Smith's IE is that people in local settings, through situated production and reading of texts, whether policy manuals, assessments, reports, and so forth, practically connect their local practices to extra-local and institutionalized forms of organization" (2017, p. 341).

Extra-local participants are often (but not always) located in a different social setting and timeframe to the immediacy of what is unfolding for local standpoint participants. A further distinguishing difference is that extra-local participants receive standardised and objectified accounts[17] of standpoint participants' experiences (Campbell & Gregor, 2004; Bisaillon, 2012a). Reliance on standardised and objectified accounts subsumes local happenings and results in extra-local participants holding different knowledge to standpoint participants about *what is actually occurring* (Bisaillon & Rankin, 2013; Darville, 1995). Such textual accounts mediate local and extra-local settings, trailing the social relations with them. Smith states that the inquiry "follows the trail of the relation in order to find out how a form of organization is accomplished" (1996, p. 116). Standardised, replicable, objectifying texts are the breadcrumbs of the trail.

Texts - textual realities, textual mediation, text-work-text sequences, text-reader conversations, and textual hierarchy

What people are actually doing with and on behalf of texts is fundamental to an institutional ethnography (Bisaillon & Rankin, 2013). Texts mediate and accomplish social organisation across local and extra-local settings (known as trans-local organisation in

[17] Usually written texts, or electronic texts that produce a standardised record of goings on that can override and speak for differing individual localised experiences (Smith, 1987).

institutional ethnography), inserting institutional interests into local thinking and practice (Rankin & Campbell 2006; Smith, 1990b). Institutional texts are defined as abstract, standardised and replicable texts that people read, write, enter data into, listen to, view or otherwise generate or interact with, as part of their everyday work (Campbell & Gregor, 2004). This widespread replicability is key to the organisation of multiple different local settings in which people unknown to each other are organised to think, talk and act in similar ways (Turner, 2014).

Smith's alternative sociology asserts that texts mediate the knowledge, discourse, and actions of people, by inserting ruling ideas and institutionally sanctioned actions into the consciousness of readers (Campbell, 2003; Smith, 2014). Smith's interest has been in the construction of documentary realities that sever knowledge from its material ground in experience, recrafting it into abstract, objectified, conceptual textual accounts which play a part in the constitution of 'authority and power', (Campbell, 2003, Smith 1974, 1990a, 1996, 2006). Authoritative texts stand in for actualities (what is actually happening in an actual setting for actual people) and organise which version of knowledge is valued over others.

Accessing and explicating textual realities, mediation, trans-local organisation and the construction of authorised knowledge is accomplished by paying attention to textual sequences, text-reader conversations and textual hierarchies (Turner, 2014). Tracing texts within local settings and as they move from place to place across extra-local settings brings into view long text-act-text sequences, many of which are predetermined by institutional processes. The researcher pays attention to how the text is received, read, updated, and sent on to the next location, as well as to the actions people undertake on behalf of the text. de Montigny states that these "[i]nstances of textual work connect particular and local occasions to seemingly transcendent institutional order" (2017, p. 342). This institutional order or framing organises how a reader interacts with a particular text; a concept described as a text-reader conversation.

Text-reader conversations occur within a particular social setting, timeframe, and institutional context. Smith states "[r]eading is not entirely in the text, for at the point of reading, the reader both activates the text and is responding to it" (2014, p. 232). These

activations and responses are site-specific[18] (Turner, 2014), as well as shaped and instructed (de Montigney, 2017), by the institutional framing in which they occur. Accordingly, the text can only be read (responded to and activated) in a certain way determined by the location of the reader, and the context in which the text is read. Consequently, because the reading, responding and activating of the text is organised by institutional framing, the readers' actions (for and on behalf of the text) are also shaped and instructed. The reading and actions are organised and sanctioned by the authority of the institutional frame. The following four paragraphs provide examples of these textual concepts in action.

Rankin and Campbell (2006) provide an example of institutionally orchestrated reading using a patient satisfaction survey, identifying how the patient (Hannah) was only able to describe her experience of a recent hospitalisation in a form predetermined by the survey. The hospital would have anticipated compliance with the format of the survey in order to obtain an institutionally structured and sanctioned version of textual evidence that patients are experiencing 'quality' healthcare. Hannah had almost no recourse to describe her experience in her own words because the survey constrained the account of the care experience to fall within the standardised institutional form of 'quality' (see example in Rankin & Campbell, 2006, p. 120-121). The institutional form of the text controls what can be said of the actual experience.

Institutionally determined textual sequences often incorporate textual hierarchies that begin with what is referred to as a *boss text*. In the hospital where Hannah was a patient, there will be an authoritative text that requires the collection of 'patient satisfaction' data to substantiate the organisation's focus on care quality. A boss text carries an ideological institutional idea (such as the quality of care) which in turn organises the production of widespread and standardised surveys and inscribes the language, format and content of the survey. In her thesis, Webster (2009), describes the evidence-based medicine guidelines in Canada that inscribe 'best practice' for the management of patients experiencing a stroke. The boss texts, as authoritative evidence, produce standardised guidelines to be applied in every setting regardless of the material

[18] Pertinent to the social location of the reader.

conditions there. In turn, the best practice guidelines organise the consciousness of clinicians towards timeframes, particular drugs and interventions as the knowledge and actions sanctioned by the guidelines (Webster, 2009).

George Smith (2014), revisiting his (1987) inquiry into the policing of the gay community, describes the 're-framing' (by police officers) of the actions of gay men in bathhouses as 'offensive acts'. The men in the bathhouse experienced their actions as 'pleasurable acts', but the reframing by police officers made institutionally possible the prosecution of the gay men under the 'Bawdy House' conception of the Canadian criminal code (see Smith, G., 2014, for a detailed example of institutional reframing). A boss text reframes the form in which experience can be known to meet a ruling institutional purpose. How people outside the relations of ruling know about and talk about these experiences is subordinated to the institutional category and rendered invisible.

In Melon's (2012) thesis, as with G. W. Smith's (1987, 2014) work, individuals and their experiences are reframed into a form that renders them institutionally knowable, and able to be inserted into institutional sequences. Melon (2012) describes the Canadian Triage and Acuity Scale (CTAS), and how it organises an institutional coding of every patient arriving in a hospital emergency department in Canada. Each arriving patient is reconstituted by the CTAS into a standardised category and allocated a numerically constituted score. This score then becomes the basis for decisions about when the patient will enter the emergency department, and when a doctor will see them. The CTAS score subsumes individual patients' experiences of their emergency, along with the work nurses do to triage and organise them.

In the previous section, I have covered the conceptual considerations for orientating to and planning the approach to an institutional ethnography investigation. In the next section, I detail some of the methodological devices vital to entering the field and commencing iterative analytic work.

Work

Institutional ethnographers are committed to discovering and producing detailed accounts of people's everyday lives and work as a means of accessing traces of

social organisation (Campbell & Gregor, 2004). As this investigation focuses on frontline nurses' knowledge and practice, I detail here Smith's (1987, 1996) generous conception of work. The second wave of feminism and Smith's development of women's standpoint were catalysts for the generous conception of work utilised in institutional ethnography (DeVault, 2014). The concept originated in a Marxist organisation, Wages for Housework (WfH), which, according to Smith, claimed that 'housewives do work which actually sustains the paid work in society and sustains capitalism" (2003, p. 62).

Smith states "whatever exists socially is produced/accomplished by people 'at work', that is active, thinking, intending, feeling, in the actual local settings of their living and relationships" (1999, p. 75). Much of people's work (such as that of housewives) is invisible but includes a range of activities done with intent, under specific circumstances, taking time to complete, and utilising specific knowledge (Campbell & Gregor, 2004; Smith, 2006). Originating in Marxist thinking, detailed descriptions of work, utilising this generous conception, brought to light gendered and class-based divisions of labour (DeVault, 2014), such as women's work in the body-based world of the household and parenting, and men's work in the head-based world of academia, business and government (Campbell, 2003). Also, this generous conception illuminated mundane or previously disregarded activities that constitute work, such as Diamond's (1992) description of *waiting for dinner* as the work of rest home residents.

Smith contends that "in many, many ways in the world of work today, work disappears from view and mostly it's in the process of using a professional or institutional language to make things accountable" (2003, p. 63). The institutional ethnographer must work hard to get behind peoples use of institutional or professional terminology (which often includes overarching conceptual/ideological descriptions) because it invariably covers over the detail of what they are actually physically and cognitively doing. By making visible everything people are actually doing as work, including their feelings about it, it is possible to see not only the detail and extent of that work but also how their work is widely coordinated as well as connected to the work of others (Smith, 2003).

Writing an accurate account of people's work is key to realising several intentions of institutional ethnography. One of the primary purposes of making work visible in emancipatory feminist research is to realise the underpinning tenet of social justice and

to raise the consciousness of research participants and readers about the nature and contribution of their work to their profession, patients, customers, employers, organisations, and society (Allen & Pilnick, 2006; Smith, 1996). In turn, this provides the opportunity for an increase in their confidence to make change and assert their claims for recognition of their work (Allen, 2015; DeVault, 2014). Smith states that in order for this emancipatory outcome to occur "the forms of knowledge that have made the work processes underpinning them invisible must be remade" (1987, p. 153). Only by rendering the detail of work and its organisation visible, can it be offered as an alternative way of knowing, and an opportunity for intervention.

Institutional ethnographers listen closely to people's detailed descriptions of their work. This attentive listening is focused on detecting traces of authoritative institutional (conceptual/ideological) terminology, as well as participants' experiences of tension and contradiction. These contradictions (also known as disjunctures in institutional ethnography) provide vital clues to the types of social organisation in which one form of knowledge is displacing and dominating another. In the next section, I detail disjunctures and locate them as the puzzles that lead to the institutional ethnographer developing a problematic as the basis for analytic argument.

Disjunctures and the problematic

Institutional ethnography uses the term disjuncture to describe tensions and contradictions between 'different ways of knowing' (Campbell, 2003; Rankin & Campbell, 2006). These contradictions indicate points of chafe at the intersection between an individual's knowledge of their work, context, experiences (actuality) and authoritative institutional knowledge of the same. However, the point of disjunctures is not to analyse or explain the meaning of participants' experiences, rather, it is to use these disjunctures as traces of and clues to the social organisation to be discovered (Melon, 2012, Smith, 2003).

All participants can articulate these chafing experiences regardless of their location (local or extra-local). Disjunctures can reflect participant anxiety such as in Deveau's (2008) example of Ivan; a blind student enrolled in a short course in English as a second language who must sign a pledge to converse only in English for the duration

of the course. Ivan wants to sign the pledge and comply with the stipulation; however, Ivan's seeing-eye dog (Pavot) is trained to respond only to French commands. Ivan must, therefore (unavoidably) speak French during the time dedicated to learning English. Disjunctures can also reflect distress and persecution such as in G. W. Smith's (1987, 2014) example of gay men's acts of pleasure (how they know these experiences) being recast as indecent acts (how police officers know these experiences) enabling arrest and incarceration. Both examples, though extreme in contrast, demonstrate a rupture between an individual's knowledge of their actualities and ideology (Ivan's disjuncture) and authority (the disjuncture of gay men in Canadian bathhouses).

In this study, I heard nurses talk about the perplexing, annoying, and distressing aspects of their everyday work. In these scenarios, much of what nurses know and do, as part of managing short-staffed shifts and threats to patient safety, does not appear in the official textual forms nurses use to account for their situated knowledge and skilful work. Amid the increasing textual mediation of nurses' work more and more of what nurses know and do is going missing from these *official* accounts (for further examples of these types of disjunctures in nursing see Adams, 2017; Allen, 2014; Campbell, 1984; Rankin, 2004; Rankin & Campbell, 2006; Melon, 2012). Additionally, nurses struggled with the tension between knowing what they wanted to do for patients and what they were actually able to do. Their nursing work with patients seemed to be constantly in competition with other priorities, and it is to these institutional priorities that nurses find themselves held increasingly accountable, (Allen & Pilnick, 2006). Nurses' described the chafe of these institutional priorities not being of obvious direct benefit to the patients in front of them on *this* shift. These sorts of perplexing contradictions form the basis of an institutional ethnographer's work on the research problematic.

The research problematic in an institutional ethnography is both a concept and a methodological device. The problematic is neither the research question nor a summarised version of participants' experiences (Benjamin & Rankin, 2014; Campbell & Gregor, 2004). However, it is vitally important that the problematic arises from participants puzzling experiences and troubling disjunctures, and not from within the "social relations of the ruling apparatus" (de Montigny, 2014, p. 179). The project problematic can only be formulated following immersion in the field (Bisaillon, 2012a).

It arises from a collection of puzzling occurrences observed and gathered at interview. These are then written into accounts by the researcher of goings-on in local and extra-local settings (Rankin 2017a). It is from this first phase of analysis that the problematic emerges.

Rankin states (in her thesis) that the problematic is a "methodological tool to find entry points or clues for exploring the social organisation of what has been rendered puzzling" (2004, p. 38). Once formulated the problematic guides subsequent data collection in extra-local settings and textual analysis. Rankin describing Morris's work on formulating a problematic in her thesis states that "[s]he [Morris] is looking for a problematic that is based on data that can "hold" (empirically link with) the "big picture" of what she is discovering (2017a, p. 4). Here, it is possible to comprehend the critical role the problematic plays in focusing the investigation, providing both guidance and coherence to the arguments being made as analysis develops (Bisaillon, 2012a, Rankin 2017a). In short, the problematic holds together the arguments of the thesis.

Mapping as a metaphor and analytic device

Mapping is a concept used both figuratively and literally in institutional ethnography. Mapping contributes to the descriptive and analytic processes of the investigation as well as sometimes constituting part of the final report (Campbell & Gregor, 2004; Turner, 2006). Smith describes mapping as an analytic device that "extends peoples own good knowledge of local practices and the terrain of their everyday life" (1999, p. 94). Smith goes on to state that an inquiry's map would be,

> …through and through indexical to the local sites of people's experience, making visible how we are connected into the extended social ruling relations and the economy. And, though some of the work of inquiry must be technical, as making a map is, its product could be ordinarily accessible and usable, just as a map is (1999, p. 94-95).

Turner states that a map in an institutional ethnography study "results in an account of the day-to-day text-based work and local discourse practices that produce and shape

the dynamic, ongoing activities of an institution" (2006, p. 139). One of the challenges for the institutional ethnographer is, as Campbell states, "[t]he terrain to be mapped is always in motion" (2003, p. 20). However, Smith's theory of knowledge and method of inquiry are specifically designed for and committed to this kind of discovery (Campbell, 2003).

Generally, institutional ethnographers map a small part of a larger social terrain, zeroing in on local practices, texts and discourses, showing how they are connected and coordinated by the social ruling relations organising the entire terrain (Deveau, 2008; Turner, 2014). As an analytic product, these maps add a piece of social cartography (Deveau, 2008) to the explication of social relations. Accordingly, mapping has the potential to create a view of a portion of the entire social territory, tracing knowledge, discourse, and textual sequences (institutional processes) and connecting them to form a view of the institutional process that no single person could know or see.

Some of the analytic work in Pence's (2001) ground-breaking project on safety for battered women involved tracing and mapping textual processes associated with a 911 domestic violence call in the United States. Multiple agencies, people, processes, meetings and discussions occurred with the texts of the case, texts in which the battered woman herself, with an injured body, was invisible. People constructing and receiving the various texts did so within an institutional frame associated with their particular social location. Each person was orientated to aspects of the text that intersected with their role in the institutional processing of the text; discrete pieces of work that were invisible to others in the institutional sequence, and as Pence's (2001) powerful analysis was able to show, were often not in the interests of battered women. Pence's ability to bring the entire institutional sequence into view resulted in widespread changes both in the United States and abroad to the nature and processing of domestic abuse reports.

Conclusion

The purpose of this chapter was to introduce Dorothy Smith's theory of knowledge and its method of inquiry - institutional ethnography. Smith's work spans decades and is still being developed, both by herself and by successive generations of students of the technique. The conceptual/theoretical heritage of the approach is dense,

complex and a testament to Smith's intellect and commitment. I have focused on some of the essential concepts and methodological devices while trying to avoid the 'dogma' that Smith (2006) resists. In this chapter, I have employed examples from papers and institutional ethnography projects to demonstrate my understanding of some of these dense concepts. I do not claim to do the theory or the research strategy justice but intend that the description in this chapter enables the reader to see how the approach has framed this investigation and to assist in making sense of the analytic processes, arguments and findings of this project. In the next chapter, I detail the methods of this investigation, including approaches to participant recruitment, data collection, analysis, ethical considerations, and reflexivity.

Chapter 3 – The research process

Introduction

In this chapter, I detail the research processes of this investigation. I begin with the recruitment of participants, then move on to the methodologically informed approaches I took to data collection, including interviewing and fieldwork. In an institutional ethnography, analysis is iterative. I describe indexing, account writing, and mapping techniques employed to aid the analytic endeavour of the project. I close the chapter with commentary on issues of research validity and warrantability, ethics and reflexivity.

Table 3 Glossary for chapter 3

Directors of Nursing Group	National meeting of all Directors of Nursing from the 20 District Health Boards
Safe Staffing Healthy Workplaces Governance Group *Abbreviated for ease to SSGG*	National governance structure made up of DHB, Union, DHB Strategic Services, Director of the Safe Staffing Healthy Workplaces Unit, and Ministry of Health Representatives that govern the design, development, and implementation of the Safe Staffing Project, particularly CCDM.

Much of the terminology in this glossary is not method related. Rather, reference is made to systems, groups, and other aspects of data collected from participants. These terms appear here because it is the first time they are mentioned in the thesis.

Recruitment of participants

Recruitment of study participants occurred over 16 months and resulted in two participant groups. Frontline nurses constituted the standpoint and local participants, while the extra-local participant group encompassed people occupying roles widely dispersed across the terrain of the Nurse Safe Staffing Project. Recruitment of these two groups was a deliberate strategy and intention of the project. Data from standpoint participants provided the point of origin for the project, and initial analysis of their experiences brought a problematic puzzle into view to be unravelled by the investigation. By comparison, data from extra-local participants offered the opportunity

to open several 'windows' onto different locations across the vast social terrain (Smith & Smith, 1998) of the operation of Nurse Safe Staffing Project in NZ DHBs.

There is little guidance on the number of participants to recruit to an institutional ethnography study. Campbell and Gregor (2004) say that this is because such considerations are the onus of the researcher and are specific to the institutional ethnography project being undertaken (Campbell & Gregor, 2004). Representative samples, standardised and static data collection processes, authorities on the topic, and global generalisability (Denzin & Lincoln, 2003), do not align with institutional ethnography methodology, because it is the institutional form, not people or their experiences, that is the central concern of the investigation (Smith, 2002). Rather, it is the objectifying and organising relations of institutions themselves that represent the generalisable outcomes of the research (Smith & Smith, 1998) These are the types of differences that necessitate the ontological shift (of the researcher and their previous research knowledge) that Campbell and Gregor (2004) speak of in their primer on institutional ethnography.

Standpoint participants

Efforts to recruit frontline nurses began with a poster on the wall of ward staff tearooms in local hospitals, inviting nurses to participate in the study. After two months without a single respondent, an open letter of invitation (Appendix 1, p.285) to participate in the research was published in two publications. *Kaitiaki New Zealand* is the journal of the nursing (and some midwives) union (New Zealand Nurses Organisation, NZNO). The *Nursing Review* paper is an independent nursing publication. Both sources published the letter of invitation within three days of each other, and within one week, I had nine responses from frontline staff - eight nurses and one midwife.

All participants worked in hospitals in the North Island of NZ, and in a wide variety of clinical settings. These clinical areas included emergency department, acute planning/admissions, inpatient surgery, inpatient medicine, special care baby and postnatal services, neurology and neurosurgery, surgical recovery and acute inpatient mental health. Participants were asked to contact me for an information sheet about the research (Appendix 2, p.286). Following confirmation of their interest in providing data

for the research, participants received a consent form to sign, and we negotiated time for an interview. Each of the nine participants was interviewed at least once, with some interviewed more than once to follow up on analytic leads. In total, thirteen interviews were conducted with the nine participants located in the standpoint setting.

Despite recruiting a midwife participant, I refer only to frontline nurses throughout the thesis, and I wish to clarify why this is so. I elected not to refer to midwives in my investigation because, in the majority of NZ hospitals midwives are not generating patient acuity data and without this data, few of the interventions of Care Capacity Demand Management (CCDM) can be fully implemented. The work and knowledge associated with these technologies that I map in this project will not reflect the experience of most hospital-based midwives.

However, the frontline midwife participant's experiences of staffing shortages, concerns for the safety of mothers and babies, unmanageable workloads and sacrificing decisions about care were synonymous with the experiences of frontline nurses. For this reason, the data provided by this participant contributes to the accounts that make up chapter 5. How short-staffed shifts occur as they do is organised by social and institutional factors that extend beyond TrendCare and CCDM. These same institutional relations organise the synonymous frontline experiences of nurses and midwives. Therefore, the findings of this research may be of value to the work of assessing and improving frontline midwifery staffing levels.

Extra-local participants

Extra-local is an institutional ethnography term that describes settings outside of that occupied by the standpoint participants (Campbell & Gregor, 2004). A total of 17 extra-local participants were recruited from widely dispersed locations across the terrain of the Safe Staffing Project, from hospital ward manager roles through to national level governance.

Permission to recruit extra-local participants was sought from organisations providing secretariat services to national healthcare leadership groups as well as the groups governing the design and implementation of Nurse Safe Staffing Project strategies. Once participants responded to the invitation to be part of the research, the

same process was followed as for standpoint participants; supply of the information sheet, consent, and negotiation of time for an interview.

Data collection

Data collection began immediately following ethics approval and participant recruitment. Interviews with participants were the primary data collection strategy to access participants' material experiences of their work, followed by an analysis of the texts these interviews brought into view. Data collection progressed iteratively with each interview and each text, and the concurrent analytic mapping, identifying the next questions to ask and the next text to trace.

Interviews - accessing experience as data

Thirty interviews were conducted with 26 participants. A small number of interviews were conducted face-to-face, the majority using Skype, and a small number via cell phone. Views on the merits and limitations of these techniques are contested. Ethnographers tend towards in-person interviews so that non-verbal cues and context factors are available to enrich the data gathered (Baker, 2002). Interviews conducted over the phone have various advantages and disadvantages, and the merit of this technique is debated (Shuy, 2002). Use of the telephone reflected that informants were spread across NZ and that some elected to provide descriptions of their everyday work while in the middle of conducting that work. Some of the conversations conducted over the phone resulted in poorer quality recordings. Reading the phone interview transcripts, it is clear that interviewing by phone results in the informant speaking more of the time. I speculated that this was because they could not see that I had a question to ask. Where informants talked of ethically and morally troubling occasions in their work, I believe the phone offered both the informant and myself as a researcher, some measure of separation that made the story easier to tell.

Before interviewing, I consulted several texts on qualitative interviewing techniques (Gubrium, Holstein, Marvasti, & McKinney, 2012; Poland, 2002; Warren, 2002), and interviewing specific to istitutional ethnography (Campbell, 2006; DeVault & McCoy, 2012; McCoy, 2006). This pre-interview work assisted my conceptual approach to the interviews as an occasion for a collaborative meaning-making conversation

between the researcher and participant (Brinkman, 2012; Gubrium and Holstein 2012). The original Latin meaning of conversation was 'wandering along with' (Kvale, 1996). Taking this approach to interview conversations, I have wandered along with the 'local inhabitant', (participant) as a situated expert, as they describe the social world of their everyday work (Kvale, 1996; Smith 2005). Together we began to construct a map of the social world of short-staffing and the institutional relations under investigation (DeVault, 2014).

Standpoint participants' descriptions of their everyday work were heavily populated with institutional language relevant to their contextual setting (DeVault & McCoy, 2006). Primed by my preparatory reading, I was prompted to recognise this institutional language and dig underneath it for material descriptions of the actual work involved (G. W. Smith & Smith, 1998), particularly, work that showed the nurse to be hooked up into work mediated by texts. Nurse's talk glosses over much of the *actual* work they are doing in these text-mediated processes. It took effort and focus in the interview to bring them back to describing the detail of what they were doing as a sequence of events involving their work with texts. I asked questions such as 'and then what did you do?', 'how did you know to do that?' and 'where did the text go after you had completed it?' to assist what felt like archaeological work, digging down to the detail of their material activities.

Campbell (2006) describes experience as the 'ground zero' of an Institutional ethnography. It is via standpoint experiences that access is granted to the socially constructed knowledge and relations of the investigation. If an investigation is to understand what is happening for people, it must begin where they are, with what they are doing (Smith, 2005). Institutional ethnography focuses on discovery (Smith, 1987). This 'discovery', of the organising social relations, is achieved by connecting the concrete and material everyday experience and work of people in different places and times, to the discourse and high-level texts, such as policies, that orchestrate the taken for granted regularised practices that occur in these multiple settings (Ng, Bisaillon & Webster, 2017). Explicating these connections and what they usher into the everyday work of frontline nurses, in a way that is clear and meaningful for the people being organised, is the intention of this project.

Texts as data

Collecting and incorporating texts for analysis is both central and essential to institutional ethnography's practice (Smith, 2006; Smith & Turner, 2014). Such texts are the material of an institutional ethnography investigation, made so in the hands of a reader as they read (Smith, 1987), or as they write, view, listen to or otherwise interact with the text. Smith states "texts are the medium of knowledge that is a property of organisation rather than of individuals" (1987, p. 212). Smith (2006) asserts that it is what people do with texts that activates their organising relations. Organising is something the text, without its agency, could not accomplish without being activated by people (Turner, 2002). Flad states "[t]he power of texts is therefore in the movement and activation of them from person to person" (2009 p. 58).

During interviews, frontline nurses would say, 'I did my TrendCare'. Careful questioning uncovered what the nurse was involved in doing when she was 'doing TrendCare' (described in chapter 5), as well as her knowledge about *how* to do TrendCare. Here, I am taking up institutional ethnography's interest in the detailed material experience of people's work with texts. In this project, the text-reader conversation, as Smith (2002) and Turner (2002) conceive it, brings the nurse into a dialogue with the discourse of patient acuity, patient categorisation, and hours per patient day (HPPD). As I will show in later chapters, this dialogue begins to organise how the nurse thinks about patients and how she thinks about and carries out her nursing work. Few of the frontline (standpoint) participants knew where the information they entered into TrendCare went, who looked at it, what they did with it, nor what happened as a result of the reading the data.

Texts enable the tracing of organising and coordinating knowledge backwards and forwards from participant experience to institutional processes (Campbell, 1984). Texts that nurses are taking up at the frontline (such as TrendCare) can be traced back to determine how they have been organised into everyday frontline work (chapters 4 & 6). This tracing can identify several considerations important to an institutional ethnography, including locating the texts being examined in a social and historical trajectory (chapter 4). Tracing reveals how institutional discourses have been carried into

local settings, (chapter 6) and how the thinking, talk and material work of the people in those settings have been concerted as they enter into dialogue with these discourses and texts (Smith, 2002; 2006) (see chapters 7 & 8). Texts and discourses can also be traced forward as they carry, in this instance, HPPD into distant and extra-local institutional settings where they are taken up by managers making staffing decisions (chapters 6, 7, & 8). The analytic work of tracing these textual clues moves the investigation from *position* (standpoint) to *relations* that accomplish institutional process (Smith, 2006).

Analysis

The work of analysis begins before, during and after data collection, (Rankin 2017a; Smith, 2006, 2014). In fact, in some ways, analysis begins even before the ethnography is officially started, with the identification of disquiet, with the troubling puzzles that prompt the question – 'what is happening here'? (Introduction & chapter 5). The work of discovering an answer involves exploring, tracing, and describing what people are saying and doing, and bringing into being through their concerted efforts (Rankin, 2017a; Smith, 2006). The analysis begins locally, illuminating work, discourse and the material contexts of peoples' experiences, then moves into texts, tracing their institutional courses to distant readers and extended institutional processes. (Campbell & Gregor, 2004; Smith, 2006; Smith & Turner, 2014).

Analytic work in institutional ethnography involves extensive investment in going backwards and forwards between the talk collected in interview conversations, experience and observations, field notes, journals and the setting or context from which they came (Campbell & Gregor, 2004; Sparkes & Smith, 2012). This back and forth analytic work took considerable time and continued throughout the writing of the thesis. Initially, I listened to interview recordings and began to journal notes about participants' descriptions of their work, including where they used specific language and terminology, where they described confusion, frustration and concern, and where their talk identified the end of their knowledge about where the texts they interact with come from and go to in their organisation. Once transcripts were complete, I began indexing.

Indexing

Taking guidance from Bisaillon's (2012a) and Clune's (2011) theses, and Rankin's (2017a, 2017b) guides to analysis, I began the analytic work of indexing. The iterative analysis involved looking for roles, titles, texts, meetings, and institutional language present in the talk of standpoint participants, as well as examples of troubling, distressing, and puzzling disjunctures.

Figure 2 Example of indexing work with frontline participant transcript

I read each transcript numerous times, beginning to piece together local experiences that were occurring in multiple different standpoint sites, as well as those material sequences of work and work with texts that connected nurses to institutional processes (Mykhalovskiy & McCoy, 2002; Smith & Smith, 1998).

Denzin (1995) and Kvale (1995) support the idea that the transcripts offer the opportunity for new and interpretations of the transcribed conversation, with every fresh

reading. Czarniawska agrees, stating that "every reading is an interpretation, and every interpretation is an association tying the text that is interpreted to other texts, other voices, other times and other places (2002, p. 747). Transcripts are not without limitations. Oliver, Serovich & Mason (2005) express concerns that corrected and standardised transcripts run the risk of objectifying the participant's experience, and Diamond (2006) is concerned with the transcript being privileged over the particulars and nuances of the actual conversation. To counter these concerns, I listened to the audio recording while working with transcripts to maintain a connection with the shades of each participant's speech including anger, passionate expression, pauses, frustration and distress. These nuances were not discernible from the transcript alone.

It is a complex enterprise to synthesise and piece together the 'material' of informant's descriptions of their socially constructed experience and begin to reveal the social relations that connect and coordinate these informants and their work across multiple settings and times (DeVault and McCoy, 2002). To assist with this intricate work, I began to construct accounts.

Constructing accounts as analytic work

Account writing involves identifying something happening in the data, a specific incident, and beginning to describe the knowledge and practices that put it together (Rankin, 2017b). Campbell & Gregor state "[a]nalysis in institutional ethnography is done in your writing, and as you write. Your writing begins to make something of your data, to move it towards analysis" (2004. p. 93). Accounts begin the work of unravelling what can be seen and told about frontline work, but explaining what has been discovered before and after data excerpts is the analytic work of revealing and unravelling its socially organised construction (Campbell & Gregor, 2004; Rankin, 2017b). DeVault & McCoy state "such analyses are directed toward ruling processes that are pervasive, consequential and not easily understood from the perspective of any local experience" (2002, p. 772). These processes come into view as the writing progresses.

One of the many accounts I wrote revealed the detail of the activity involved in 'doing TrendCare'. I believed myself familiar with the work of 'doing TrendCare', however, constructing the account revealed numerous layers of activity that had eluded

me when I had been observing nurses at computer terminals. The constructed account revealed a complex sequence of activities nurses must first learn to do and then factor into their frontline work for each patient, often twice or more times a shift. Further accounts associated with doing TrendCare, expanded the map of nurses' actual work and revealed how nurses are hooked up into work associated with meeting compliance standards related to monitoring and auditing TrendCare data. Thus, the account began to show implicit nursing work of a scale much more extensive and complex than previously indicated by nurses' descriptions of this taken for granted aspect of their everyday work.

I wrote numerous accounts that began with frontline experience and incorporated texts, and the experiences of extra-local participants, to try to follow *something happening* in the data as far as it could be traced. Not all accounts led somewhere. There were occasional dead ends. I also experienced difficulty with over-identifying with participants' descriptions and started to make some accounts about some of these compelling and tragic experiences. I returned to Smith (2006), Campbell and Gregor (2004) and Rankin's (2017a and b) texts and took guidance about remaining focused on tracing material connections to ruling ideas. Focusing on these connections was where mapping became an invaluable analytic device for the project.

Mapping for analytic insight

Smith (2005) describes institutional ethnography as being analogous to the process of creating a map of a particular territory of the social world. The map is designed to illustrate what Ridzi describes as a "material trail of what has occurred" (2003, p. 140). A map produced as part of an institutional ethnography project depicts the actual processes, talk and texts of people in text-act-text sequences, but the focus of the map and the investigation is always institutional (Turner, 2006).

I began mapping after the first interview using the indexing grids and accounts to identify texts and locate them within a sequence of events as participants described them. During successive interviews the map was extended as participants, both in local and extra-local settings, described sequences of staffing work involving the reading, writing and activating of texts. The extent and complexity of the text-mediated

knowledge in action in the work of frontline nurses were immediately apparent. To maintain a material connection between the texts and frontline participants' descriptions of a short-staffed shift, I mapped the text-act-text sequences as they occurred chronologically over the course of the nursing shift. In this form, the map would make sense to a frontline nurse. She would be able to see herself in this representation of a nurse's work. Local discursive practices and institutional language were also mapped as a type of narrative cartography (Pollner & Stein, 1996), for sense-making, to trace *what* is being said and *how* it is being said (Garfinkel, 1967). In effect, this narrative cartography identfies how the coordinating institution is discursively constituted or, put simply, 'talked into being' (Heritage, 1984, cited in Pollner & Stein 1996).

Some institutional ethnography projects utilise mapping and include maps in the final report (see Adams, 2017; Bisaillon & Rankin, 2013; Clune, 2011; Turner, 2002). Taking some guidance from these earlier works, I used Prezi, a presentation platform, to generate maps online, using shapes, lines and arrows in similar ways to the authors listed above. In the Prezi platform, multiple maps can be generated on a single virtual canvas. Analytic sub-maps tracing specific texts or discourses supported the main map of text-act-text sequences as frontline nurses described them. I was able to use arrows to point to gaps in the map, as well as demonstrate iterative changes to texts and discursively organised institutional talk over months and even years in extended sequences. Examples of the maps developed within this platform appear on the next two pages.

On page 56, approximately one-fifth of the entire map produced by this project is visible. The lower portion of the map under the magnifying glass illustrates the text–act-text sequences that occur in the immediacy of a short-staffed shift. Above the pink line, I have traced the origin of many of the texts used by frontline nurses on the shift and identified that development, education, trialling and implementing some of these texts could take between two to five years. This section of the map also indicates how long it can take for frontline nurses to receive a tangible organisational response to the urgent needs they have produced in accounts of short-staffed shifts.

In the map on page 56, the orange squares represent analytic accounts. The written account (of some 12-15 pages) can be imported onto the mapping canvas. Pictures, legislative texts, and short YouTube or video clips can also be imported onto

the canvas, along with entire chapters from the thesis itself. This facility provides the potential for the entire doctoral project to be imported into a single Prezi landscape.

On page 57, a close-up view of the larger map illustrates the small hero (frontline nurse standpoint) under the texts in action (text-act-text sequences) that occur during the first hour of a short-staffed shift. Circles indicate activities such as team huddles and squares indicate texts. Nurses consult, update and forward these texts in a rapid sequence at the start of a short-staffed shift in order to produce 'evidence' that their shift is short and to compete for scarce resources of more nursing staff (detail about this in the next chapter). Some of the texts in this image are specific to Escalation planning which all DHBs currently use, and some are specific to CCDM which is being implemented in 16 of the 20 DHBs (at the time of writing). However, the chief executives of the 20 DHBs have determined that every DHB must be implementing CCDM by 2021. Therefore, these maps, and indeed, the findings of this research, are relevant to all DHBs.

Figure 3 Portion of text-act-text sequence map

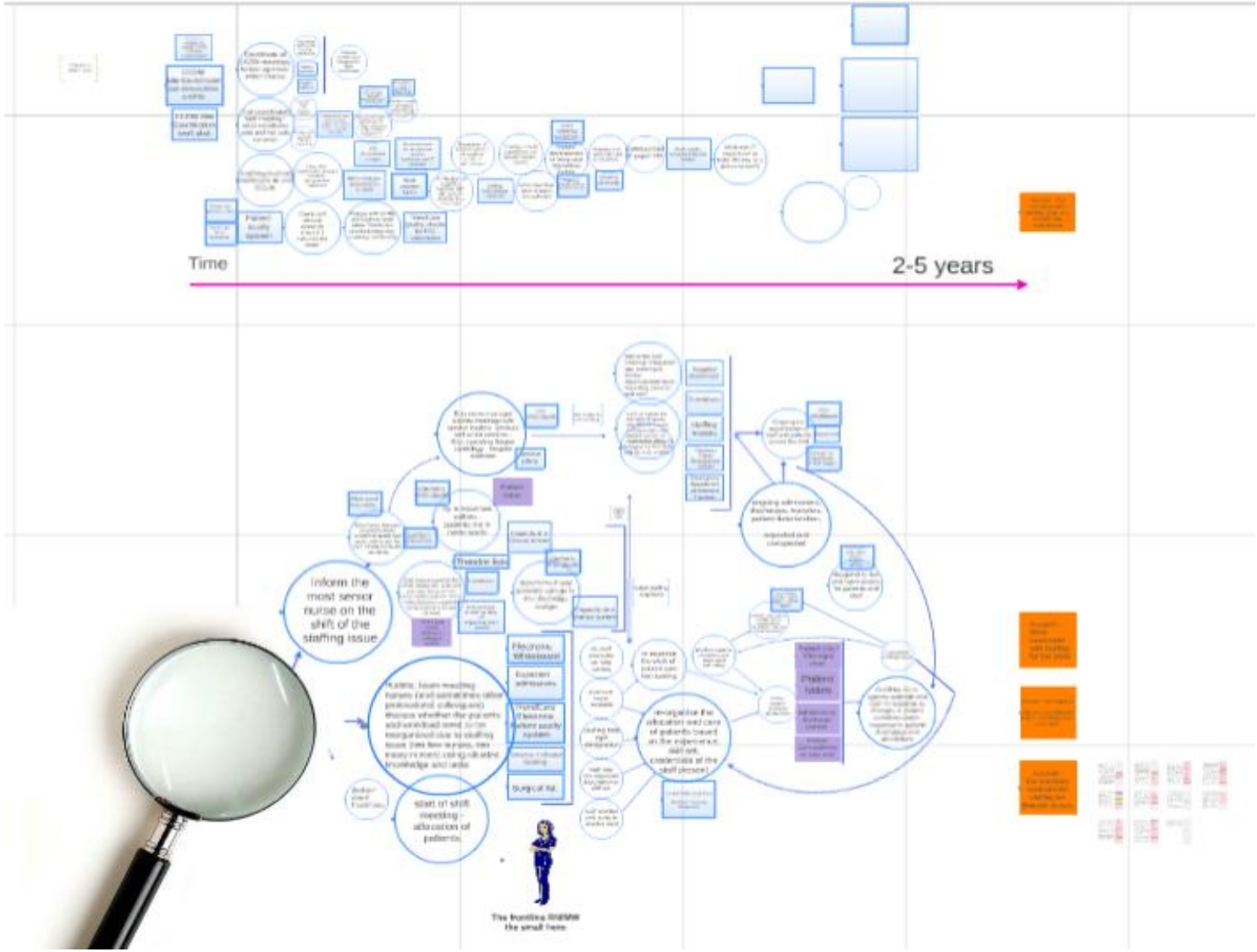


Figure 4 Close detail of Portion of text-act-text sequence map

Mapping texts and discourses in this way was fundamental to *seeing* textually coordinated relations active and activated in participants' work, and between and across different settings and times. In a single view, I was able to trace a text into frontline work and out again making possible identification of a textual trail extending into institutional sequences that connected with several extra-local locations (map pins located across the research terrain). These are the empirical connections an institutional ethnography seeks to identify, map, and explicate because it is these texts that carry the social and ruling relations from setting to setting, organising the consciousness, talk, and work of people as they go.

Selecting texts for analysis

The materiality of texts and their central position in an institutional ethnography was covered in the previous chapter. The most critical aspects of using texts in an institutional ethnography are their replicability and that they are not treated as objects of the research nor seen as static (Smith & Turner, 2014). Taking up Smith & Turner's (2014) conception of texts in action, I selected texts, from the vast number talked about by standpoint participants, based on evidence of their distinctive forms and use across multiple different settings. I describe these texts in sequences of action (chapters 7 & 8) as they move across and between settings in what Pence (2001) and DeVault & McCoy (2006) describe as processing interchanges.

In sequences of textually mediated action, where texts move from person to person and setting to setting, people are engaged in the work of reading, updating, modifying and activating texts. Each step in the sequence represents a processing interchange. A person's interaction with the text at such an interchange can introduce modifications to what has already been laid down, refashioning what is being said and how it is being said, and projecting it forward (Smith, 2002) in an iteration of the discourse.

Indexing, writing accounts, mapping and participants' experiences and disjunctures illuminated numerous puzzling occurrences resulting from how frontline nurses and many others were caught up in extended institutional sequences and

processing interchanges. I began to try to write a problematic that encompassed and articulated these many puzzles.

The problematic as an analytic device

The problematic brings vital focus to data gathering and analytic work, and to the extensive and somewhat overwhelming volume of ethnographic data (Bisaillon & Rankin, 2013; Rankin, 2017b). For this project, the problematic took some time to emerge. Various iterations were required before the problematic statement identified what Rankin (2017b) calls the crux of the disjunctures of frontline participants. Once established, the problematic was critical to the selection of extra-local participants, standardised and replicable institutional texts, and to the articulation of the social and ruling relations in action. Making use of the problematic puzzle as an analytic device pinpoints how the findings/analysis chapters *show* rather than *tell* how frontline nurses' experiences, knowledge and work are hooked up into institutional processes mediated by texts. Campbell & Gregor state "[t]he promise of institutional ethnography is that it maintains the subjectivity of those whose experience is problematized. The findings should explicate that experience and reveal what is happening that is relevant *to them*." (2004, p. 101). The problematic helped to determine how to explicate the social and ruling relations orchestrating frontline nurses experiences of and on short-staffed shifts, as well as those that operate the Nurse Safe Staffing Project. The problematic for this investigation appears at the end of chapter 5, the ethnographic chapter detailing frontline nurses' experiences, as it was from first-level analysis of this material fieldwork data that the problematic emerged. I move now to the research process considerations important to all research endeavours and those particular to institutional ethnography.

Research validity and warrantability

Campbell & Gregor state that in institutional ethnography "[r]esearchers must establish the validity, warrantability[19] and truth-value of their analysis within the tenets of the particular methodology" (2004, p. 86-87). Warrantability was a term I had not

[19] Warrantability- something that provides confirmation and authenticity - https://www.thefreedictionary.com/warrantability.

encountered before, so I sought some clarification. Forbes, King, Kushner, Letourneau, Myrick, & Profetto-McGrath assert that "warrantable evidence [is] pertinent to post-positivist, interpretivist, critical social theorist, and feminist perspectives" (1999, p. 373), and is demonstrated when there is sufficient criteria or evidence made visible for the findings to be warrantable and an example of good science and sound scholarship. The relentlessly empirical nature of analysis in institutional ethnography (Rankin, 2017b) meets these criteria for definite and discernible evidence of the arguments and claims being made.

Forbes, King, Kushner, Letourneau, Myrick, & Profetto-McGrath propose that one method of assessing the warrantability of research is ”critique of the methodological rigour and findings of the research by the research community” (1999, p. 373). The four findings and analysis chapters (5, 6, 7, 8) provide access to the tangible and material evidence of the arguments being made and the findings of this research. I assert that the balance of descriptive, analytic, and explicative work detailing the empirical connections between material happenings and social relations in this project yields reliable and authentic findings that would stand up to review by the institutional ethnography research community. Furthermore, I defend the explication of the social and ruling relations of frontline experience and actualities in NZ hospitals being sufficiently real and substantive that both standpoint and extra-local participants would endorse these findings as trustworthy and accurate.

A commonly reported risk of institutional ethnography analysis is straying away from what people are doing and saying, and starting to talk instead in conceptual, theoretical, institutional, or ideological language about the relations under investigation (Rankin, 2017a). To counter this risk, I have structured the findings/analysis chapters to provide detailed descriptions of the material and actual experiences, talk, work, textual sequences and coordinating institutional processes present in three different locations on the research terrain. I detail the roles, texts, readings, conversations, and decisions in these settings to illuminate substantive organisation in action. I have focused on describing how the particularities of peoples’ local everyday knowledge and work are generalised into forms of institutionalised order (Smith 2002), such as patient categorisation, and the allocation of a patient acuity HPPD. I have paid attention to

tracing and mapping the ways in which extra-local ruling relations, such as bureaucracy, the state's central policies, and professional authority are pulled down into local settings where they are discernible in peoples' talk and work (Campbell & Gregor, 2004; Ridzi, 2003; Smith 2002). I have intended to write an analysis as if it were a path with every stepping-stone discernible to the reader.

Ethical considerations

Ethical approval for the study

Institutional ethnography projects can rarely be mapped out in entirety before data collection begins (Campbell & Gregor, 2004). The unique ontological aspects of an institutional ethnography project pose challenges to the traditional expectations of university ethics approval committees (Adams, Carryer, & Wilkinson, 2015). I was unable to provide the committee with precise examples of the questions I would ask during the interview as questioning would follow the threads being unravelled by the conversation, and would most likely change with each interview. Fortunately, I received some advice from a colleague, who had her project approved by the same committee some years earlier, about how to present the ethical considerations of conducting an institutional ethnography (see the section below on these considerations). The committee's primary concern was for the confidentiality and safety of study participants, and I was able to provide sufficient detail about consents, confidentiality, treatment and storage of interview recordings and transcripts to allay these concerns. As a result, Massey University's ethics committee requirements were met.

An additional feature of university ethical approval unique to NZ involves consideration of the implications of the research for Tangata Whenua Maori (the people of the land), under Te Tiriti o Waitangi (The Treaty of Waitangi). I engaged with a local Maori Health Services provider and made initial contact about the research with Maori representatives from various hospital services, at Massey University and the Ministry of Health, as well as with the writers of He Korowai Oranga (Maori Health Strategy). This level of engagement met with the ethics committee's consultation and consideration requirements. Ethics approval was granted May 27 2016.

Strategies for the ethical conduct of the research

The primary ethical strategy employed in this project reflects Massey University's guidelines for ethical research involving human particpants. These guidelines are underpinned by articles of the Nuremberg Tribunal and the Declaration of Helsinki, (Soble, 1978), and the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research, 1978), which exist because of historical abuses between researchers and the researched. Issues of ethics in ethnographic research tend to centre on how the researcher is situated and written into the study (Finlay, 2002), and how power issues are acknowledged and accounted for (Norstedt & Breimo, 2016). There are some ethical issues to address unequivocally. Chief among the ethical issues associated with this project is that of confidentiality. Although the Nurse Safe Staffing Project strategies are being implemented on a national scale, many of the people engaged in discrete aspects of this work would be easily identifiable if their titles or locations were revealed. Participants were given a number at the interview but appear in the text of the thesis under pseudonyms. Accordingly, unless they can remember their specific words at the interview, participants will not be able to identify their own data in the research and certainly not that of any other participant.

Attention to ethical issues and methodological integrity include informed consent, avoiding deception, respect for persons, beneficence, justice, privacy, confidentiality and accuracy (Christians, 2003). The content of the information sheet was designed to ensure that informants understood the intention of the research, how they would be protected as participants, what their information would contribute to the project, and how this would be used. Respect for persons recognises the participants as autonomous individuals and with the right to beneficence – protection from harm, and justice – equal sharing of the benefits and burden of the research, (National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research, 1978). Consent forms (Appendix 3, p. 289) ensured that participants were aware that they could refuse to answer particular questions, and withdraw themselves and any data they had provided at any time during the research process. Titles such as DHB District Annual Plans, (DAPs), and Nursing Council of New Zealand Nursing Competencies were used as these texts are a matter of public record. Permission was sought, from the relevant DHB

or Safe Staffing Healthy Workplaces Unit, for the analysis of 'in-house' (not publicly accessible) texts.

On the topic of sensitivity, ethical issues were abundant among descriptions of staffing decisions, patient harm events, choices associated with reporting or not reporting risk events and incomplete patient care. Many of these examples, of what appeared to be socially organised system failure, were distressing for informants to tell and were certainly distressing for myself, and the interview transcriber, to hear. Principally this was because these failures had significant and sometimes fatal outcomes. Determining whether and how these events should be included in the research represented a substantial dilemma, particularly regarding issues of professional safety, and the safety of participants sharing distressing experiences. There are ethical and methodological questions to be considered when determining which data to include, and what to exclude (Finlay, 2002, Walby, 2007), as here too there are potential power, accuracy and integrity issues associated with the story and knowledge that emerges from the research (Walby, 2007). Reflexivity is a practice associated with making ethical decisions about which data to include and exclude, and to monitor for potential power imbalances.

Reflexivity

I have made use of inward facing reflexivity (Haney, 2002) to self-monitor for risks associated with the institutional ethnography approach, such as institutional capture, (introduced in the previous chapter), and imbalances of power (Campbell & Gregor 2004). Institutional capture results in the researcher getting 'caught up' in the ideology of the research literature (Smith, 2001; Walby, 2007), or authoritative discourses such as the identification of CCDM as 'the staffing solution' by the Minister of Health. As a former developer of Care Capacity Demand Management (CCDM), and a proponent of the Nurse Safe Staffing Project, I began this study from a location within conceptual and ideological ideas of nurse staffing solutions. To counter this risk, I have adopted journaling, reflecting with supervisors and membership in online institutional ethnography learning forums where such issues were interrogated. I also considered the problem of power that my former role as an 'expert' in CCDM might confer onto

participants, and onto what emerges from the research. The methodological devices of focusing on the standpoint and resolving the problematic puzzle that arose from the experiences of standpoint participants contribute to mitigating this risk.

To achieve a project that is politically accountable to the critical feminist and activist epistemology of institutional ethnography, and that acknowledges the subordinating effect of ruling relations over nursing knowledge and work, I have adopted the conceptual frame of the masculine and feminine binary. When Smith was developing her theory of knowledge and method of inquiry, social roles were more clearly defined by gender, such as the head-based male world and body-based female world mentioned in chapter 2. In 2019, there is a much more fluid positioning of males and females in head-based and body-based social worlds. Using a binary approach to issues of gender, authority and subordination recognises that it is thinking, talk and behaviour (more than the gender of the individuals involved) that organises which knowledge is 'authorised' and which is overruled and displaced.

Nursing was born in the church and raised in the military[20]. Although modern workplace culture advocates may dispute it, subordination is woven into the fabric of the nursing profession in very tangible ways that are perpetuated by institutional practices (Campbell, 2000). Gender stereotypes attribute caring and nurturing to women (making nursing women's work), which is still considered less important than men's work (Eliason, 2017). Caring is something that (predominantly) women (mothers, grandmothers, aunts) do at home for free. Socially constructed knowledge about the (unpaid) *value* of caring is implicated in the social value placed on nursing care as paid professional work. Nurses find themselves organised to continue to care for patients outside their contracted and remunerated hours by the expectation that caring is the 'natural' way of women (Campbell, 2000). I maintain that the binary framework aligns methodologically with an investigation of objectifying ruling relations. I conceive nurses' work (and the underlying construct of nursing and care as women's work) as representative of the characteristics of the feminine binary – intuition, care, subjectivity, and empathy, whereas the medical profession and management practices incorporate

[20] Quote attributed to Florence Nightingale on various social media sites but without a specific academic reference.

logic, rationality, objectivity, and authority which are characteristic of the masculine binary (Eliason, 2017). One form of knowledge is accorded higher value and legitimacy over the other.

Conclusion

This chapter lays out the research processes of this study, providing a discernible and logical trail shaped by the ontological commitments of institutional ethnography. Focused attention on research processes, data analysis, ethical considerations and reflexivity has been maintained to maximise the safety of all participants and data during what has proven to be a highly politically charged period in the chronology of the Nurse Safe Staffing Project in NZ. Campbell & Gregor state that "[r]esearch knowledge may be a tool for social justice, or conversely, it may be a tool for managing and ordering people into conformity with interests that are neither ours, nor theirs" (2004, p. 16). This project seeks to make the social and political relations of the Nurse Safe Staffing Project more understandable to realise tangible opportunities for change in the interests of frontline nurse staffing and patient safety.

Chapter 4 – Context for this investigation

The nurse staffing literature and the Nurse Safe Staffing Project

Introduction

The purpose of this chapter is to provide context to this investigation. I examined national and international reports, three decades of research literature, grey literature, social media, and numerous other sources, for the socially constructed knowledge that organises what people know and say about nurse staffing. In the second part of this chapter, I trace the texts and milestones of the Nurse Safe Staffing Project and its strategies, to illuminate how socially constructed nurse staffing knowledge and discourses have been taken up in NZ.

The lineaments of institutional ethnography, and how they frame this study, were detailed in the previous two chapters. Choosing institutional ethnography as the research strategy has implications for the examination of existing knowledge, its social construction, what counts as knowledge and what and whose knowledge is considered authoritative. In the following section, I detail the approach I have taken to the literature that aligns with the conceptual framing and central ontology of an institutional ethnography.

Approach to the literature

An institutional ethnographer reads the literature for the traditional reasons, as well as for the social construction of knowledge and authority (Campbell & Gregor, 2004; Coughlan, Conan and Ryan, 2013; Walby, 2007). A researcher critiques the literature to understand what is known, and to locate their contribution within the research territory and discourse communities of their topic (BadenHorst, 2018; Campbell & Gregor, 2004; Coughlan, Conan and Ryan, 2013). Also, rather than taking the content of the literature as unrefuted truth based solely on scientific merit, an institutional ethnographer examines how the research is socially constructed, and how the research, in turn, constructs knowledge, discourse and action (Campbell & Gregor, 2004; Walby, 2007).

Knowledge making traditions are contested terrain (Badenhorst, 2018; Hamilton & Campbell, 2011; Knorr-Cetina, 1999; Seidman, 2017). Murray, Holmes & Rail (2008) make use of Foucault's term *episteme* to describe the construction of knowledge, the regime of truth, which holds at any given time in history. An episteme describes the often unconscious rules in each era that determine what can be taken seriously, how we think, write, read and act and what governs our behaviour (Foucault, 1970). In this chapter, I examine the nurse staffing and healthcare environment knowledge that is taken seriously and the ways in which this knowledge gains authoritative status.

Smith (2006) and Rankin (2017a, 2017b), caution the institutional ethnographer to maintain a stance in relation to the literature so that their own research does not get pulled off track by pre-existing authoritative knowledge. Instead, an institutional ethnography takes the knowledge of research participants as experts in their own experience. Connections between participants, the relations that orchestrate their experiences at various locations on the research terrain are considered the empirical knowledge of primary relevance to the study (Campbell & Gregor, 2004).

As the study progresses, the researcher enters a conversation with the literature (Campbell & Gregor, 2004). First, identifying what the 'big conceptual and scientific ideas' relevant to the topic are, then assessing how they have become so. Secondly, returning to the literature as research findings emerge from the iterative analysis. Throughout this investigation, the conversation with the literature was responsive and ceaseless, beginning ahead of data collection, developing as findings emerged, and continuing until the last words were written. In this way, the literature is woven throughout the thesis rather than contained to a single chapter.

Search strategy

The search strategy involved accessing peer-reviewed journals through electronic databases such as EBSCO; Web of Science; Scopus; Discover; and the Cochrane Collaboration; texts through library catalogues; research and grey literature through internet search engines such as Google Scholar and www.greynet.org. Funded research, yet to be completed, was accessed via university websites and the national institute for health research at www.nihr.ac.uk. Databases of abstracts of reviews of effectiveness

(DARE); NHS economic evaluation database (NHS EED); and evidence for policy and practice information & coordination centre – http:/eppi.ioe.ac.uk/cms (social policy, public health & education). Recent research was accessed via ResearchGate. Unpublished theses were accessed via ProQuest and www.theses.com, as well as conference proceedings, lectures, and PowerPoint presentations via YouTube.

Social media and contemporary text media were essential sources of the social and political debates associated with patient safety and nurse staffing. National and international press coverage was also incorporated, including newspaper articles and websites, as well as social media campaigns on Facebook. Moreover, professional and nursing union websites were accessed to assess the uptake of this knowledge into policy, legislation, campaigns and the development of nurse staffing strategies for deployment in hospitals.

Alerts were established in several databases to maintain currency with publications over the course of the investigation. Alerts were established in EBSCO, Web of Science and Google Scholar automatically notifying new publications associated with nurse staffing, patient safety, nursing workload measurement, nurse staffing tools/ strategies, as well as any publications by high profile researchers on nurse staffing. Additionally, I established alerts for newly completed or published institutional ethnographies involving frontline nurses and nurse staffing.

Search terms for nurse staffing initially included combinations of 'nurs*', 'staff*', 'patient', 'outcomes', and 'short-staffing', which resulted in numerous primary research sources as well as critiques, syntheses and meta-analyses of this research. Key authors were identified and their publications traced, reviewed and mapped to track the development of ideas, findings, influence and debates over time. Themes associated with nurse staffing were traced using combinations of the search terms 'nurs*', with 'care', 'rationing', 'left undone', 'missed', 'burnout', 'dissatisfaction', 'education', 'patient safety', 'care quality', 'mortality', 'nurse sensitive indicators' 'after hours', 'new public management', 'restructure', 'efficiency', 'management' and 'leadership'.

Search terms for new public management were included with nurse staffing in university databases, and also in separate searches using the terms 'new public

management', with 'healthcare', 'reform', 'erosion', 'professional knowledge', 'professional jurisdiction', 'the professions', 'productivity', measurement', 'performance' and 'outcomes'. In addition, I located several relevant books published in NZ, as well as publically available reports on NZ Government and Ministry of Health websites, in the popular press (such as the Listener), and some television documentaries.

Search terms for institutional ethnography, using the databases listed above, included 'institutional ethnography' and 'Smith', 'institution*', 'ethnography', 'knowledge', 'nurs*', 'frontline', 'texts', 'discourse', 'discursive', 'map*', 'social organisation', 'social relations', 'institutional relations', 'organisation*', 'people', 'feminism', 'Foucault', 'Bakhtin', 'Marx' and 'Garfinkel'. In addition to scholarly articles, I accessed several books written or edited by Dorothy Smith featuring compilations of intuitional ethnography studies, and university websites and ProQuest for unpublished institutional ethnography theses.

Scope

The scope of a critique of the literature is an important consideration. The nurse staffing research territory is vast and complex. I have read widely, both the primary research (see Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Blegen, Goode, & Reed, 1998; Cho, Ketefian, Barkauskas, & Smith, 2003), systematic reviews (Butler et al., 2011; Lankshear, Sheldon, & Maynard, 2005), syntheses of this research (Donaldson & Shapiro, 2010; Griffiths et al., 2016), as well as meta-analyses (see Kane, Shamliyan, Mueller, Duval, & Wilt, 2007). In addition, I read global level reports, local nurse staffing strategies, nurses' union campaigns, conference presentations and social media. In the following section, I detail what I have learned about the social construction of nurse staffing knowledge.

The social construction of nurse staffing knowledge

Reading the nurse staffing literature, three dominant discursive social organisers come into view: healthcare reform, a global shortage of nurses, and the global patient safety movement. I begin with healthcare reforms.

Healthcare reforms

Healthcare reforms, organised by New Public Management, NPM, swept across OECD countries in the late 1980s and early 1990s. New public management comprises theories, ideas and practices, which create and sustain competition, place significant importance on parsimony (extreme unwillingness to spend money or use resources) and establish direct hands-on generic management of professional frontline workforces (Gruening, 2001; Verbeteen & Spekle, 2015). Further, it includes enforcing the adoption of measurable performance markers and pre-set outcome measures, and surveillance and regulation of professional workforces through audit and inspection (Dent, Chandler & Barry, 2004; Hood 1991, 1995).

The impact of these reforms on nursing worldwide was significant. Professional authority was systematically stripped away (Dent & Barry, 2004). Organisational restructures weakened professional nursing leadership and accountability (Carryer, Diers, McClosky & Wilson, 2010). 'Cost saving' measures reduced bedside nursing numbers, increased the workload, diluted the workforce with unlicensed assistants, and reduced employment opportunities for nursing students (Aiken, Clarke, Sloane, Sochalski, & Silber 2002; Aiken et al., 2012; Blegen, Vaughn, & Vojir, 2008; Carryer, Diers, McClosky & Wilson, 2010; Gauld, 2009; Griffiths, et al., 2016; Kawolski & Anthony, 2017; Longmore, 2017)

In NZ, NPM reforms of the later 1980s (described by the press as a 'blitzkrieg'[21]) were undertaken at a scale and pace unprecedented anywhere else in the OECD (Gauld, 2009; Trailblazers, 2017; Schick, 1996). Two key documents contributing to the health sector reform in NZ were the 'Choices for Healthcare' (Report of the Health Benefits review, 1986) of predominantly primary health services, and the 'Unshackling the Hospitals' (Report of the Hospitals and Related Services Taskforce[22], 1988), which focused primarily on hospitals and related services. The recommendations made in these reports heralded reform processes that would see 'power' moved from the professions

[21] A military tactic designed to create disorganisation among enemy forces in a series of lightning attacks that reduce the opportunity of the enemy to regroup before the next lightning strike, www.history.com/topics/blitzkreig.

[22] Known as the Gibbs report after the Taskforce Chair.

to the 'new managers', who were then given almost sole responsibility for the 'measures' deemed most relevant to the new managerial regime. In addition, the newly elected Labour government engineered pace and power into the reforms by backing them with legislation[23] (Gauld, 2009; Schick, 1996).

Nursing, due to the size of its workforce in hospitals, was traditionally viewed as a cost rather than an investment, and a soft target when healthcare savings and efficiencies were being prioritised (Carryer, Diers, McClosky & Wilson, 2010). The Employment Contracts Act (1991) meant that nurses had little say in the reform-led changes being wrought around the country, despite the effects on nursing numbers, patient outcomes, and nursing workloads, being obvious, and in some cases, catastrophic (McClosky & Diers, 2005).

Although I describe the nature and impact of these reforms in the past tense, NPM reforms remain an intrinsic element of contemporary healthcare. Figure 5 (below) is a text excerpt from the OECD (2017) Ministerial statement detailing the next wave of health reforms for OECD countries.

Figure 5 The next generation of health reforms

OECD Health Ministerial Statement - The next generation of health reforms

17/01/2017 - OECD Health Ministers meeting in Paris have underlined their commitment to tackling important challenges facing health systems around the world. These include: improving the delivery of high-quality care for all, while eliminating ineffective care; addressing how to pay for effective health technologies; measuring health system performance on the basis of what it delivers to people, as well as making better use of health data; and making health systems more people-centred.

The NPM principles of improving care quality, performance measurement, fiscal constraint, eliminating waste, and increasing technology and data as the basis for decision-making, remain the prevalent ideas organising the priorities of healthcare environments, and the people who work in them. Concurrent with widespread and ongoing managerial reform is the global shortage of nurses.

[23] Such as the State Sector Act (1988), and the Public Finance Act (1989).

Global nursing shortage

Authoritative reports and discourses construct knowledge of a worldwide nursing shortage. The World Health Organisation (WHO), the Organisation for Economic Cooperation & Development (OECD, 2005), and the International Congress of Nurses (ICN, 2006), have produced extensive diagnostic reports on the problem of the global nursing shortage, claiming escalating demand (patient numbers and needs) and diminishing supply (of nurses) as the crux of the shortage. In addition, the United Nations (2013) cite the ageing population as changing the demands on the types of healthcare required and the demand on healthcare services, as well as an ageing population of nurses (see Buchan, Duffield & Jordan, 2015, for data on projected nursing workforce shortfalls in Canada, Australia and the United Kingdom). The causes of the nursing shortage are detailed in these diagnostic reports and nursing shortage research.

In the research literature, cost-saving measures of managerial reform were implicated in reduced nursing numbers at the bedside and in nursing training facilities, but other factors also contribute to this global nursing crisis (Aiken, Clarke & Sloane, 2001; Oulton, 2006). These factors include reliance on immigration for frontline nursing supply, an ageing population and nursing workforce, an ageing workforce un-replenished by new recruits or qualified nurses returning to work, and under-resourcing of work environments and other professional workforces (Oulton, 2006; Attree et al., 2011; Buchan, Duffield & Jordan, 2015). Not least of these contributing factors is debate over the definition and measurement of 'nursing shortage', (Buchan, Duffield & Jordan, 2015). Buchan and Aiken argued that "the 'shortage' of nurses is not necessarily a shortage of individuals with nursing qualifications, it is a shortage of nurses willing to work in the present conditions" (2008, p. 3262).

Strategies to address nursing shortages (and the 'present conditions') are detailed in the ICN report (2006). In the report,[24] The ICN calls for the development, implementation and financing of "macro-economic and health sector funding policies; workforce policy and planning, including regulation; positive practice environments and organisational performance; recruitment and retention. Policies are also to address in-

[24] www.who.int/workforcealliance/knowledge/resources/icn_nursesretention/en/

country maldistribution and out-migration; and nursing leadership" (2006). These conceptualised recommendations are to be interpreted into policy and strategy by each country's national policy writers and workforce groups and activated locally by hospital managers and nursing leaders.

National policy writers and workforce groups in NZ know that of all OECD countries NZ relies the most on international migrants to supplement its health professional workforces (OECD, 2016). Twenty-six per cent of nurses and forty-three per cent of doctors working in NZ are overseas trained, coming predominantly from the Pacific Islands, the Philippines, and India (Cassie, 2018; Ministry of Health 2016; New Zealand Immigration, 2019). There are also several districts in NZ that are 'hard to staff' requiring incentivised programmes such as voluntary bonding schemes (Ministry of Health, 2016). The healthy workplaces agreement (MECA Jun2018-July2020, p.67), and the conditions agreed in each round of enterprise bargaining, including nurse staffing strategies, are part of addressing the ICN's recommendations. These texts and activities attempt to mitigate the nursing shortage in NZ care settings and the threat this poses to patient safety.

Global patient safety movement

Patient safety, as a worldwide, professional, and organisational priority was gaining significant ground in the 1980s (Vincent, 2010). However, it is the Institute of Medicine (IOM), report, (1999), 'To Err is Human', that is widely thought of as the landmark document and textual catalyst for the global patient safety movement[25] (Kawolski & Anthony, 2017; Wachter, 2004). The primacy of patient safety can be seen in the work and texts of authoritative bodies such as the WHO, OECD and ICN. Collectively these authoritative bodies and reports construct how patient safety is understood and measured; principally using *sentinel*[26] and *adverse*[27] events.

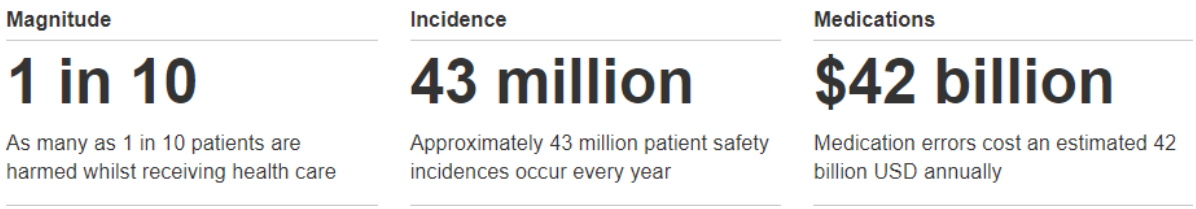
The socially constructed categories of *sentinel* and *adverse* patient events construct patient safety work and texts in NZ hospitals. New Zealand nurses contribute

[25] An example of a boss text.
[26] Errors that should never occur such as failure to remove a foreign surgical body (such as a gauze swab).
[27] Such as post-operative sepsis, which cannot be avoided entirely in high-risk procedures. Sentinel events can point to systemic failures where there are increased incidences in aggregate numbers.

to national data on patient safety and harm events by completing reports (called Incident Reports or Reportable Events Forms - REFs). The data professionals and hospitals collect and report on patient harm events contribute to national and global knowledge about patient safety and patient safety failures.

Aggregated patient harm data from multiple countries makes a compelling case for the ongoing global level patient safety movement, as figure 6 (below) shows.

Figure 6 World Health Organisation (WHO) statistics associated with patient safety



As well as defining patient safety and describing the types of harm patients experience, the WHO identifies policy direction and organisational activities to mitigate risks to patient safety including "clear policies, leadership capacity, data for decision-making and improvements, appropriately skilled health care professionals and involvement of patients in their care"[28].

Patient safety is a central pillar of nurse staffing research. The claims assert that appropriately skilled nursing numbers at the bedside are a critical part of reducing patient injury, complications that extend the length of stay in the hospital, and the risk of death[29] (Aiken et al., 2012, Aiken et al., 2014; Griffiths et al., 2016; Park, Blegen, Spetz, Chapman, & De Groot, 2012; Shekelle, 2013). In a recently published review, focusing on patient safety over 100 years of publications in the American Journal of Nursing, Kawolski and Anthony state that,

> "[e]mphasis on patient safety increased as patient care increased in complexity. As nurses developed a professional identity, they often put a spotlight on safety concerns and solutions. The IOM report, which encouraged research focused

[28] https://www.who.int/patientsafety/en/
[29] Failure to rescue and 30-day mortality

> on systemic solutions to errors, was instrumental in furthering the very culture of safety that the nursing profession had championed" (2017, p 34).

However, a recent report by the British Care Quality Commission states "all hospitals told us that patient safety was their top priority, but too often they did not have an effective safety culture or reliable systems to ensure this" (2017, p. 8). Much of the failure in patient safety culture and systems can be traced to tensions between the (idealised) thinking and discourse of the patient safety movement, and the competing and constraining priorities of care environments organised by NPM thinking and imperatives (Beaver, 2019; Church, Gerlock, & Smith, 2018; CQC report, 2017). High profile inquiries into catastrophic failure of patient care in hospitals, such as the IOM report (1999), the Bristol Infirmary Inquiry, (2001), the Mid Staffordshire NHS trust inquiry (Francis, 2013) and the review of patient care in 14 NHS trust hospitals (Keogh, 2013), have highlighted that in many cases professional concerns about patient safety were overridden by accountability, fiscal constraint and organisational performance priorities.

New Zealand's frontline nurses know that patient safety is one of their primary accountabilities, constructed by their evidence-based nursing education, by their professional competency assessment framework, and the legislative framework of the Health Practitioners Competence Assurance Act (2003). Nurses' education embeds knowledge about critical surveillance and monitoring work that forms the basis for intelligent nursing care decisions and interventions. Professional nursing competencies, set by NZ's national nursing regulatory body[30], are the basis for assessment of nurses' fitness to practice, become a registered nurse, and carry an annual practising certificate. Several of these competencies relate specifically to safety, such as, promoting an environment that enables health consumer safety (Competency 1.4), providing all of the planned nursing care to achieve outcomes (Competency 2.4), and acting appropriately to protect oneself and others in the case of unexpected events, personal threats, and crisis situations (Competency, 2.5) (Nursing Council of New Zealand, 2007). Similar to the findings of the British CQC report (2017), frontline nurses in NZ experience the tension between an emphasis on professional accountability for patient safety and inadequate

[30] The New Nursing Council of New Zealand- a nursing regulatory body whose primary purpose is to protect the public.

resourcing of the care environment that diminishes their ability accomplish patient safety (more on this in the second half of this chapter).

New Zealand has several organisations[31] that enact the boss texts of the WHO, OECD and ICN, writing policy and accountability for management, workforce and patient safety into NZ DHBs. The same global ideas in these boss texts organise much of the nurse staffing research. As stated earlier, the nurse staffing research spans more than three decades and constitutes an extensive and compelling body of knowledge. In the next section, I summarise the main investigative focuses of this research. I then detail the critical debates in the nurse staffing research, as well as the author and research carrying the status of authority on nurse staffing.

The nurse staffing research literature

Reading across the nurse staffing literature in my role as a CCDM consultant, as well as for this project, was undertaken to ascertain the main investigative focuses of the research. I have summarised these themes in table 4 below.

Table 4 investigative themes of the nurse staffing research literature

Impact of new public management reforms on nurse staffing Reduction of patient length of stay and hospital bed numbers and the impact of nurse staffing on hospital costs and patient length of stay (Thungjaroenkul et al., 2007), Hospital structures, restructures and processes (Gordon, 2005; Ozdemir et al., 2016; Weinberg, 2003)
Impact of nursing shortage on nurse staffing Local nursing shortage (Aiken, Blendon & Rogers, 1981), Global nursing shortage crisis (Bartosiewicz, Burzyńska, Chmiel, & Januszewicz, 2019; Oulton, 2006), Strategies for recruitment and retention in clinical practice and education (Feldman, 2003)
Outcomes - consequences of inadequate staffing for nurses and patients Burnout (Aiken et al., 2002; Unruh, 2008), Work dissatisfaction (You et al., 2012), Failure to rescue (Clarke & Aiken, 2003; Needleman, Buerhaus, Stewart, Zelevinsky, & Mattke, (2006), 30 day mortality rates (Aiken et al., 2002; Kutney-Lee, Sloane, & Aiken, 2013; Twigg, Duffield, Thompson, & Rapley, 2010), Patient outcomes and nurse sensitive patient outcomes (Aiken et al., 2012; Cho et al., 2003; Estabrooks et al., 2005; He, Staggs, Bergquist-Beringer, & Dunton, 2016; Kane, Shamliyan, Mueller, Duval, & Wilt, 2007; Lake, Shang, Klaus, & Dunton, 2010; Park, Blegen, Spetz, Chapman, & De Groot, 2012; Patrician et al., 2011; Sasichay-Akkadechanunt, Scalzi, & Jawad, 2003; Seago, Williamson & Atwood, 2006), Avoidable threats to patient safety and mortality, (Ball et al., 2018; Needleman, Buerhaus, Pankratz, Leibson, Stevens, Harris, 2011)

[31] Such as the NZ Healthy Quality and Safety Commission (HQSC), and the NZ Ministry of Health (MoH).

Economic rationalisations for, and the value of, adequate nurse staffing Nurse staffing business case for quality (Needleman, Buerhaus, Stewart, Zelevinsky, & Mattke, 2006), Adequate staffing as a cost-effective value proposition (Dall, Chen, Seifert, Maddox, & Hogan, 2009; Shamliyan, Kane, Mueller, Duval, & Wilt, 2009; Twigg et al., 2015)
Patient classification and workload management –measuring patients, nurses and nursing work Patient classification systems (Fasoli & Haddock, 2011), Nursing Hours Per Patient Day (NHPPD) (Twigg,et al., 2011), 'Nursing hours' and 'nursing' hours (McGillis Hall, Doran, & Pink, 2004; Toffoli, 2011), Using workload measurement tools in diverse care contexts (Fanneran, et al., 2015; Swiger, Vance & Patrician, 2016)
Incomplete patient care Care rationing (Schubert, Glass, Clarke, Schaffert-Witvliet, De Geest, 2007; Shubert et al., 2013), Missed care (Jones, 2015; Kalisch & Williams 2009, Kalisch et al., 2011), Care left undone (Ball et al., 2014), A review of quantitative studies on care rationing (Papastavrou, Andreaou & Efstathiou, 2014), Environmental factors that impact on missed care (Jangland, Teodorsson, Molander, & Athlin, 2018; Kim, Yoo,& Seo, 2018; Park, Hanchett, & Ma, 2018; Winters, 2010), Effect of work intensification (Willis, Harvey, Thompson, Pearson, Meyer, 2018)
Public inquiries into patient care failures in which nurse staffing is implicated; Bristol Royal Infirmary Inquiry, (2001), Inquiry into care at Mid Staffordshire NHS trust (Francis, 2013), Review of hospital care in 14 NHS trust hospitals (Keogh, 2013), Review of 18 public inquiries in the UK & Canada (Church, Gerlock & Smith, 2018)
Nurse staffing strategies Staffing committees (Hamilton & Campbell, 2011), Mandated minimum nurse-patient ratios/regulations (Aiken et al., 2010; Donaldson & Shapiro, 2010; Gordon, Buchanan & Bretherton, 2008; Shekelle, 2013; Spetz, Harless, Herrera & Mark, 2013), The Safer Staffing Tool (The Sheffield Group, UK), Rafaella and Oulu Acuity tool (Fagerström, Rainio, Rauhala, & Nojonen, 2000), NICE staffing guidelines (Griffiths et al., 2016).

This table does not represent an exhaustive list of publications but does identify the vital investigative areas of the nurse staffing research. I move now to the key debates present in this literature (the contested knowledge), and then to the authoritative author and research, followed by a summary of nurse staffing strategies constructed by this research knowledge.

Key debates

The primary debate in the nurse staffing research is whether nurse staffing (numbers, education, skill mix, and experience) has a correlative or causal relationship with patient outcomes (Antonakis, Bendahan, Jaquart, & Lalive, 2010). For two outcomes,

30-day mortality[32] and failure-to-rescue, the consensus is strongly supportive of a statistically significant association (Aiken et al., 2002; Kane et al., 2007; Griffiths et al., 2016). For other patient outcomes, considered to be nurse sensitive, such as falls, infections, medication errors, the evidence is not unequivocal (Lankshear, Sheldon, & Maynard, 2005; Griffiths et al., 2016), and terms such as links and connections are used to describe these outcomes in the context of short-staffing. There are several reasons for this inconclusive and contested knowledge.

Inconsistencies with methodology, rigour, and measurement contribute to contested knowledge in the nurse staffing literature. The majority of the primary nurse staffing research employs retrospective observational methods (Griffiths et al., 2016) and large volumes of quantitative abstract datasets that do not (necessarily) link the care of individual patients to individual nurses (see limitations section of Aiken et al., 2014). Variation in definition and measurement reduces correlations across countries and populations (Kane et al., 2007; Lankshear, Sheldon & Maynard, 2005). Variation in rigour, such as adequate accounting for variables and risks, results in counterintuitive findings (Dunton, Gajewski, Klaus, & Pierson, 2007; He, Almenoff, Keighly & Li, 2013). These inconsistent findings and contested knowledge limit both the strength of the argument, and the usefulness of the research for translation into ward level staffing strategies (Ahmad, Boutron, Dechartes, Durieux, & Ravaud, 2010; Griffiths et al., 2016).

Key author

An extensive appraisal of the nurse staffing literature identifies recurring authors and studies but none more so than that of Linda Aiken. Dr Aiken, a University of Pennsylvania Emeritus Professor, began publishing on nurse shortages in 1981 and continues to research nurse staffing and various intersecting topics such as the educational preparation of nurses, organisational factors, patient outcomes, and nursing outcomes. Aiken's research and research collaborations attract extensive research funding and are published in high ranking journals. As a single author and as a collaborator, Aiken's work was cited and referenced in more than 90% of the nurse staffing research reviewed as part of my work in *the unit,* and for this thesis. Hamilton et

[32] In general surgical patient populations.

al., state "[r]eferences and citations serve as textual evidence of the social organization of knowledge and play compelling roles in its creation, evaluation, and utilization" (2014, p. 400). See Garfield (2006), and Smith, D and Hazelton (2008) for the history and significance of journal citations, bibliometric and impact factors.

Aiken collaborated on a research investigation with 17 other PhD prepared researchers and authors, producing a publication in the Lancet[33] Journal in 2014. Aiken believed (while talking at a conference in Australia, 2014) that this was the first study on nurse staffing, by nurse researchers, to be published in the Lancet. The study, an extensive research project across multiple countries, incorporating millions of points of data from nurses, patients, and hospital level metrics, is one of, if not the most cited nurse staffing research publication since 2014[34].

In the (2014) conference presentation[35], Aiken says that the research (2014) "used nurses as informants but was actually measuring the performance of the organisation". She went on to describe the sorts of data that were sourced in order to be able to "believe what nurses were saying". Aiken says that the research she and her collaborators undertake is not to convince nurses of the problem, because they already know the answer, but to convince others (Aiken et al., 2014, Aiken, 2014). In NPM-led contemporary healthcare settings, it is business managers who invariably hold the budget for nurse staffing. It could be argued then, that generating vast amounts of quantitative and objective data, claiming that nurse staffing is a cost-effective way to improve desired patient outcomes (Dall, Chen, Seifert, Maddox, & Hogan, 2009; Needleman, Buerhaus, Stewart, Zelevinsky, & Mattke, (2006); Twigg et al., 2015), and save patients' lives (Aiken, 2001, Aiken, 2014), is a logical approach to 'convincing' managers orientated to measurement and performance against local and global policy targets. I am not suggesting that such an approach is incorrect, but I do argue that it is consequential for the situated professional knowledge of frontline nurses; knowledge

[33] One of the highest ranking professional journals worldwide.
[34] Web of Science (476 times), Ebsco plum metrics (abstract viewed 6671 times), and Google Scholar (cited almost 1100 times).
[35] Retrieved from https://www.youtube.com/watch?v=OGAU5rdfEg&t=2916s

that now needs to be endorsed by objectified data so that 'we can believe what nurses are saying'.

The socially constructed authority of large scale abstract sets of data reflects the current neoliberal episteme which privileges the calculable and quantifiable over the specific and individual (Murray, Holmes, & Rail, 2008; Mykhalovskiy et al., 2008; Stewart & Smith, 2015). The forms that are legitimised and authorised in the NPM of healthcare can be traced into the numerical construction of patients, nurses, and nursing work in nurse staffing strategies employed worldwide.

Nurse staffing strategies

In America, the IOM and Robert Wood Johnson Foundation (RWJF) text -*The Future of Nursing: leading change advancing health,* (2010) addresses nursing's role in safety, quality and healthcare reform, and has contributed to 15 states in the U.S and Canada agreeing to legislation that prioritises nurse staffing, (Donaldson & Shapiro, 2010; Hamilton & Campbell, 2011). Staffing committees, made up of organisational and clinical representatives, like those described in Texas by Hamilton and Campbell (2011), have proven to be the most common approach adopted. Hamilton and Campbell state "the policy, created by a hospitals staffing committee is intended to ensure a sufficient number and skill mix of nurses available to meet patients' needs by unit and shift" (2011, p 282). Among several findings Hamilton and Campbell state that "[s]ometimes what is thought to be needed is better presentation to direct care nurses of the staffing practices within the institutional framework of finance and accountability" (2011, p. 290). Some of the participants in Hamilton and Campbell's (2011) research said that this approach might help nurses accept objective staffing decisions made within the framework of productivity.

Mandated minimum nurse-patient ratios is another nurse staffing strategy employed, following substantial industrial campaigning, in five states in the U.S., (Institute for Health and Socio-economic policy, 2001) and three of five states in Australia. Proponents of the model believe it supports nurses to perform their primary function of surveillance and monitoring more effectively and supports early intervention on complications and deterioration (Shekelle, 2013). In a review of 12 studies on the

impact of California ratios on patient outcomes, Donaldson and Shapiro (2010) report no significant impact on nursing quality or patient care indicators. Donaldson and Shapiro's (2010) findings differs from those of a study comparing California ratios with staffing approaches in two other states conducted by Aiken, et al (2010), that determined that ratios resulted in lower patient mortality rates, higher nurse retention rates, reasonable nurse workloads and nurse-reported improvements in the quality of care.

Evaluation of the impacts and outcomes of mandated minimum nurse-patient staffing ratios have resulted in contested knowledge about the benefits and costs of the approach (Gordon, Buchanan & Bretherton, 2008; Shekelle, 2013). Some suggest that patient mortality and failure-to-rescue are positively affected (Aiken et al., 2010; Donaldson & Shapiro, 2010). Some suggest that nurses have reported the most significant impact in relation to their workload, the safety, quality and completeness of care they provide, and job satisfaction, (Aiken et al., 2010; Gordon, Buchanan & Bretherton, 2008; Lang, Hodge, Olson, Romano, & Kravitz, 2004). In Australia, acuity moderated minimum nurse-patient ratios were introduced as a result of negotiation between providers and nursing unions, using the research evidence, and the experience of California. The 'no more than four'[36] campaign, and petitioning for legislated ratios remains an ongoing priority in the face of increasing pressure on constrained health resources, (Australian Nurses Federation, n.d).

Elsewhere in the world patient acuity systems (such as TrendCare and Oulu), and staffing technologies (such as the Rafaela system) are being employed. In the UK, in the wake of the Mid Staffordshire Inquiry (Francis, 2013), the National Institute for Health and Care Excellence (NICE), was established as an independent body, to, among other things, review the extensive research and 'operationalise' it into staffing guidance for the British National Health Service (NHS). Upon release, the NICE guidelines were to be interpreted to inform local policy and practice suited to each NHS trust and its hospitals, with NICE providing guidance and implementation support[37] (Griffiths et al., 2016). This model is similar to the U.S. and NZ model in that guidance is provided for local context-specific interpretation and adaptation.

[36] https://www.anfiuwp.org.au/.
[37] https://www.nice.org.uk/about/what-we-do/into-practice.

Also, in Britain, the Shelford Group produced the Safer Nursing Care Tool (SNCT) as a method that can be used to assist chief nurses to determine optimal nurse staffing levels[38]. There are a number of commercially available tools which include sophisticated software for assessing workload, patient acuity and complexity, as well as systems that calculate patient demand in terms of numbers, time of day they present and total expected admissions and discharges for the day. Such tools purport to incorporate local context specific expert knowledge in staffing decision-making.

In the next section, part II of chapter 4, I present a short background to NZ's unique Nurse Safe Staffing Project. This section is based on my seven years in *the staffing unit,* relevant texts accounting for the work of *the staffing unit* I was able to access, and numerous conversations with people in hospitals, the nursing union, and staffing committees. To aid the reading of the next section, I have included a short glossary

Table 5 Glossary for chapter 4 part ii

Revisit the glossary for chapter 1 (p. 1) for explanations of the following	For short-staffed shift, DHB, the Safe Staffing Project, NZNO, the SSHWCOI, the COI report (2006), *t he unit*, the SSGG, Escalation Planning, CCDM, the MECA & OECD
Trendcare	An electronic patient acuity system. Currently licensed in 16 of the 20 DHBs in NZ (at the time of writing). Frontline nurses enter data into the TrendCare system on each patient at least twice on each shift
Patient categorisation	This is a function of the TrendCare system. Each patient is categorised according to their diagnosis and a selection of needs that appear in a dropdown list in the TrendCare patient categorisation screen. Each categorisation has an attributed range of averaged hours of care required called Hours Per Patient Day
Hours Per Patient Day (HPPD)	Describes the hours of care a patient who has been categorised by TrendCare will need, on average, over the next twenty-four hours. The HPPD often includes a range, e.g. the patient will need between 3.58-4.28 hours of care in 24 hours on average. The hours are then divided over the three shifts of the day. This is explained further in chapters 5 & 6
Reportable events or incident forms Abbreviated to REFs	Formerly documentary, now an electronic reporting system which DHBs provide for staff to alert risks, near misses, and incidents of patient or staff harm to a hospital department (usually called health quality and safety, or patient safety).

[38] http://shelfordgroup.org/library/documents/130719_Shelford_Safer_Nursing_FINAL.pdf.

New Zealand Nurse Organisation representatives (NZNO)	**NZNO Organiser** – knowledgeable on industrial issues, support for staff in disciplinary processes and grievances with employers, work with frontline staff to bring the voice of members to NZNO **NZNO Professional advisor** – advises members and DHB employers of policy and bargaining agreements, works with delegates and employers to educate members about new professional requirements **NZNO Delegate –** employed by the DHB as a frontline nurse (or midwife), supports staff at the frontline and disseminates conditions brought to the organisation by the Organiser and Advisor

How nurse staffing research knowledge has been taken up in NZ

The Nurse Safe Staffing Project was set up against the backdrop of health reforms, which began in earnest in NZ during the late 1980s, targeting the efficiencies and cost containment ideas of NPM. The impact of these reforms was quickly apparent. Between 1989 and 2000, the average length of stay for medical and surgical patients dropped by 20%, while nursing numbers dropped by 36% (McClosky & Diers, 2005). In a later study by Carryer, Diers, McClosky, & Wilson (2010) using an interrupted time series, the nadir in nursing hours (in relation to 1000 patient days) was alarmingly evident (see the graph in figure 7 next page).

Figure 7 Graph of total nursing hours to 1000 patient days in NZ (graph from Carryer et al., 2010)

The nadir, beginning in 2001, coincided with nurses (and a percentage of NZ's midwives) beginning a round of bargaining for wages and working conditions. During these negotiations, nurses reported concerns for patient safety brought on by unmanageable workloads on the day of care that were the result of short-staffing (COI report, 2006). In 2018, nurses across NZ staged their first nationwide strike in 30 years after wages and working conditions negotiations stalled, and because their frustrations and concerns about threats to patient safety and short-staffing remain unresolved.

A timeline of the Nurse Safe Staffing Project

In the timeline in figure 8 (next page), I trace the texts and milestones of the Nurse Safe Staffing Project, beginning in 2001 with the nadir and nurses' concerns, and ending with the nurses' strike in 2018. I focus on several milestones in the timeline because, I assert, these decisions, activities and texts are fundamental to developments in the Nurse Safe Staffing Project trajectory and to the current status of nurse staffing in NZ. Lilac rows indicate processes, campaigns and activities while purple rows indicate texts.

Figure 8 Timeline detailing texts and milestones of the Nurse Safe Staffing Project

Year	Activity/text
2001	Enterprise bargaining between the DHBs and the NZNO- nurses/midwives, expressed concerns about workloads and patients safety
2004	Enterprise bargaining between the DHBs and the NZNO - nurses/midwives concerns persisted. NZNO members sought an enforceable mechanism for controlling and regulating staffing NZNO Safe Staffing Healthy Workplaces campaign
2004	NZNO text *Nursing the system back to health* released in support of mandated minimum nurse-patient ratios
2004	NZNO and DHBS agree to work together on safe staffing healthy workplaces as an agenda of shared interest
2005	Safe Staffing Healthy Workplaces Committee of Inquiry convened
2006	Safe Staffing Healthy Workplaces Committee of Inquiry (COI) report released. COI disestablished
2007	Safe Staffing Healthy Workplaces Unit is established to operationalise the COI report
2008	Safe Staffing Healthy Workplaces Unit begins work on Escalation plans in DHBs Extensive partnership work was undertaken in some DHBS and NZNO regions in preparation for working together on the shared agenda
2008	Nurse and midwives to use hospital incident reporting systems to report short-staffing, threats to patient safety, and harm to patients & staff
2009	Three demonstration site DHB initiative is launched to progress the recommendations of the COI report and nurse staffing best practice into DHBs Principle finding from the 3D initiative is that to 'do' the FTE calculation DHBs must have patient acuity capability Large scale change workshops held in 3D DHBs
2009	In meeting minutes of SSHW governance group the term Care Capacity Demand Management appears for the first time
2010	The second intake of implementation in DHBs begins
2011	The third intake of DHBs Advisory groups established for midwifery, district nursing and allied health to develop acuity capability in preparation for Care Capacity Demand Management
2012	Fourth intake of DHBs
2013	Fifth intake of DHBs
2014	Sixth intake of DHBs
2015	FTE Calculation software (version 1) is released to pilot DHBs Independent evaluation of the Care Capacity Demand Management (CCDM) Programme is conducted
2016	FTE calculation software version 2 released

Year	Activity/text
	Work on a Care Capacity Demand Manual begins Sector standards for assessing the progress of CCDM implementation – national assessment process
2017	Care Capacity Demand Management was copyrighted to the NZ Ministry of Health Enterprise bargaining round nurses/midwives see a minimal difference at the frontline associated with workload and staffing
2017	National Validated Patient Acuity Standards for CCDM established
2018	FTE calculation software version 3 released CCDM online instructional manual is completed
2018	Successive MECA offers from enterprise bargaining rejected NZNO members balloted for strike action Nationwide nurse strike (first strike action in 30 years) Minster of Health brokers a staffing accord and commits resources to address persistent nurse short-staffing.

The decision to collaborate (2004)

In 2004, NZ nurses entered another round of enterprise bargaining and signalled that their concerns about workload and patient safety (reported in the 2001 round of bargaining) persisted. In 2004, nurses, through their union (NZNO), were seeking an enforceable mechanism for controlling and regulating nurse staffing levels (COI report, 2006). The NZNO text *Nursing the system back to health* was produced in support of a claim that mandated minimum nurse-patient ratios were the mechanism nurses wanted to protect patients and ensure safe staffing numbers (COI report, 2006).

The 2004 bargaining round resulted in an agreement between the nurses' union (NZNO), and the DHBs (previously on opposite sides of the bargaining table) to collaborate on safe staffing healthy workplaces as an agenda of shared interest (COI report, 2006; Lawless, 2014). Discussions between the new collaborators determined, at the time, that mandated ratios were a blunt tool and they elected to explore a more sophisticated and nuanced solution. As a result, the Safe Staffing Healthy Workplaces Committee of Inquiry (abbreviated for ease to SSCOI[39]) was established, with the nursing union and DHB members, Ministry of Health involvement, and an independent chair (COI

[39] Safe Staffing Committee of Inquiry

report, 2006). Figure 9 (below) is a text sample describing the significance of the decision to collaborate and establish the SSCOI.

Figure 9 Text sample from the right care in the right place at the right time: The Safe Staffing Healthy Workplaces Unit: 2007-2014

> Several features related to the SSCOI are worth noting. First, the establishment and proceedings of the SSCOI heralded a significant change in the nature of the relationship between the NZNO and the DHBs. In committing themselves to working together on an agenda of mutual interest, both parties moved away from entrenched positions. This enabled a wider range of possible solutions to be considered without prejudicing either party's overarching obligations. Secondly, there was a commitment to basing the recommendations on evidence, rather than on partisan positions.

Of note is the decision to mitigate the tension of the previously oppositional positions of the collaborators by basing their recommendations on evidence in the form of objective data. This agreement between the partners aligns with dominant discourses of quantitative research, evidence-based best practice, and NPM orientation to this type of data as the evidence to be used for decision-making.

The Safe Staffing Healthy Workplaces Committee of Inquiry (2005) and Report (2006)

Expectations were high among nurse union members, and nurse leaders and managers employed in DHBs, about the work and recommendations of this committee. Figure 10 (next page) is a text sample highlighting these expectations.

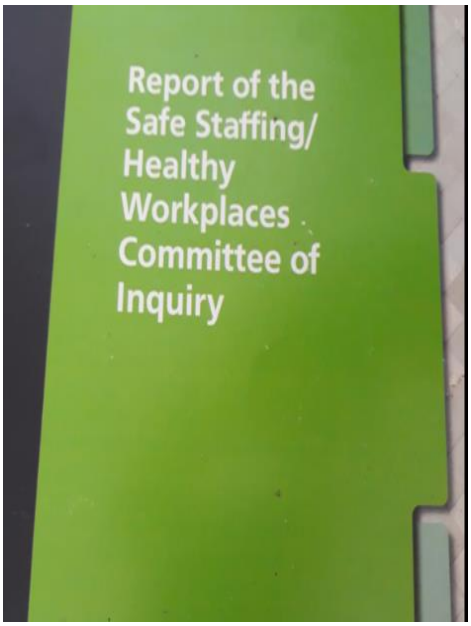
Figure 10 Text sample Kai Tiaki Nursing New Zealand (NZNO Journal) February 2005

Another significant gain through the MECA negotiations is the establishment of a safe staffing/healthy workplaces inquiry. This independently chaired committee of inquiry, with agreed numbers of NZNO and DHB representatives and clear terms of reference, will be set up within two months of a settlement. The committee will be able to make recommendations that require more money and these recommendations will be ratified by NZNO and the DHBs' chief executives' group before implementaton. Inquiry recommendations will be implemented by July 2006 or sooner.

The SSCOI's work was based on a review of the nurse staffing and healthy workplaces literature, which informed data gathering from visits to all DHBs. The SSCOI talked to a mix of managerial and professional staff from each DHB about how to achieve safe staffing and healthy workplaces in NZ hospitals. The SSCOI then released a summary and recommendations report (COI report 2006) and was disestablished having completed its purpose.

The Committee of Inquiry (COI) report (2006) identified ten conceptualised recommendations:

- Forecasting patients
- Smoothing the planned workload
- Estimating patient-generated staffing
- Estimating non-patient-generated staffing
- Estimating the effect of other moderating factors
- Provision for leave (annual, sick, parental and special leave)
- Fine-tuning and budgeting



- On the day (of care)
- Incident responsiveness
- Review

(See the COI report (2006) p. 62-72 for summaries of these concepts)

The COI report (2006) represents what Smith (1987) describes as a boss text. A document, 'in action' (Smith & Turner, 2014) that is replicable and that encodes subsequent texts, and in turn, coordinates the knowledge and activities of people across multiple settings and timeframes. The conceptual recommendations of the COI report (2006) organised the design and requirements of NZ's two nurse staffing strategies – Escalation planning and CCDM (*the programme*). The COI report (2006) has encoded the strategies and organised widespread and consequential outcomes for all stakeholders of the Nurse Safe Staffing Project, particularly frontline nurses (as will become apparent in this and subsequent chapters).

Accomplishing the recommendations of the COI report (2006) required a translation unit to integrate nurse staffing research and best practice with the recommendations of the report, and develop tools and processes for implementation into NZ hospitals. The collaborating parties petitioned the government for funding to progress the recommendations of the report, and NZD 1.3 million was initially provided to establish the Safe Staffing Healthy Workplaces Unit (*the unit*), and a governance structure for it (Lawless, 2014).

The Safe Staffing Healthy Workplaces Governance Group (shortened for ease to SSGG) (2007- present)

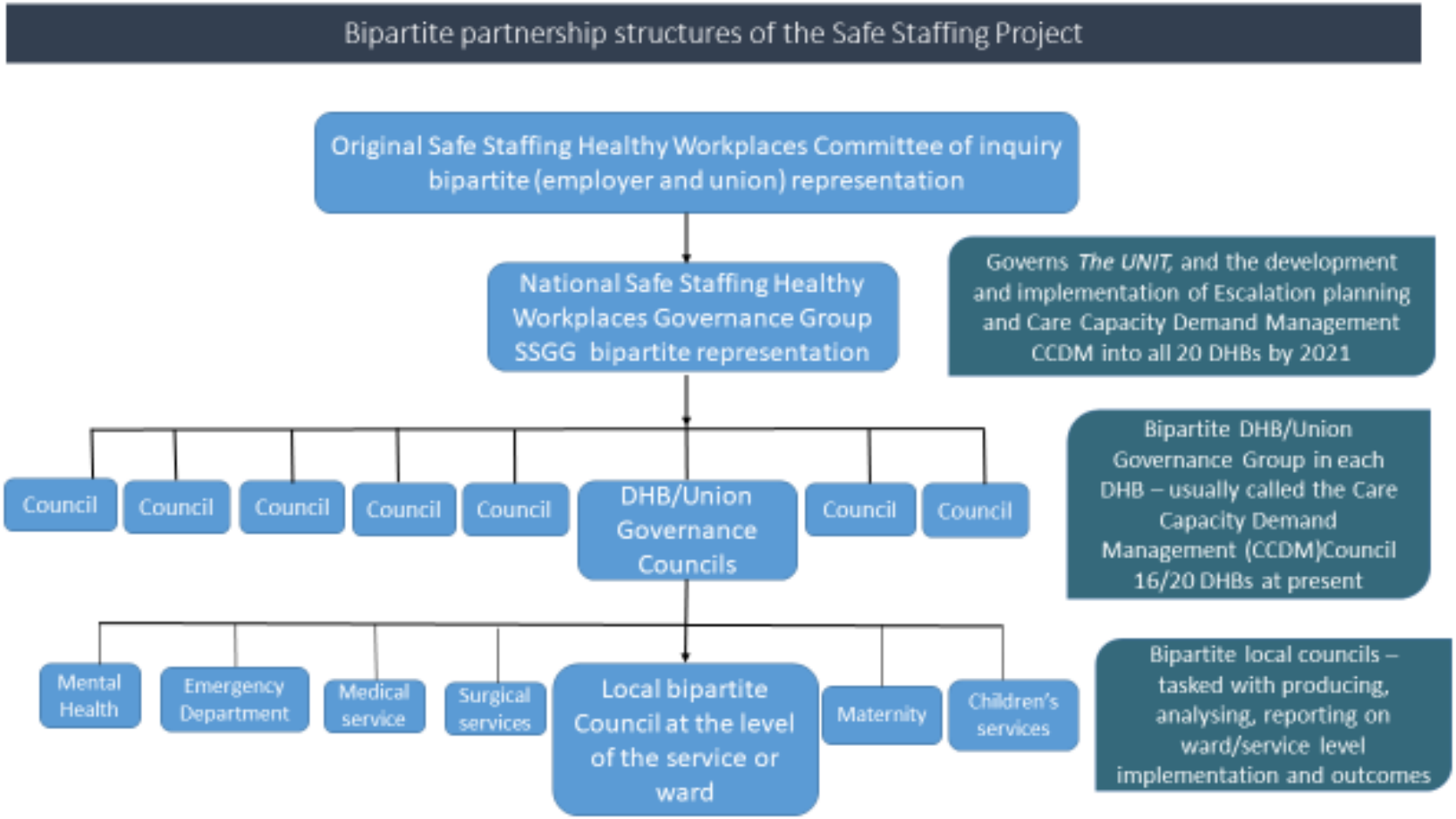
The SSGG contains representatives from the DHBs and NZNO, along with ex-officio members from the Ministry of Health (Chief Nurse's Office), and the Director of *the unit*. Over time, several other health service unions have joined the collaborative agreement[40] , and some have representatives on the SSGG. There is also a physician representative. This membership reflects the SSGG's ideas about the potential for

[40] The Public Service Association, (PSA) – Allied health and some mental health workers, MERAS –the midwifery union, and the Service and Food Workers Union (SFU).

Escalation planning and CCDM to be adapted for other health professional groups and services.

The bipartite (employer and union) partnership structure of the SSGG reflects that of the original SSCOI. The same (idealised) partnership structure is to be emulated in every DHB in the form of a governance council (more on this in chapter 8) and at the level of services and wards (see figure 11 below).

Figure 11 Bipartite structure from national governance to frontline settings



This structure is designed to ensure that both parties' interests are represented at each meeting. However, as I will show over subsequent chapters, there are power imbalances in these groups.

The Safe Staffing Healthy Workplaces Unit (2007-present)

The purpose of the work of *the unit* was to bring the COI report (2006) recommendations to fruition. The key goals of the staffing approach were:

- Assuring patient safety and satisfaction
- Supporting staff health and well-being
- Maximising organisational efficiency

COI report (2006, p. 66).

The unit was made up of former frontline nurses, and latterly a social worker to represent allied health interests in the strategies. From 2011 NZNO employed a nurse who worked half their time in *the unit* and half their time in NZNO, to learn the strategy and develop educational resources for the NZNO Organisers, Professional Advisors, and delegates who were going to be NZNO's representatives on councils in the structure in figure 11.

The unit team were tasked with developing a strategy/suite of tools to be applied directly to the operation of nurse staffing in NZ hospitals (and ultimately in other care and professional settings). Early work by the newly established *unit* focused on Escalation planning. Lawless describes the basis for this work, "this strategy focused on the development of mechanisms for nurses, midwives and employers to respond immediately if workloads exceeded determined levels. The reasoning appeared sound: to design and implement response mechanisms for times when workload exceeded safe boundaries" (2014, p. 15).

Escalation planning (2007-present)

Escalation planning work was leveraged against the assertion in the COI report (2006) that nurses' and midwives' professional judgement should activate the escalation response mechanism. The COI report states that "[t]he system must ensure that, where any nurse and midwife identifies that the limits of safe practice are at risk

of being breached, their professional judgement is acted upon, with an immediate and appropriate response to resolve the situation" (2006, p. 71).

The escalation response mechanism is described in the COI report (2006) as follows:

- When a nurse or midwife considers they have reached the limits of safe practice, they will be supported to resolve the situation as follows:
- The nurse or midwifery manager or duty manager will be immediately informed of the situation by the nurses or midwife
- The nurse or midwife will not be required to take additional workload until strategies have been implemented to address the immediate workload issues (e.g. the redeployment of staff or patients) notwithstanding any immediate duty-of-care requirements (2006, p. 13).

This process was ultimately incorporated into the enterprise bargaining agreement and became known as Clause 6 (MECA agreement Aug2015-July2017). During the Escalation planning work of *the unit* nurses and midwives in DHBs were taught to use the DHBs reportable events system[41], to report occasions where staffing fell short of the planned roster, and their professional judgement about patient safety and manageable workloads. The reportable events system already existed in hospitals as a reporting mechanism associated with organisational patient safety policy.

In a stocktake of the progress of *the unit* in 2009[42], it was determined that although there had been some gains, the Escalation planning strategy did not appear to have achieved the outcomes hoped for (Lawless, 2014). However, aspects of the original Escalation planning strategy remain, notably notification of the Duty Nurse Manager and completion of Reportable Events Forms (REFs) by nurses to report staffing and patient safety concerns, or harm, as well as organisational procedures for responding to these alerts. This process is still an active safe staffing strategy in all

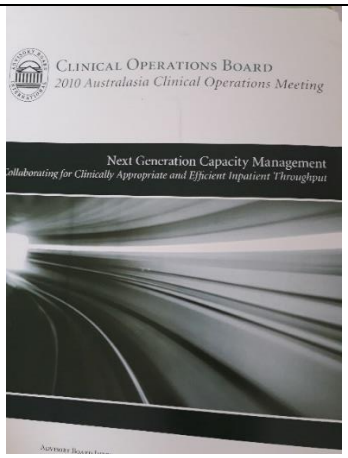
[41] REFs are completed by nurses/midwives and are transmitted to various organisational representatives including people collecting data on sentinel and adverse patient outcomes.
[42]Undertaken by the Safe Staffing Healthy Workplaces Governance Group and the parties.

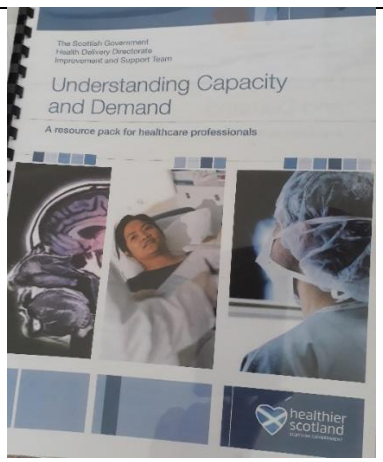
DHBs in 2019, although not without limitations as will become clear in subsequent chapters.

The next phase of development (called the three demonstration site initiative or 3D initiative) was to establish incubator sites where working DHBs developed and tested a 'whole of system' approach to the recommendations of the COI report (2006). The focus of activities during the initiative was to develop a sophisticated approach to determine care requirements; develop processes to match these requirements with appropriate resources; develop a dataset relevant for all stakeholders and develop processes for responding to variation in care requirements (Lawless, 2014).

Of note here, is the conspicuous absence of the mention of safe staffing or healthy workplaces. During the 3D initiative, *the unit* team and SSGG[43] were examining global trends in the management of staffing, demand on service, and hospital capacity, and their discourses and textual tool development began to reflect these trends. Concurrently DHBs were instigating other contemporary organisational programmes (from the British NHS, Australia and the USA), targeting efficiency and productivity, such as 'lean thinking', 'releasing time to care', 'large scale change', 'clinical operating' and so on. Part of the best practice evidence *the unit* and DHBs were reading included such texts as the two in Figure 12 (next page).

Figure 12 Images of reports examined and employed during the 3D initiative.





[43] Safe Staffing Healthy Workplaces Governance Group – see glossary for chapter 3.

These texts represented cutting edge thinking and strategies designed to improve patient safety and experience, as well as organisational performance. District Health Boards were also investing significant money into digital technologies producing data about patient numbers, flow, acuity and length of stay. In addition, at this time, the trend in healthcare environments was to adopt/adapt 'safety procedures' from the aviation and nuclear industries, to increase the 'situational awareness' of organisational decision makers.

The outcome of the 3D initiative was a selection of concepts and tools that blended these various health sector activities (priorities, discourses and technologies) of DHBs with the evidence of the research and recommendations the COI report (2006). Learning from the 3D initiative, the extensive review of the nurse staffing research and COI recommendations coalesced into a single programme. In meeting minutes between *the unit* and the SSGG in 2009, the Safe Staffing Healthy Workplaces nurse staffing strategy was called the Care Capacity Demand Management (CCDM) Programme for the first time.

The Care Capacity Demand Management Programme (CCDM, the programme) (2009 –present)

In late 2009 and early 2010, I travelled to numerous NZ DHBs to 'roadshow' and promote the concepts, ideas and tools of the programme (before it became widely known as CCDM), as a whole of organisation approach for addressing safe staffing and healthy workplaces. Lawless states "the CCDM programme is a whole of organisation approach to ensuring that when patient care is delivered, the capacity is in place and resources are invested properly. The programme is supported by technical, structural and social elements" (2014, p. 6). The technical, structural, and social elements required were derived from experience during the 3D initiative. Having been encoded by the nursing research literature, nurse staffing strategies, and the collaborative agreement to seek impartial data for decision-making, the 3D initiative identified which data was needed, which data was available, and which data was missing from staffing decision-making.

One of the most significant learnings was the need to be able to measure how many patients needed to be cared for, as well as how sick they were. Numbers alone are

an inadequate measure of care needs as no two patients are the same. Two of the three DHBs in the 3D initiative used a patient acuity system (TrendCare) which produces patients acuity needs as the hours of care they will require over 24 hours (Hours Per Patient Day, HPPD). The same system measures nurses and nursing work in hours so that nurses can be added into an equation against the patients HPPD (TrendCare, patient acuity, measurement, and labour hours equations are covered in greater detail in upcoming chapters). An outcome of the 3D initiative was that without the ability to measure patient acuity using validated data DHBs were not able to implement the CCDM programme in its entirety. In this way, patient acuity became an essential technical pre-requisite to CCDM implementation that all DHBs needed to acquire. This requirement had significant implications and consequences which I explicate in later chapters.

Following the 3D initiative, other health professional groups expressed interest in engaging with the work of *the unit* to assist in the development of strategies adapted to these workforces. When I left *the unit* in 2016, they were engaged with several advisory groups exploring the implications and possibilities of CCDM including nursing, midwifery, allied health, mental health and addictions, and community and district nurses.

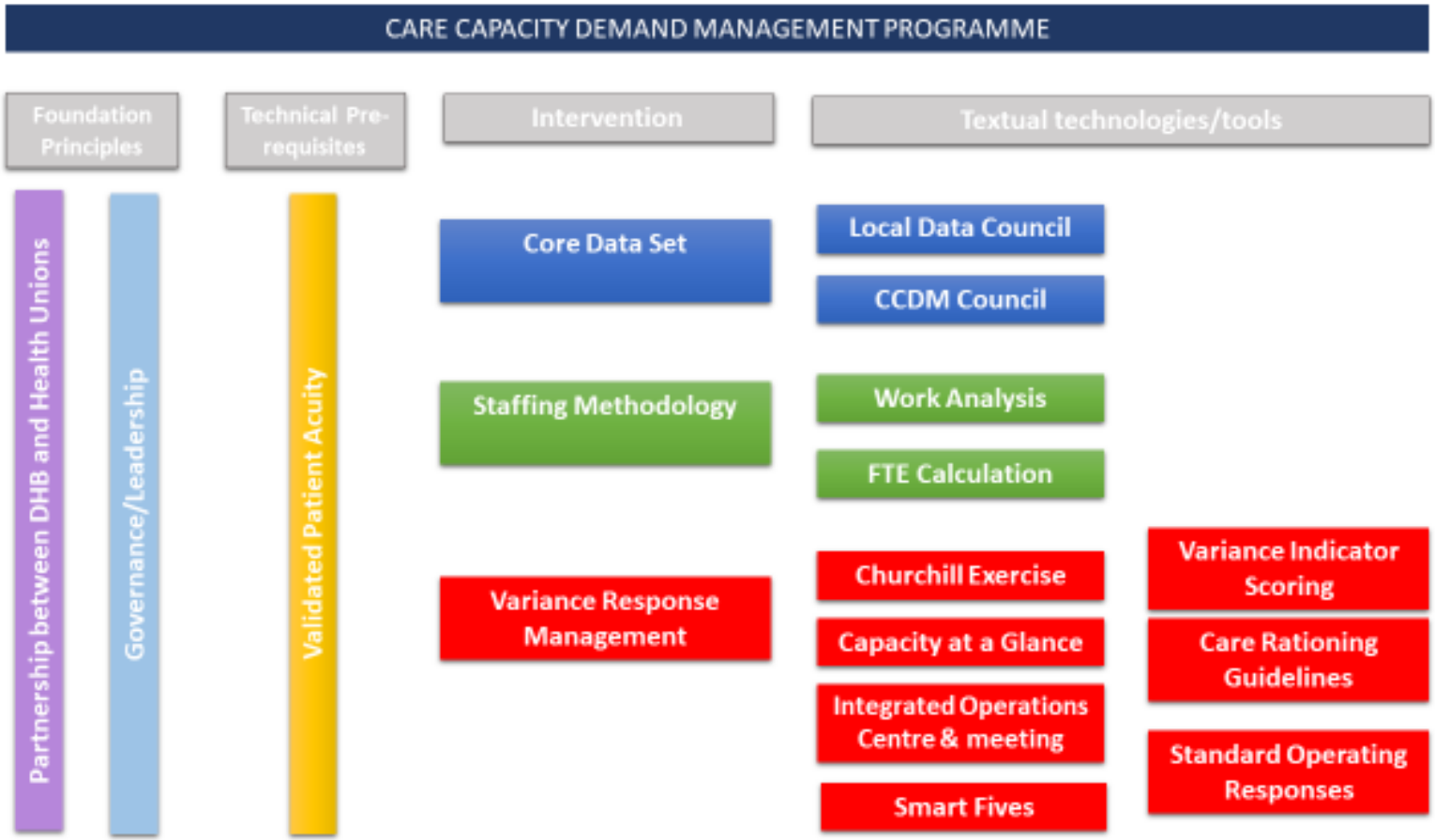
The unit developed a suite of textual tools and technology resources to support CCDM implementation, and each DHB was assigned a CCDM Programme Consultant as a visiting expert to support implementation. Production of CCDM's textual tools gathered pace in 2010 with the second intake of implementing DHBs and continued to do so with each successive intake. Resource development has proven to be an ongoing activity based on findings from each implementation, adaptations required to resources over time, and increasing needs for technical accuracy and objectivity, resulting in an extensive and complex volume of texts.

In 2006, the work of *the unit* was predicted to be completed by 2009. In 2015, the SSGG commissioned an independent analysis of CCDM development and implementation to ascertain barriers to the pace of implementation. The researchers for this analysis undertook a similar process to the original SSCOI, visiting numerous DHBs and interviewing DHB and union staff from a variety of different organisational locations. Among many comprehensive, insightful and useful findings, Hendry, Aileone, & Kyle,

(2015) noted that CCDM was being developed on the ground and the initial pace was due to this 'development phase'. They also noted feedback from DHB/Union staff about the complexity of the texts stating "the PowerPoint presentations, reports and associated documents currently present the programme in an exceptionally complex way, and need to be simplified" (2015, p. 11). In response to the evaluation, *the unit* went into a phase of consolidating and standardising the language and content of existing resources, resulting in consistent, widespread and replicable texts and programme concepts for nationally consistent implementation. This standardised 'product' was copyrighted to the NZ Ministry of Health in 2017.

Figure 13 (next page) illustrates the CCDM programme. From left to right, the conceptual principles pertaining to partnership and bipartite governance, the technical requirement for validated patient acuity data, the three interventions of CCDM, and the concepts of each intervention.

Figure 13 The components of the Care Capacity Demand Management Programme



This (admittedly) simplified visual version of *the programme* belies the complexity of implementation. *The unit* predicts 3-5 years to achieve the level of implementation where all tools are installed, and in use, all information technology developments and maintenance process agreements have been accomplished, hardware has been purchased, TrendCare data quality and accuracy improved, work analysis and FTE calculation processes completed, and screen technologies designed and built. The prediction of a 3-5 year implementation differs somewhat from reality as I illuminated in my description of the disquieting catalyst for this research (chapter 1), and from what I heard from research participants in this study.

In reality, people implementing CCDM told me about programme complexity and the struggle to meet all of the process and data requirements stipulated in *the unit's* texts. A participant who is a senior executive and attends CCDM governance council meetings in several settings associated with the implementation of *the programme* says,

> ***"It is a very big programme with lots of pieces, and I wonder if it is unnecessarily complicated" (Margaret).***

In a review of the online CCDM Programme manual, I determined there to be 103 instructional texts associated with preparing for, implementing, and reporting on the CCDM Programme. This volume of texts necessitates extensive work on the part of DHB and union partners to gain an understanding of *the programme* sufficient to comprehend the complex interconnected nature of the many and various tools of CCDM. The 20 DHB CEO's agreed that all DHBs must implement *the programme* by 2021, however, as I covered in chapter 1 implementing the tools, terminology, hardware and software of the CCDM is not the same as effecting material change to the incidence and risks of short-staffed shifts. Despite close to a decade of implementation in some DHBs, nurses' concerns about patient safety, short-staffing and unmanageable workloads remain.

National nurses strike 2018

During this investigation, frontline nurses elected to take industrial action in association with pay, working conditions and the failure of nurse staffing strategies to secure tangible, consistent, and widespread gains. Interviews with participants from the

frontline to DHB, union and governance level leaders revealed that frontline nurses' hearts and minds are not won over by current strategies, particularly the production of data, and the persistent failure to repair every short-staffed shift. Following the stalemate in the bargaining agreement begun in 2017, and the rejection of three separate bargaining offers, NZ nurses agreed to a national strike in 2018. As a result, the incumbent Minister of Health (The Right Honourable David Clark) brokered a 'Staffing Accord' between DHB employers, the nurses' union (New Zealand Nurses Organisation) and the Ministry of Health. The NZD$38million Staffing Accord was to result in the employment of an additional 500 nursing FTE nationwide. An additional NZD$10million was committed to employment of nursing expertise to assist the implementation of the CCDM Programme as 'the agreed safe staffing tool' (Safe Staffing Accord, July 2018).

The stipulations of the 'Staffing Accord' endorse the CCDM Programme as 'the' safe staffing solution. In keeping with Staffing Accord stipulations, each DHB CCDM council is to produce an employment plan for the additional nursing FTE. This DHB level plan then goes to the national Safe Staffing Healthy Workplace Governance Group for their endorsement. Specifying that funding and staffing plans were to be mediated by CCDM and Safe Staffing Healthy Workplaces governance structures makes sense as these structures already exist, have bipartite membership, and were established with a focus on resolving staffing issues[44]. However, there is a risk that bringing the gains of nurses' industrial action under the jurisdiction of the Nurse Safe Staffing Project negates the fact that it was nurses' dissatisfaction with frontline safe staffing outcomes that contributed to their decision to strike. Indeed, it was nurses' industrial strike action that garnered the commitment to an additional 500 nurses and the funding injection, effectively accomplishing frontline commitments and funding the CCDM programme and Escalation planning have failed to achieve in 10 years of implementation.

[44]. In Dec 2018, all staffing plans were approved by the various groups and the Ministry of Health. Numbers employed are not yet known, but the 20 approved DHB plans would translate to approximately 497.87 extra nurses being employed" (Nursing Review, 2018).

Conclusion

The purpose of this chapter was to provide context to this inquiry, describing the research that provides the backdrop to nurse staffing knowledge and strategies, and tracing how this knowledge has been taken up in NZ's Nurse Safe Staffing Project. I identified the priorities and erosions NPM reform in NZ, the global problem of a nursing shortage, and the worldwide patient safety imperative. The key themes and debates of the nurse staffing literature centre primarily on contested knowledge about the relationship between nursing numbers (skill, experience, education) and patient outcomes. I identified the type of research that has gained the most scientific authority, and the relationship between numerically constituted staffing research and the staffing strategies that have taken up this knowledge. I plotted a chronology of the Nurse Safe Staffing Project, identifying some of the milestones, texts and decisions that have determined its course.

Of note from this chapter is the decision by the DHB/Union partners to overcome their previously entrenched and oppositional positions by basing their staffing decision-making on impartial and objective data. What comes into view is that the nurse staffing research, nurse staffing strategies and Nurse Safe Staffing Project's utilisation of data reinforces the idea that only with data can 'we believe what nurse are saying'. Adopting this data-driven knowledge is principally to enter into the institutional dialogue and relations of hospital management and 'convince' hospital managers of the relationship between nurse staffing and patient outcomes. It is by this mechanism that numerically constituted knowledge about nurses, patients, and staffing becomes privileged and authorised over other forms of knowledge, namely nurses who are on the ground during short-staffed shifts. The next chapter is an ethnographic journey through a short-staffed shift told through the experience of multiple frontline nurses that begins to bring into view how this data-driven privileged knowledge organises frontline nurses experiences on short-staffed shifts.

Chapter 5 – Knowledge in action

Staffing troubles and trouble staffing

Introduction

This chapter begins an ethnographic journey. It follows nurses' work to assess and report a short-staffed shift, and their work in response to staffing decisions. I provide an extended account of a shift constructed from the experiences of a standpoint participant Pamela, which will resonate with many frontline nurses. Not because it describes the specifics of their ward, patients, or colleagues, but because it describes the material conditions of trying to resolve a short-staffed shift, something Smith (2001, 2005) calls 'a world in common'[45]. In this chapter, I begin to uncover and show what nurses know and do to diagnose a short-staffed shift and produce textual accounts of these shifts geared towards activating a staffing response from the organisation. Participants' troubles and frustrations point to tensions between what nurses know is needed, what Nurse Safe Staffing Project texts convey and the staffing decisions made in extra-local settings. I begin to uncover the extensive work nurses do in response to staffing decision-making. In the first phase of analysis, the tensions and puzzles illuminated in this chapter are worked up into a problematic to frame the analytic work of this project.

Table 6 Glossary for chapter 5

Shift Coordinator	A registered nurse who coordinates the allocation of patients to nurses, as well as the discharge and admission of patients to the ward. They take most of the phone call inquiries, liaise with other departments and the Duty Nurse Manager (see next box) Often the shift coordinator will also have a full allocation of patients
Duty Nurse Manager (DNM)	Among other things, a DNM coordinates the hospital (particularly after-hours) which includes assessing staffing shortages and surpluses. They orchestrate moving patients around, organise the opening and closing of beds and units. They move staff around to address shortages and surpluses including sending staff home on leave in cases of the over-supply of nurses

[45] Descriptions of a material world unfolding that can be claimed as 'real' in-so-far that nurses would agree that they know of these things and have experienced these things.

Bed meeting	A 20-30 minute meeting usually in a central office at some distance from the ward. Usually held every morning shift, and sometimes again in the afternoons. Attended by all shift coordinators/CNMs and others
Patient acuity	A measurement used in addition to the number of patients. Acuity describes the care activities each patient needs and allocates an average length of time these care activities will take – usually expressed as Hours Per Patient Day, HPPD
Hours Per Patient Day (HPPD)	HPPD is usually a single number or a range that denotes the amount of care in hours that each patient type category will require (on average) over 24 hours
TrendCare	The most prevalent patient acuity system in use in NZ (in 16 out of 20 DHBs). TrendCare is not a Nurse Safe Staffing Project system, but strategies like CCDM rely heavily on patient acuity data

A short-staffed shift begins

Pamela, a registered nurse, arrives on her ward to start an eight-hour afternoon shift; it is her fifth shift this week. On her way to work, she receives a text on her phone, one generated to all the staff of the ward, asking if anyone is available to come in from their day off to do an extra shift or extra hours. Pamela knows that this text means the shift she is about to start is short-staffed.

The decision that this afternoon shift is indeed 'short-staffed' was made by the shift coordinator of the previous shift. Pamela learns there were two sick calls, and that the shift coordinator looked at who was rostered on (numbers, skill, experience) and talked with the CNM [Charge Nurse Manager] *about staffing. The shift coordinator also talked with the other nurses about current patients, how the morning shift had gone and determined that the workload and patient safety would be compromised if the missing staff were not replaced.*

Pamela looks around the office and realises that she is the most senior nurse on and is therefore likely going to have to coordinate the shift. In some wards, the shift coordinator has a lighter patient load, and sometimes, no patient load at all. However, on Pamela's ward, the 'senior' as the most experienced nurse on, often takes the most complex patients as well as coordinating the shift.

A colleague tells Pamela that the casual pool [a pool of nurses and health care assistants available to help on short-staffed wards] *has had 12 requests for help* [from other wards in the hospital] *and only has two or three nurses available. As the handover from the morning staff progresses, Pamela learns that according to TrendCare* [see glossary] *the shift is 12 hours short of nursing care hours. Having worked on the previous four days, Pamela knows that the patients currently in the ward are 'heavy', meaning they have complex care needs and require a great deal of assistance with pressure area care, mobilising, personal care and so on. There are also three patients with complex drains requiring hourly close monitoring.*

As the shift begins, Pamela interrupts the work of the nurses she is on with and instructs them to update their TrendCare to reflect the number of 'full assists'. Pamela describes this as a TrendCare term for patients who need help with everything, "people who can do absolutely nothing for themselves". She goes on to describe how "full assists have to be justifiable; you have to be able to back up why you have made someone a full assist because we are audited regularly to make sure we are not 'padding' our data"[46]*. Once the nurses have updated their TrendCare, Pamela takes the TrendCare information to the 'bed meeting'. She describes how important it is to be able to provide this 'indisputable data'. She says that in the past the bed meeting used to involve people saying they were 'busy' and that their ward was 'short', but now they have to be able to 'qualify' that with data.*

In the handover meeting, Pamela learns that her ward is one of several wards with staffing shortages and that the majority of the shift coordinators in the meeting have asked for extra nurses. At the end of the bed meeting, Pamela and the others are told by the Duty Nurse Manager (DNM) that there is no staffing help available. The two or three casual pool nurses have been sent to the Emergency Department because it is in 'bed block', or to other wards where the deficit of TrendCare nursing hours is greater than 15 hours [meaning that ward is 15 hours short of nursing care hours available in TrendCare]. *Pamela then returns to the ward and tells her colleagues that despite filling in all the right forms and screens and making all the right calls, there is no*

[46] Padding data means allocating more dependency, or care tasks to patients in the TrendCare system than their system generated HPPD range indicates (more on padding data in chapter 6 & 8).

staffing help available. They will have to get on with the work of caring for patients as best they can.

As well as being the senior nurse on the shift, and taking the 'heaviest' patients, Pamela was coordinating the shift and had a pod with 13 patients in it. Assisting her in this pod was a newly graduated nurse and a third-year student nurse. Pamela described how unsafe and frustrated she felt in these situations. Her concern was for the 'quality of the care' they were able to provide for patients and for the learning experience the new graduate and student were getting, she said that expectations of new graduates, after three months on the ward, were extremely high.

At 7.45pm Pamela receives a phone call from the DNM asking her to take a patient from the Emergency Department. Pamela says that she has a '12 hour negative variance' [she has 12 hours less nursing care available than patients require] *she cannot possibly take a 'boarder'*[47] *into the only remaining empty bed on the ward. An argument ensues between Pamela and the DNM in which Pamela explains that her antibiotics are already an hour late, she is behind on 'close' observation of the neuro patients, she had discovered that the drugs she needs for two of her patients are not available and has been to five wards looking for another source. She has a patient needing a cannula replaced, which she will have to do as this is a nursing job now. In the end, the 'boarder' patient arrives on the ward, because, as Pamela recounts, "we just can't say no, we don't have that ability".*

Pamela describes how often she enters a patient's room concerned that the patient's blood pressure might have dropped, or that they are not breathing, and she is an hour late with the observations and the Coroner is going to say "why were you an hour late"? "And you are thinking 'we are short-staffed' but, also, she states, "I think how it would be if I made a mistake, it's a constant stress, that would be [the end of] *my job, my career, my mortgage payments". While reflecting on the shift she was describing Pamela remembered that in the middle of this shift "I get handed a bit of paper that*

[47] A boarder, also called an outlier, is a patient from another speciality but there are no beds available on the ward where they would ordinarily be admitted so they must be boarded temporarily in another ward.

says that we are putting out a new piece of paperwork that you need to do, and I just think they have no idea – this stupid paperwork – they have no idea!"

The remainder of this chapter delves into the detail of what is happening in Pamela's account using the experiences of frontline nurses Pamela, Grace, Wendy, Samantha, Jo, Andrea, and Mary. Nurses' knowledge and actions are traced through their assessment of short-staffing, into their reporting practices, to calling for help and attending staffing decision-making meetings. Staffing responses as participants described them are identified before moving to the work nurses do in response to staffing decisions.

How nurses know a shift is short-staffed

Nurses' assessment of whether a shift is short-staffed is active and occurs moment-to-moment throughout the shift. From participants' accounts of their experiences, nurses rely on three sources of knowledge to make ongoing assessments of staffing – the staffing required for current nursing work, for anticipated nursing work and unexpected nursing work.

Staffing for current nursing work

In Pamela's story, the shift coordinator on the previous shift had received two sick calls. Nurses that were meant to be on the shift were unable to come in, and part of her work as a coordinator is to determine whether the missing nurses must be replaced. Identifying whether the next shift is short-staffed involves initiating conversations with the nurses on the current shift, either in the ward office or by walking around the unit to talk with each nurse individually, asking about patients: are they stable, recovering, experiencing complications or unanticipated deterioration. Has the morning shift gone as planned? Is there any nursing care, or other nursing work, nurses have not been able to complete that will have to be done on the afternoon shift?

These conversations capture the current state of play, the most up-to-date assessment of each patient, and the nursing care required. Grace, a frontline nurse who regularly works in the shift coordinator role, describes the sort of things she would bring up in this conversation,

> *"My biggest concern would be patient safety. I would be discussing patient safety concerns if the acuity[48] was beyond what we were safely staffed for and then there would be the risk that I'd be taking on with the unsafe mix" (Grace).*

For Grace, patient safety concerns are the primary purpose of these conversations – "based on the knowledge we have of them in-this-moment, are patients going to be safe on a shift with fewer nurses than anticipated?" Nurses' real-time oral narrative is alive and continually evolving as the shift, and individual patient care unfolds. The shift coordinator can access this at any point through conversations with frontline nurses.

Having talked with the nurses, and gathered their oral in-the-moment knowledge of current patient needs, the shift coordinator reads several texts. These include the roster, the handover sheet, the notes of some of the more unstable patients and the patient acuity system[49] (in this case TrendCare). The shift coordinator reads the roster to assess the number, skill and experience of the nurses coming onto the short-staffed shift. They might look at the handover sheet and patient notes to familiarise themselves with patients requiring procedures off the ward, requiring an accompanying nurse, as well as patient plans that involve changes to current management.

The majority of shift coordinators also read the TrendCare screen (a feature of most DHBs) as another source of information about the requirements for the shift. The data frontline nurses have entered into TrendCare screens allocate each patient to a patient type category (such as a *medical patient*), and each patient type category is accompanied by an allocation of time. Each time allocation represents the average amount of care a patient will require over 24 hours. The averaged allocation of time for care for each patient is expressed as Hours Per Patient Day (HPPD). For example, Mr Jones, a medical patient, has an HPPD of 4.6 hours. Over the 24 hour day, Mr Jones may receive 2.2 hours of nursing care on the morning shift, 1.3 hours of care on the afternoon

[48] Acuity (Patient acuity) is an example of what Bakhtin (1981,1986) terms an utterance, and Smith (1999, 2005) calls a shell term; a term that is in common use that people are taught to use and that they are taught makes sense in a certain setting and scenario but that does not adequately detail what is actual. What is the actual knowledge and the actual work of patient acuity? Both are obfuscated by the single 'all-encompassing' displacing term.

[49] There are two patient acuity systems in use in NZ hospitals, Onestaff and TrendCare. TrendCare is the prevalent system (in 16 of the 20 District Health Boards), and all frontline participants use or know of TrendCare so I will use this term throughout the chapter.

shift, and 1.2 hours of care overnight. Each nurse may have several patients in her allocation with different patient categories and corresponding HPPD's[50].

Nurses are also represented in the TrendCare system. Each nurse is loaded into the TrendCare system as a unit of eight hours (HPPD) because they (predominantly) work eight-hour shifts[51]. If there are six nurses on the shift, there are a total of 48 nursing hours available to provide care to patients. The shift coordinator can see the nursing hours (known in TrendCare as *hours available*) equal 48 hours, and that the total hours of care all the patients on the short-staffed afternoon shift are going to need (known as *hours required)* is 56 hours. This equation is unbalanced; the shift coordinator can see that the patients (HPPD *hours required)* need eight more hours of care than there are nurses (*hours available)* to provide that care. The shift coordinator would describe this as being 8 hours short or having a negative variance (variation) of 8 hours.

In addition to the oral and textual information the shift coordinator has gathered about current nursing work, she has more to collect to assess the nursing work that is anticipated to arrive as the short-staffed shift unfolds.

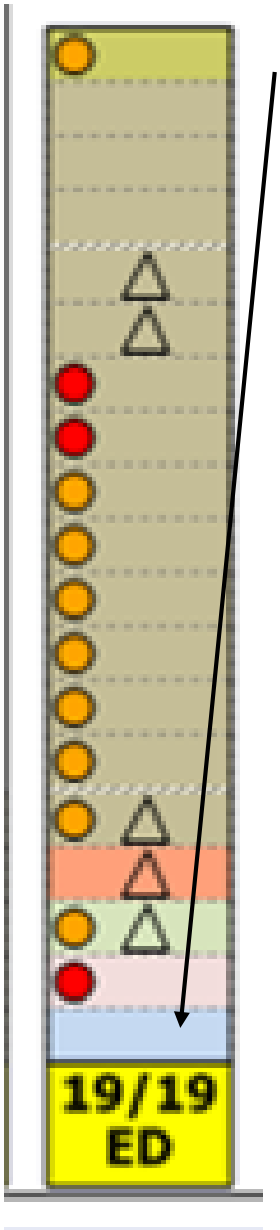
Staffing for anticipated nursing work

Several texts provide the shift coordinator with information about patients who are scheduled to arrive. Surgical theatre lists on whiteboards and notice boards identify the patients due to arrive on the ward from operating theatres, for whom a ward bed must be kept available. From their ward computer, the shift coordinator can also read the Emergency Department (ED) (electronic) whiteboard looking for patients currently in the ED who are destined for the ward.

[50] For example, on a morning shift, she may have Mr Jones (2.2 HPPD), Mrs Jackson, (1.8 HPPD), Mr Smith (2.1 HPPD), Mrs Johnson (1.0 HPPD), Mr Brown (50minutes HPPD).
[51] Some wards work 10 or 12 hour shifts but these are much less common than 8 hours shifts.

In DHBs implementing the Care Capacity Demand Management (CCDM) Programme, the shift coordinator can also look at the capacity-at-a-glance screen[52] to see possible future patients waiting in the ED. I explain the capacity-at-a-glance screen in more detail in the next chapter. Here I use discrete sections of the screen to illustrate the information shift coordinators are seeking in their assessment of anticipated work. In Figure 14 (below) a section of the screen displays the ED, including patients who have been diagnosed (represented by coloured bands) and are waiting to be moved to a ward.

Figure 14 section of the capacity-at-a-glance screen showing Emergency Department ©NZ MoH 2017



The shift coordinator can see there is a patient in the ED that has been colour coded as a pale blue (on this screen, this is the colour allocated to a medical patient). This colour coding means that the patient will arrive on her ward or one of the other medical wards on her floor. Mary talks about walking around to (or phoning) the other medical wards to have conversations with shift coordinators about anticipated work,

"I'm looking at what staff I can get, [from another ward], *I talk to my colleagues in the other wards on my floor and look at what patients we can get moved and so on" (Mary).*

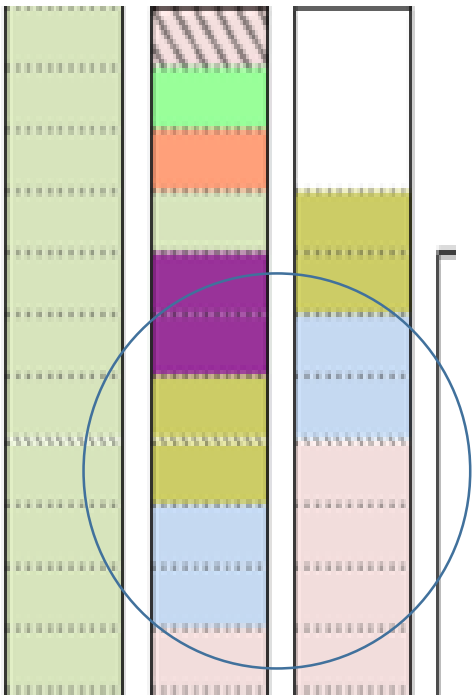
Looking at their whiteboards (patient lists) and talking with the other shift coordinators is undertaken to determine who has the most staff, and the most beds, and can accommodate this anticipated patient. Shift coordinators reported that if all the wards were short-staffed, they often negotiated to take turns at accepting new patients to spread the load across all the medical wards.

When assessing for anticipated work, the shift coordinator also reads the capacity-at-a-glance screen for

[52] Accessed from the ward computer or displayed on a monitor screen on the wall of the ward.

patients described as outliers[53]. Patients referred to by this term have been admitted to a ward other than what is known as their home ward (the correct ward for their condition) because of a lack of beds. Shift coordinators know that outliers need to be moved to their home ward as soon as possible, a process often called 'outlier repatriation'. In figure 15 (below) a section of the capacity-at-a-glance screen is circled that illustrates the location of four medical patients who are outliers in the surgical wards.

Figure 15 Section of the capacity-at-a-glance screen showing medical patients identified as outliers on two different surgical wards ©NZ MoH 2017



Provided by the Safe Staffing Healthy Workplaces Unit and used with permission.

Outliers are problematic for shift coordinators predictions of anticipated nursing work. The shift coordinators of these surgical wards must factor the medical patient outliers into the staffing for anticipated work on the surgical ward. Pamela identifies the challenges of nursing outlier patients,

> "[An outlier] *often takes away time from your own patient cohort because instead of focusing on your own sick patients, you're tied up with this person.* [A person], *who is no less deserving of your care, but it can be frustrating when you think*

[53] Also referred to as boarder patients.

> *'you are not even a patient of my own speciality, and you are absorbing so much of my time" (Pamela).*

Here, Pamela can be heard describing the patient as one that 'does not belong' in her cohort. Pamela is torn between several conflicting problems complicated by outlying patients on short-staffed shifts. She knows she does not have enough staff on the short-staffed shift to provide adequate and safe care for this medical patient outlier. She knows that by accepting him into the last empty bed on the surgical ward she can no longer accept any more surgical patients. Pamela also knows the patient has likely been in the emergency department for some time, he is elderly, with multiple comorbidities, and that the professional nursing work for and with this man is going to be complicated and time-consuming. However, she also knows *the patient has to go somewhere*, and in her experience, she cannot (and will not) say no to accepting him.

During frontline interviews, I heard many stories from nurses of their professional concerns about outliers they characterised as 'pushed into wards where they shouldn't have been'. I heard about a woman who was sexually and physically assaulted being admitted into a four-bedded room with three men; about elderly patients confused and calling out being boarded in children's wards, and about an elderly patient with multiple cardiac and renal comorbidities admitted to a neurosurgical ward for management of his pneumonia. Nurses know that patients' care needs are individual and specific and that these needs might not be met during inappropriate outlier placements. They also know that patient outlier placement decisions are forced by the omnipresent pressure for beds.

In Pamela's experience, outliers are a symptom of a shortage of beds and nurses. She says,

> *"Because if there are no beds anywhere in the hospital, you know the patient has to go somewhere. It could be someone in his 70s, and he's got renal failure and heart failure and really bad pneumonia, and so they should go to the medical ward, but they'll say your care for pneumonia* [on the surgical ward] *is going to be the same on any ward so they should come to you" (Pamela).*

The pressure for beds means that the patient's most pressing concern becomes the basis for placing him in a ward where nurses know how to 'look after pneumonia' but not necessarily any of his other conditions.

Assessing the number and location of outlier patients is part of the work of determining whether the missing nurses on a short-staffed shift need to be replaced. As pressure for beds builds over the course of the shift, across the hospital, outliers can be admitted or repatriated at very short notice so they must be factored into staffing predictions for anticipated nursing work on the wards where they are outliers, and also on the wards where they might be repatriated at a moment's notice. All frontline nurses and shift coordinators said that along with assessments of anticipated work (outliers, surgical list bookings, ED) shifts also had to factor in staffing for unexpected nursing work.

Staffing for unexpected nursing work

From nurses' descriptions, staffing for unexpected work included unexpected patients, unexpected deterioration of patients, and unexpected staffing shortage, such as patients needing one-to-one care (meaning the nurse's current patients had to be reallocated to other nurses on the shift). Wendy, a CNM in maternity services, describes staffing for unexpected patients and nursing work,

> *"I always have to plan for the unexpected. I have to have my skill mix right, and I have to have the right number of staff, and I like to know what's happening* [elsewhere]. *Our patients generally come from the Birthing Unit, so I like to know what's happening round there and if there's any potential admissions. You always get the ones that you didn't know were coming, born in the carpark or whatever, they just rock up and push their baby out and so you always have to be prepared for that, and it's all around safe staffing" (Wendy).*

Having the right skill mix, as Wendy described it, involved having a balance of experienced and senior staff with junior staff.

> *"If they are all juniors and premature twins are admitted to the ward, you can't expect them to manage that, and it's not safe" (Wendy).*

Wendy knows there are occasions when short-staffed (or inadequately skilled) shifts cannot be repaired. She sacrifices her own time to protect patient safety and to support her junior staff in what her experience and knowledge determine are high-risk situations.

All frontline (local) participants said that 'the unexpected can be expected to occur on pretty much every shift'. Staffing for unexpected nursing work is fraught because it is unpredictable and hard to quantify, in terms of the actual number of nurses required. On the day of care, the rostered number of nurses and the resources associated with them are already committed and fixed. Any adjustments, such as mobilising more nurses, is difficult because there may not be any to supply and because each change must be accounted for in terms of extra costs (see McKinnon, 2012, for an example of these types of challenges in primary care settings).

Once the shift coordinator and the nurses on the ward have assessed the shift as short-staffed, using all of the sources of information described above, they make use of several methods to communicate their assessment to managers located away from the unfolding shift.

Communicating the short-staffed shift

Here I detail four methods of communicating the short-staffed shifts that emerged from nurses' descriptions: updating screens, calling the duty nurse manager for help, completing REF reports, and attending the bed meeting.

Updating screens

Shift coordinators in DHBs implementing CCDM, update reporting screens as part of communicating the short-staffed shift. One of these screens has been introduced earlier in this chapter – TrendCare. As part of assessing the 'hours required' for care, the shift coordinator is orientated to ensuring the 'hours required' part of the TrendCare equation is up-to-date. Mary says,

> *"So, if I come in and find that we have less staff than is indicated* [by the hours required in the TrendCare equation] *what we need* [to do] *first thing is, you know, ensure we have updated the documentation" (Mary).*

Nurses described their actual bodily work with patients on short-staffed shifts being interrupted to update their TrendCare screens. Mary instructs them to do this because she knows that she must have knowledge of staffing needs in the form of 'hours' and 'full assists' to present at the bed meeting (described shortly) because this is the form in which staffing knowledge is expected.

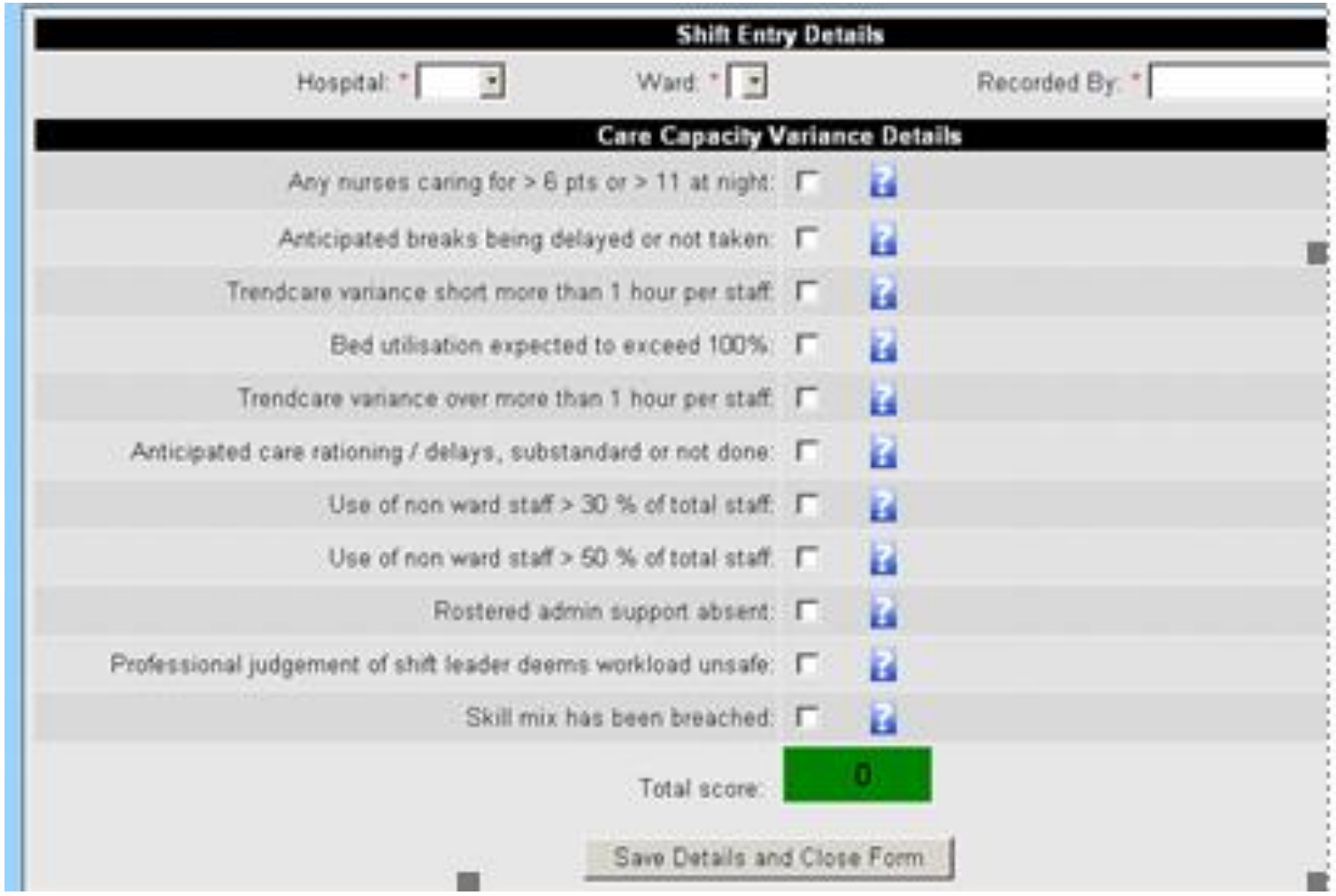
A second screen is also completed by the shift coordinator which generates a colour as a representation of the short-staffed shift, known as a traffic light colour. Nurses and shift coordinators described this screen as the VRM[54], Vroom or traffic light screen[55]. I use the term *traffic light screen* for simplicity, and because this was how most frontline participants described the screen. This system (explained shortly) uses traditional traffic light colours green, orange and red. In addition, the colour mauve is included to indicate when a ward has more nurses than needed for patient care and the other work nurses must do on a shift.

The traffic light screen is an electronic tick list completed by the shift coordinator (ideally after consultation with frontline nurses on the shift). Figure 16 (next page) provides an example of the types of items that appear these tick list screens.

[54] An abbreviation of Variance Response Management which is one of three interventions of the CCDM Programme.

[55] In online CCDM Programme resources this technological tool is described as Variance Indicator Scoring but few of the nurses that use this tool refer to it by this name.

Figure 16 Example traffic light screen ©NZ MoH 2017



Provided by the Safe Staffing Healthy Workplaces Unit and used with permission.

Mary describes her understanding of the items on the list on the screen using the language she has acquired while being taught about this tool,

> *"So there's this tool that we use, and it has indicators on it like, each nurse is less than one hour short on Trend Care" (Mary).*

In order to tick this box, Mary knows that each nurse must have at least one hour of patient care (hours required HPPD) she cannot deliver during her eight-hour shift (hours available HPPD). Mary understands that if there are eight nurses on the shift, each nurse would need to have a deficit of one hour (on average) before this item could be ticked on the screen. Therefore, on this shift, a deficit of a full nursing FTE (8 hours) is required before this alert can be activated. Other traffic light screen items described by Mary include,

> *"we are more than one hundred per cent full" (Mary)*

Mary understands that this item reflects there being more patients in the ward than there are beds. Patients will be sitting in chairs in the lounge, or lying on a gurney in the treatment room waiting for a bed. Some nurses identified that patients in chairs and the treatment room are often not loaded onto TrendCare, nor do they have a bed or nurse assigned to them, but some of them can be 'quite sick and needing a lot of care'.

The colour generated by the traffic light screen depends on how many of the items in the list receive an electronic tick. Algorithms in the background of the traffic light screen automatically change the colour as the number of electronic ticks increases. Mary explains what she understands about 'being in' the different colours,

> *"So we know if we tick three indicators, we go into yellow and if we use five, we go into orange. Purple*[56] [is] *for where you've got capacity*[57]*, green for you're working hard, but you're okay, yellow for you're pretty pushed, and really things are quite dire, orange for don't even talk to us, red for – you know – we've never been in red, orange is bad enough" (Mary).*

[56] The exception to the traditional traffic light colours of green, orange and red.
[57] What appears to be surplus hours in TrendCare that means the ward can send a nurse to help on another ward to help them with short-staffing.

Once Mary ticks the relevant items, she activates a button that updates the colour status. Mary accesses this screen on a computer on the ward and usually updates the traffic light screen at the same time as she asks nurses to update their TrendCare. Mary says this updating procedure takes one-two minutes and can be performed as many times as she, or the nurses on the shift, determine the colour needs to be updated. Such occasions might include more patients arriving on the ward, patient deterioration, or a nurse having to leave the ward unexpectedly to accompany a patient to an urgent procedure.

Both the traffic light colour and the TrendCare variance (difference in hours required versus hours available) are generated and activated on the ward by frontline nurses or the shift coordinator. These colour and variance scores are then displayed on or accessed alongside the capacity-at-a-glance screen (introduced briefly here and described in detail in the next chapter). There is a variety of information on the capacity-at-a-glance screen, but for now, I maintain focus solely on the display of traffic light colours. Figure 17 (below) illustrates how the traffic light colours from each ward may be displayed in a single view on the capacity-at-a-glance screen.

Figure 17 Example of display of traffic light colours on capacity-at-a-glance screen ©NZ MoH 2017

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On the day this screen example displays (Figure 17), the traffic light colour boxes are predominantly green, with some in yellow[58]. The capacity-at-a-glance screens are displayed on large scale televisions on many wards, in the ED waiting room, and some public areas of the hospital, meaning all staff and patients can see the wards have been attributed a colour. Mary, who works on a surgical ward, describes her understanding of this display,

[58] White squares mean the scoring has not been done. The boxes often default to white after a certain period of time to prompt the shift coordinator to update the traffic light colour.

> *"So, if we're in yellow, then often there's multiple areas in yellow. But, ED[59] and APU[60] might be in yellow without us being in yellow, because they're medical" (Mary).*

Although Mary does not know the particular details of why another unit is in yellow, she assumes, because the traffic light colour categories are standardised, that it means similar pressures to when her ward is in yellow. Using the capacity-at-a-glance screen, Mary can see that ED and the APU are in yellow, and makes an assumption about the types of things that might be happening in those units.

Mary, like all shift coordinators, interviewed working in DHBs where CCDM implementation has been underway for some time, described how the traffic light colours had become a shared language,

> *"So it's a nursing initiative, and certainly it's a language which has spread. Social work will say – oh we're in orange today – and we all kind of know what that feels like, what that means" (Mary).*

Mary's adoption of the language of the traffic light colour leads her to the assumption that orange[61] for nurses is experienced in similar ways by social workers, despite the roles and activities of these professional groups being distinctly different. When talking about these colours, and TrendCare HPPD variances, shift coordinators and managers use the term 'variance'; a term that has come into common use by shift coordinators and others alongside the terminology of the tools described so far. The term 'variance' can be heard in the talk of shift coordinators calling for help with short-staffing.

Calling for help

Part of communicating the short-staffed shift involves calling the DNM. Shift coordinators told me that calling the DNM is a long-standing practice that nurses learn by observing their colleagues in the shift coordinator role,

[59] Emergency Department.
[60] Acute Planning Unit.
[61] As a measure of pressure and inadequate resources.

> *"I've ticked my boxes* [in TrendCare and in the Traffic light colour scoring screen] *and actioned that we're feeling very unsafe in our shift in that moment and we do need assistance…..my understanding is that the duty nurse manager is then responsible for responding" (Grace).*

Grace, like all shift coordinators in DHBs implementing CCDM, presents the short-staffed shift to the DNM using the language and technological tools provided to the frontline by the Nurse Safe Staffing Project- HPPD variance and the traffic light colour.

By comparison, a shift coordinator from a DHB not currently implementing CCDM said she talks to the DNM about being busy, having heavy patients, and her professional concerns about risks and patient safety. The language Wendy used was local, contextual and based on her professional knowledge and judgements. The contrast between conversations with the DNMs in implementing and non-implementing DHBs was stark. In DHBs implementing CCDM, nurses' professional contextual and situated language had been replaced with objectified data represented as the variance in hours (TrendCare) and colours (traffic light). Regardless of the language in use, the expectations of the DNMs response to a call for help are consistent.

Duty nurse managers were expected to respond in two ways. Grace's description below captures these expectations,

> *"Firstly, in the time of staffing crisis that was acute and had an end time in sight*[62]*, I saw the DNM as an RN, who was able to lend temporary assistance to the unit. To act as a very quick Band-Aid until the event was over" (Grace).*

Grace, and all other frontline and shift coordinator participants, anticipated the DNM could (and should) roll their sleeves up and 'get stuck into the work' in order to lend a practical hand to provide immediate relief and mitigate risks.

The second expectation stemmed from nurses' knowledge about the DNM's role and the information they have access to,

[62] Such as staff needing to leave the unit to escort a patient to x-ray, or involved in an acute event compromising the skill mix or safety elsewhere.

> *"Secondly, I saw them as the one person who held all the cards of the hospital in that moment and was able to use this big-picture view to provide temporary resources or relieve burdens in other ways" (Grace).*

Nurses saw the DNM as a problem solver. They anticipated that the DNM, as an experienced nurse, would understand their concerns about short-staffing and do something practical to repair the shift.

Nurses and shift coordinators experiences of calling the DNM for help varied. All participants were able to describe occasions when practical help arrived (in the form of the DNM themselves, or from other nurses moved to help on the ward from elsewhere). Equally, all participants could describe an occasion when the response to a call challenged the nurse's assessment of the shift and the need for help. Pamela offers,

> *"the duty nurse manager asked me why I was calling for help when the TrendCare says I am fine, but it didn't feel fine" (Pamela).*

In this instance, the DNM, located away from the ward and the shift, is questioning Pamela's knowledge from inside the short-staffed shift using the data in the TrendCare screen, arguing that 'the numbers look ok'. However, Pamela's actual experience, as the short-staffed shift is unfolding, is different to the 'picture' of the shift the screens portray to the DNM (see Tubbs-Cooley, Mara, Carle, & Gurses, 2019 for nursing examples of different workload experiences inside assigned staffing categories).

Nurses and shift coordinators said that they knew these conflicting views, and occasional negative responses, were because everyone is under pressure to meet hospital targets (for volumes of surgical procedures and Emergency Department stays) and because there are not enough beds or nurses in the hospital. Mary recalls an experience,

> *"I can remember a particular shift when I had a really sick patient, and I was really worried about this patient, but I was also shift coordinator and had four other patients. The duty manager comes and says could I take this patient and I'm like I can't cope, this patient's bleeding, we're waiting for the doctor. And she's like, well I've got nowhere else to put them* [so] *you're getting this" (Mary).*

Frontline nurses and shift coordinators interviewed recounted these types of arguments with the DNM, with both parties maintaining they have the patient's interests at the centre of their concerns. However, what comes into view in many cases is that frontline nurses/shift coordinators are using situated local knowledge, and DNMs are using extra-local textual versions in the form of screens displaying numbers and colours to assess staffing and patient needs on the shift.

Nurses in all DHBs have another textual process available to them. This process can be activated at any time on the shift (during the initial assessment, after talking with the DNM, after the bed meeting, or even at the end of the shift). However, nurses know that this report is not designed to activate an immediate response to the staffing shortage.

The Reportable Event Form (REFs)

All NZ DHBs employ patient risk and harm reporting systems[63], In earlier chapters I identified policy at the level of the OCED, WHO, and ICN that encodes central government and local DHB level strategies to measure the organisation's performance against patient safety ideology, and produce data associated with adverse and sentinel events. Nurses have been taught, as part of the Escalation planning staffing strategy, to use this system for patient-related risk and harm, but also to report unresolved staffing issues. According to participants, they were instructed to complete REFs of short-staffing concerns and outcomes because, without these, there would be no official record, no data or evidence about short-staffing and its effects.

Participants experience with the REF process was dominated by talk of its complexity and time-consuming nature. A principle objection to completing REFs was that they did not contribute to resolving short-staffing as it was happening, as Grace recounts,

> *"We do have a risk recording system, but that is not done up in real time….so there's nothing to be gained in the moment by completing that. However, after*

[63] Variously named Riskman, Riskpro, Datix and Edis.

the event, I guess it would be appropriate to report the event as a risky event, but [not] *in terms of in the moment when you need help" (Grace).*

Participants said that completing a REF involves accessing the software on the hospital intranet via a computer and completing several steps over several pages of electronic text. The content and framework of the REF reports determine how the description of the event is to be structured. In other words, the staffing or patient event can only be known within the categories of the REF form.

Some frontline nurses found the REF an effective tool to bring attention to short-staffing and patient safety risks,

"I fill in an awful lot of incident forms about staffing. We used to have a paper copy; now it's on a Datix, the computerised system that you can log your concerns about staffing or skill-mix or missed breaks or medication errors, multiple things you can draw attention to. I do that a lot" (Andrea).

The REF system was described by one participant as the only way she was able to obtain managerial attention on short-staffing, over-crowding and patient risk in her ward,

"The unit has been really unsafe, and we've not been given the support from managers to have enough staff, staffing levels, and we've been putting incident forms in one after the other and risk forms stating that we're under-manned and over-crowded and they're now starting to take notice" (Jo).

Jo described how she had been using the REF system with little result but was then shown how to categorise being under-manned and over-crowded as a risk, which seemed to activate different organisational attention. She described how she deliberately sent the form to the wrong place, circumventing the usual chain of command. As Jo describes it, it was only after she did this, and encouraged other staff to use the same approach, that things started to happen, and the ward received attention from executive and professional managers of the hospital.

Both local and extra-local participants described the REF process as tedious and futile, as (often) nothing changed as a result of completing the process. Andrea recounts,

> *"My colleagues* [tell me they] *don't fill it in because they feel like it's a bit tedious. I think it's tedious too, if you're not familiar with doing it, it can feel quite time consuming but once you do a couple you kind of get on a roll a bit. I think a lot of people didn't do it in the past because historically they've felt there's been no change, so what's the point. And therefore you just end up in the same situation – nothing alters because not enough people are commenting. If it's just one or two of us saying things, it just sounds like we're – not troublemakers – but people who want to whinge about things" (Andrea).*

A small percentage of participants try to promote the REF process to colleagues. These participants talked of there being strength in numbers, saying if only a few nurses do the REFs all the time they end up with a negative reputation in the organisation.

Most participants did not know where the REF form went after they had completed it, nor who read it, or whether anything happened as a result of submitting it. Others talked about being able to 'look inside' the electronic textual sequence to see what was happening to the case. Jo describes seeing how an extra-local manager received the REF and what they did with it

> *"Cos we've noticed they've downgraded some of them….we can go and look at some of our risks and when it's been looked at they've downgraded them and then they're filed away like 'no further action' so nothing was ever coming of it" (Jo).*

Participants described the frustration of seeing the 'event' in the REF altered or downgraded by an extra-local manager who wasn't present when it was occurring. These challenges, coupled with the fact that this process does not activate an immediate staffing response, has significant implications for how nurses engage with REFs as a nurse staffing strategy. (The REF process is taken up again in chapters 6 and 8 to provide more detail of the process and to trace this electronic textual sequence into different institutional locations and to extra-local readers.) Alongside these many textual accountabilities and reporting processes, shift coordinators are also attempting to activate local strategies to repair the short-staffed shift.

Local strategies to try to repair the shift

Shift coordinators combine knowledge of the dynamic (changing moment to moment) needs of current patients, with knowledge gathered from conversations, lists, and screens. Their experience provides another source of knowledge about the number of patients that are likely to arrive (that are not yet known about), and the problems and complications that arise as part of the normal dynamic of working with people (staff and patients). This entire assessment is balanced against the numbers, experience and skills of the oncoming nurses. The shift coordinator knows what the nursing work to be done is and that the oncoming nurses will not be able to accomplish this work because there are too few of them, or because their experience, skills, or credentials do not match patients' needs. Shift coordinators' described a raft of strategies they activate to try to fill the gaps they have identified.

Jo, a frontline nurse, describes the strategy she observes happening on her ward,

> *"The clinical team coordinator* [similar to a shift coordinator] *would have to ring round and try and get staff, but most of the staff don't want to do overtime because they've had enough of it, we haven't got anyone we can call on, especially* [on the] *mornings" (Jo).*

Calling the ward's nurses to come in on their days off was one of the first strategies for trying to resolve the staffing shortage described by all participants. Recall that Pamela (whose account begins this chapter) received a group text message on her phone on her way to work for her afternoon shift. The majority of the frontline nurses I spoke with received these texts, daily, and sometimes three times a day, asking them to work extra hours or shifts on their own wards, and in other wards in the hospital. Such texts are a constant reinforcement of the shortage of frontline nurses and are a source of guilt and anxiety for nurses who know their colleagues are struggling on a short-staffed shift.

Sometimes the strategy of calling nurses in from their days off does result in the ability to increase the staff on a shift quickly and effectively,

> *"Sometimes I'll go and call someone in from home. If I know that I've got people that are willing to work extra hours which sometimes happens in the first half of*

> *the year, when the second years[64], get a contract, but they don't get as much FTE as they want. For example, this year we've kept two* [2nd-year nurses] *on at .4* [0.4 FTE) *rather than give one a* [full-time] *job because I thought more positions would come available and I wanted to keep them both. So they were desperate for shifts initially, so that was great. I'd just call them, and they'd come in, in an hour's time" (Pamela).*

Pamela's practice of employing nurses part-time reflected both constraints on her staffing budget, but also a commonly echoed practice, among participants, of employing nurses at 0.9 FTE or less, as a deliberate strategy to help with staffing. In this way, they said, we always have people who can take up extra shifts, and we can give them these hours without having to pay overtime.

Participants spoke of other local strategies to increase staffing, including cancelling nurses study days in order to reprioritise nurses to frontline nursing work. Nurses in specific roles, such as the nurse educator[65] for the ward were often asked to take a patient load, or supervise new graduate nurses or students with their patient loads and nursing work to free up experienced frontline nurses to focus directly on their allocated patients.

The work of gathering local nursing intelligence, updating screens, calling the DNM for help, completing REF forms and activating local strategies often happens before the CNM for the ward arrives. In many DHBs in NZ, the CNM arrives on the ward between 0800 and 0830am to begin a day characterised by meetings and numerous administrative and managerial tasks. Invariably, but not always, a CNM will take over the work of trying to resolve the staffing shortage when they arrive, allowing the shift coordinator to return to the work of coordinating the clinical shift[66], as well as direct patient care. Therefore, on morning shifts, it is often the CNM who negotiates with the

[64] Nurses who have completed their new graduate year and are in their second year of registered nursing practice.
[65] A nursing role, based on the ward but not usually taking a patient load, that supports frontline nurses with clinical learning, as well as constructing and leading structured education sessions, and ensuring nurses attend organisational training and maintain their clinical credentialing.
[66] Ward rounds, planning and preparing for admissions, discharges, transfers, operating theatre cases, negotiating breaks with the staff and so on.

DNM during the morning shift and attends the bed meeting.[67] The bed meeting is an organisational meeting where each ward's short-staffing and patient safety concerns are considered in the context of all the wards, patients, and shifts, and with what nurses described as the DNMs 'big picture' knowledge of the whole hospital.

The bed meeting

The bed meeting is generally 15-30 minutes in duration and occurs anywhere between 0900, and 1045 am (depending on the DHB), often in a designated office away from the clinical wards. Meeting attendees generally include CNMs or shift coordinators, the DNM, and hospital coordination unit manager[68] (or similar). In some DHBs, CNMs/shift coordinators arrive at the meeting with the paper summaries of the patients on the ward, and a copy of the roster, and its short-staffing gaps, and may collectively use a whiteboard to gain a picture of the location of the shortages and pressures of the shift. These conversations are often focused on numbers of patients and numbers of nurses and may feature the particularities of patients,

> *'We had a 200-kilo incontinent man who needed a hoist and four staff to move him every two hours for pressure area care and hygiene needs. It had a huge effect on our workload and staffing" (Mary).*

Although such patient specifics may be related in the bed meetings of DHBs implementing CCDM, most are orientated to projections of the TrendCare screens, the discrepancy (or variance) in the required and provided hours equation, as well as the colour the shift has been graded in the traffic light colour screen.

Nurses in the bed meeting look at the screens as a representation of their wards and talk with each other about the movement of patients and of staff to try to mitigate the gaps that they can see on the screens. Mary describes going to the bed meeting with a 'negative 15 hours variance and orange traffic light' to negotiate for staffing help. Mary

[67] Many DHBs also hold a bed meeting on the afternoon shift. On night shifts, the duty nurse manager invariably walks around each of the wards individually to have conversations with shift coordinators that are a feature of the bed meeting.

[68] Many DHBs have a nurse in this role responsible for coordinating the work of the duty nurse managers, the bureau or pool staff (nurses who are available to work across several different wards in the hospital), the TrendCare coordinator and Care Capacity Demand Management Coordinator.

knows she is going to have to compete with all the other CNMs/shift coordinators with negative variances and 'hot' traffic light colours. Samantha, a frontline nurse/shift coordinator, describes a recurring experience she has in the bed meeting,

> *"There's not enough casual staff in the hospital to cover so quite often you'll go to a meeting for patient flow, the bed meeting, where you see where everyone is in the hospital, and they'll say there are 20 requests*[69] *in the hospital for casual staff and only three* [nurses] *available" (Samantha).*

The shortage of nurses to fill nursing gaps is compounded by a shortage of beds,

> *"You go to a bed meeting, and you already know that we've got people waiting there* [in ED] *and you hear that there's not really any anticipation of discharges* [from the wards of the hospital] *and you think, where are these people going to go? (Samantha).*

Here again, these conversations reconfirm nurses experiences of a perpetual shortage of nursing staff, and a perpetual shortage of beds in the hospital for the number of patients booked to arrive, and that nurses know will arrive during the shift. Decisions about bed reductions in hospitals and wards are puzzling to frontline nurses. They do not know what knowledge is informing these decisions. Reducing bed numbers seems counter-intuitive to what they actually experience in the hospital every day.

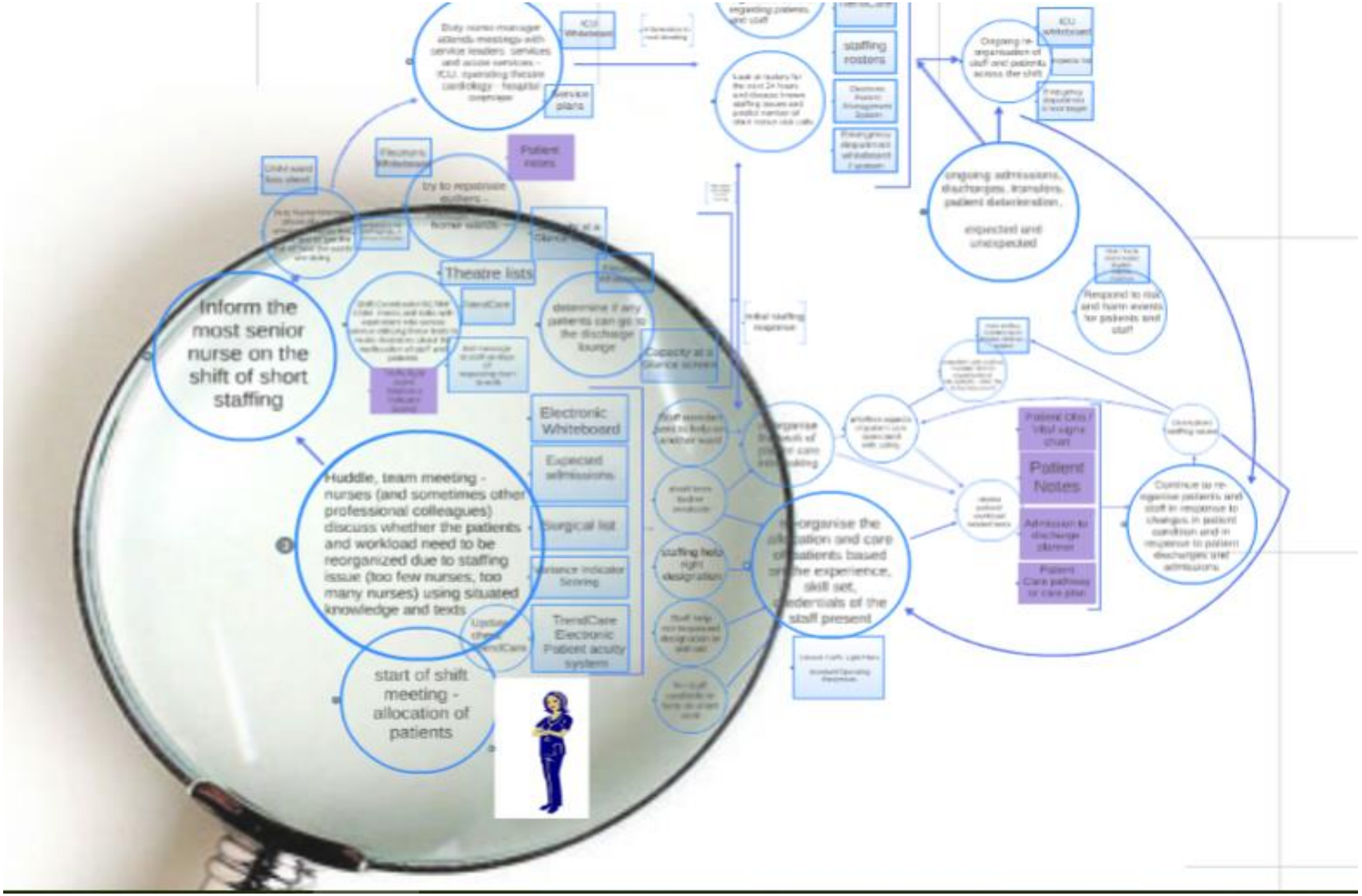
This 'expected shortage' (of nurses and beds) and its effects, has become part of the generalised knowledge that nurses use to describe their everyday work. What these conditions actually establish (in reality) is competitive responses for the measured and rationed resource of nursing labour. This competition for scarce resources often sets CNMs and shift coordinators at odds with each other, and with the DNM. The conflicts and tensions compound the already stressful work of trying to resolve short-staffing and care for patients that continue to arrive.

To summarise to this point, nurses and shift coordinators (and sometimes CNMs) have completed an extended sequence of textual processes and actions[70]. They have

[69] Twenty frontline nurses are needed based on the determination made by the all of the shift coordinators using the intelligence they have gathered.
[70] Often described as text-act-text sequences in institutional ethnography.

engaged in local intelligence gathering and completed multiple textual sequences associated with reading and updating textual accounts of patients' needs and nursing work for known, anticipated and unexpected conditions. They have called the DNM and made a case for more staff based on this collective and contextual information, which I am describing as their 'situated intelligence'. The team may also have elected to complete a REF report. Simultaneously the nurses have attempted to activate local strategies to resolve the staffing shortage themselves. In addition, the shift coordinator/CNM has attended the bed meeting to compete for the scarce resources of more nurses. In Figure 18 (below) a magnifying glass hovers over the text-act-text sequences that make up nurses' work of trying to activate an organisational response to short-staffing described by participants. Circles represent actions, meetings, conversations, and squares represent texts (screens, lists, whiteboards).

***Figure 18 Text-act-text sequences in frontline nurses' work of trying to activate a staffing* response**



It is possible to discern in figure 18 that the text-act-text sequences of frontline nurses extend beyond their ward and short-staffed shift. Chapters 7 and 8 take up these connections and trace them beyond the local context of the short-staffed shift into staffing decision-making meetings held elsewhere.

Almost all of the extensive efforts described in this chapter and illustrated in figure 18 have required nurses to take their eyes off patients and place their focus on screens and meetings. This activity is yet to benefit the patients on the short-staffed shift directly. Efforts undertaken so far are designed to stimulate an organisational response to the short-staffed shift. Based on the participants' descriptions, there were five possible responses.

Organisational responses to short-staffed shifts

If updating screens, activating local strategies, and calling the DNM, have not repaired the shift, then the bed meeting offers a further opportunity to accomplish this repair. Regardless of when it occurs, participants' experiences identified five possible organisational staffing responses. The first is in the form of a registered nurse who knows the ward and speciality well, and who will be able to take a patient load and will be able to help for the duration of the short-staffed shift. Other types of staffing help include nurses who are not familiar with the ward, patients or speciality practice, such as a children's nurse sent to help in adult cardiothoracic surgery. This nurse will (ideally) need orientation to the layout of the ward, drug cupboards, crash trolley, and an opportunity to familiarise herself with the conditions, medications, and procedures of the ward. Alternatively, the staffing help may be in the form of hours – where a nurse can come from another ward and help for 2-3 hours to cover meal breaks or help with pressure area care turning or medication rounds, before returning to their ward. Then again, the help may be in the form of a Health Care Assistant[71], rather than a Registered Nurse, who can assist with washing, feeding and walking patients, as well as restocking equipment and linen and any urgent cleaning, bed making and so on. The fifth response is that there is no help available. All participants could recall occasions when the staffing

[71] Health Care Assistants are unregulated health care workers.

response was "yes you're right, you are short-staffed, but we don't have anyone to send you, just do the best you can".

Regardless of the staffing response for the shift, nurses engage in an extensive and ongoing reorganisation, rejigging, and juggling of patients, patient care, and nursing work. This effort is to try to keep patients safe and complete as much of the care work as possible, despite there being an inadequate number of nurses (or skills, or experience) on the shift.

Nurses' work of reorganising, rejigging, and juggling

In the event that staffing help is available, the short-staffed team must think about which patients to give the nurse coming to help. Their decisions are based on the skills, experience and knowledge of the helper and whether they are familiar with the patients, their conditions, procedures and medications, or whether they are coming from another speciality. This knowledge of the helper nurse is relevant to the reorganising of patient allocations and often cannot be ascertained until they arrive on the shift, sometimes necessitating the reorganisation of patients that have already been allocated to nurses. This reorganisation is disruptive and may require nurses to interrupt work, handover work in progress, introduce themselves to new patients, explain the reason for the change and familiarise themselves with the work of new patient allocation.

All standpoint participants had experienced being a helper nurse, as well as receiving a nurse coming to help on a short-staffed shift. Some participants talked about how they try to quickly orientate the nurse to the ward, identify a buddy for them to go to with questions, and try to check in on them as the shift progresses. Others described hectic short-staffed shifts where they directed the helping nurse to look at the whiteboard and said 'your name is against the patients we've given you, there are the notes, good luck'.

When the staffing response is in the form of two to three hours of help nurses must interrupt the work they have begun to think about how to reorganise patient care to maximise the benefit of this short-term help. Mary, a CNM, offers an example of the reorganising work associated with short-term help,

> *"Sometimes, if we get sent someone for short-term, we put up a task sheet. We're doing obs* [observations] *and drugs and so on give us a list of what you need done" (Mary).*

The nurse coming to provide short-term staffing help often called a 'tasker' receives a list of tasks required by multiple different nurses and patients. This list constitutes bits and pieces of care for numerous patients.

Here it is possible to see the reorganisation of patient care that is not within the framework of the usual safety and knowledge practices of the ward, such as a comprehensive handover of patient's pertinent details. In these tasking situations nurses who have not read patients notes and likely have not yet met the patients to whom they will be doing "tasks", take on piecemeal responsibilities – perhaps they will do wound care – looking at the directions for dressing materials. Alternatively, they will be consulting with the patients about how other nurses have provided the treatment, perhaps giving medications to patients whose diagnosis and status they do not know.

Mary recounts a similar division of tasks and labour when a healthcare assistant arrives to help with a staffing shortage instead of a registered nurse,

> *"For example, I might really need a nurse, but we get sent a healthcare* [Health Care Assistant, HCA], *so we might get them to do all the washes so we can really not do those tasks" (Mary).*

Washing patients becomes a care task that can be 'given away' to a health care assistant to do in order for registered nurses to focus on other critical nursing work. Tasking organises a fractured experience for the patient in which aspects of their care may involve several different individuals, many of whom are strangers, unfamiliar with them, their history, condition and specific needs.

Tasking work also fractures the physical and cognitive processes of care for the nurse. Completion of disembodied tasks without knowledge of the patient's condition or the experiences they have had so far while hospitalised, assumes that 'care' is a series of discrete activities that can be provided by any generally qualified nurse (there are

parallels here with the drop-down boxes in systems that categorise patients using lists of discrete care tasks). This approach obscures the significance of familiarity with patients conditions (and the nuanced signs of deterioration), as well as the importance of the relational connections that are necessary to clinical teamwork, and other features of the care environment that support complete patient care (Copanitsanou, Fotos, & Brokalaki, 2017; Despins, Scott-Cawiezell, & Rouder, 2010).

When no help is available patients, care, and nursing work are constantly rejigged and juggled. These activities occur throughout the shift in response to changes in patient condition and care needs, and as patients continue to arrive and force reprioritisation. Samantha, a frontline nurse in an Emergency Department (ED), describes how patient placement in cubicles in the ED is organised by how many nurses are on the shift and how much nursing intervention each patient needs,

> *"Then the nurse in charge would try and make them very simple patients that a doctor could see, rather than it being something that needed a lot of nursing intervention.... so it's kind of like 'rejigging', and I think you're also 'juggling'. If I get that person ready to go, then I know I'm immediately going to get another person in there. When am I going to have time to appropriately write my notes, get to a computer, do x y z over here and it's just that constant juggle in your head of prioritising" (Samantha).*

Under short-staffing conditions, Samantha knows that she cannot get everything done. She constantly reorganises, rejigs, and reprioritises pressing patient care needs to the front of her mind and her work. Invariably, this reorganising work, critical to patient safety, results in frontline nurses pushing other nursing work further and further back in the shift. As a result, they often work past their paid hours to complete everything that must be done, something Campbell (1984) argues, is a form of exploitation.

This reorganising, rejigging and reprioritising work is skilled, intelligent, and accomplished work, although nurses do not necessarily perceive it this way. Rather, nurses perform this rejigging in response to patient cues, to adapt to work intensification and to compensate patients for fractured care processes caused by short-staffing.

Although much of this work is missing from formal accounts of the shift, both patients and organisations rely on and take-for-granted that nurses will know what to do to keep patients safe. However, this intelligent work relies on education, experience, resourcing, space for cognitive processing, and often, time to talk over some of these decisions with colleagues. Under short-staffing conditions, these necessities are eroded. As the work gets harder, more pressured, with the space for cognitive processing and reflecting on patients cues squeezed out, the conditions under which risks, omissions and errors occur are established. It is precisely these concerns that sparked the Nurse Safe Staffing Project. As I have shown, although frontline nurses have taken up the tools and strategies of the project, they cannot consistently secure organisational staffing responses that repair short-staffed shifts.

The many tensions and contradictions brought into view through these material experiences are both puzzling and problematic for nurses and the researcher. Why is it that the many textual tools and processes, introduced into nurses' everyday frontline work by the Nurse Safe Staffing Project, have not resulted in the types of organisational responses that repair the shift and achieve safe staffing? Analysing the findings of the chapter, and going backwards and forwards between standpoint participants experiences and my knowledge of what these tools and processes were meant to have achieved, an encompassing problematic statement for the project emerged.

The project problematic

How nurses know about short-staffing and patients' needs differs from how they are portrayed in the textual accounts of the shift. These textual accounts are taken up as the basis for decision-making that often supplants nurses situated knowledge of what is actually going on. These actualities, as nurses experience them, also differ from the promises and intentions of the Nurse Safe Staffing Project. Nurses are taught that completing these nurse staffing tools will make a difference to the responses they get to staffing shortages. Having been one of the former frontline nurses involved in designing and implementing these tools, I can confirm that this was the Nurse Safe Staffing Project's ideological intention, and how they were marketed to nurses and organisations. However, as this chapter shows, the 'ideas' behind the Nurse Safe Staffing

Project tools differ from the reality of activating them in practice. Based on these initial findings, the problematic to be unpicked and examined in the remainder of this project aims to understand *how the best efforts of an exciting initiative, by nurses, to support nurses to provide care, has resulted in practices that systematically substitute and dispute nurses contextual knowledge about short-staffing and patient safety and do not consistently activate the staffing responses nurses know are needed.*

Conclusion

This chapter held a magnifying glass over frontline nurses experiences of assessing, reporting and trying to repair short-staffed shifts. I also explored the pressured, complex, and intelligent work of reorganising and rejigging patients and nursing care to try to 'make things work' on short-staffed shifts. What has come into view is the complex collection of narrative, experiential, textual, and situated knowledge frontline nurses and shift coordinators utilise to make these assessments. These multiple knowledge sources, and what nurses know and do because of them, constitute what I am describing as nurses *situated intelligence*. Situated intelligence forms part of the knowledge and work of nurses to keep patients safe under (ever-changing) current, anticipated, and unexpected conditions. Nurses generate textual accounts of patients' needs and staffing using tools provided by the Nurse Safe Staffing Project and patient acuity systems that do not capture their situated intelligence. I have shown that these textual accounts can either be accepted, questioned, or (sometimes) disputed by extra-local managers outside the unfolding shift. I have shown that organisational staffing responses can be adequate or partial. I have also shown that the response to requests for help with staffing for patient safety can be 'no', there is no help available.

I have begun to reveal that all staffing responses require frontline nurses to undertake extensive and continuous work to reorganise, rejig, juggle, and prioritise patient care and nursing work. Although it could be argued that this is the very nature of frontline nursing work, short-staffed shifts erode the conditions under which this complex professionally informed work is possible, increasing the complexity, pressure, and risks of error. This extensive work, and (sometimes) ineffective staffing outcomes, are troubling and puzzling and provided the basis for the development of a project problematic to be unravelled over subsequent data collection and analysis. The next

chapter begins this unravelling by examining how nurses have taken up the textual accounting practices of the Nurse Safe Staffing Project and been enrolled in translating their situated intelligence about patients and staffing needs into abstractions: hours, colours, and events (REF reports).

Chapter 6 - Knowledge in translation

Translating nurses' knowledge into hours, colours, and REF reports

Introduction

The purpose of this chapter is to provide a detailed examination of some of the processes and texts that translate nursing knowledge of patients and nursing work into standardised abstracted textual forms. This chapter focuses on ethnographic and textual analysis (involving local and extra-local participants) with a tight focus on the textual processes that came to light in nurses experiences in the previous chapter. In this chapter, I describe the idealised intention of these texts and processes, how they have been taught to nurses and then taken up by the frontline as part of their everyday work.

Frontline participants' data revealed nurses were concerned that these translation-into-abstract textual processes were incomplete and inaccurate representations of what is actually occurring, minute-to-minute on short-staffed shifts. During their interviews, nurses also revealed concerns about where these abstract representations go in the organisation, who reads them, and what happens as a result (I trace these abstract representations into other organisational settings in chapters 7 & 8). I close the chapter with an analysis informed by institutional ethnography concepts, demonstrating how these abstractions construct documentary realities (Smith, 1974) that not only obscure nurses' knowledge and intelligent intercession and reorganising work, they also make possible the scrutiny and control of nurses' work.

Table 7 Glossary for chapter 6

Timing study	A period of data collection in which frontline nurses gather data about the time taken to provide different aspects of patient care
TrendCare Coordinator	A DHB employee who coordinates the administrative functions of the TrendCare system in each DHB teaches nurses how to use the system, and tests and troubleshoots interfaces with other systems and updates
Patient type category (TrendCare)	Each patient entered into the TrendCare system by a frontline nurse is allocated to a system-generated patient category that most accurately describes their diagnosis and care needs (described in detail in this chapter)

Prediction (TrendCare)	Frontline nurses predict the care they anticipate each patient will need based on a care activities list in the TrendCare system. This process is often completed for the next 24 hours of care but can be updated on a shift by shift basis
Actualisation (TrendCare)	At the end of their shifts, frontline nurses update each of their allocated patients in the TrendCare system by confirming the care activities that were actually completed for the patient. The patient is then actualised
Variance Response Management (VRM)	VRM is one of three interventions of the Care Capacity Demand Management (CCDM) Programme (see diagram chapter 4). The VRM intervention is a suite of seven textual tools/strategies designed to assist with managing staffing and patient safety on the day of care, as well as collecting and storing data for analysis. These tools include the traffic light screen, and the capacity-at-a-glance screen introduced in the previous chapter and profiled in more detail here

Summary of national implementation and uptake of these textual processing tools

To provide some background to the detailed examination to follow, I summarise the ownership, implementation, and uptake of these textual accounts and translating tools at a national level. I begin with patient acuity (hours), then traffic light colours, and REF reports. In chapter 4, I identified that CCDM implementation is dependent on patient acuity data. Patient acuity data is collected from frontline nurses by two systems in NZ hospitals, Onestaff and TrendCare. The majority (16/20) of DHBs use the TrendCare system, which emphasises its ability to produce validated patient acuity data[72] based on timing studies (described shortly) and system data on 10 million patient episodes across Australasia[73]. It is important to note here that TrendCare is not a Nurse Safe Staffing Project tool, and that TrendCare is a separately owned and licensed product purchased by NZ DHBs for its many workforce and workload functions. However, as a result of the national agreement to implement CCDM in all 20 DHBs by 2021, all DHBs must be able to produce patient acuity data that meets the standards required for CCDM tools, and

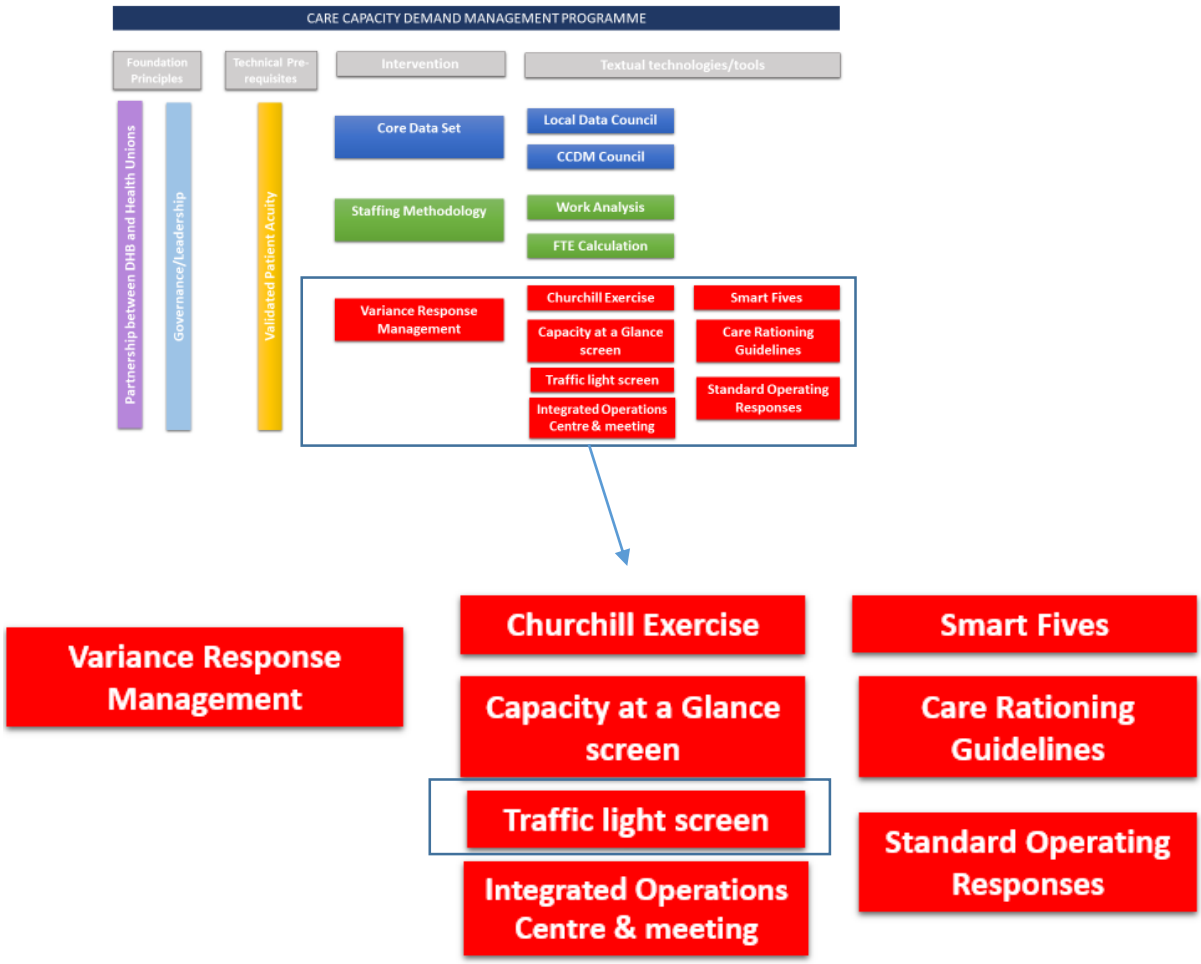
[72] In a search of research databases and websites I was able to find a text that described validation of TrendCare data in maternity services, but could find no other publically available published resources detailing the processes of data validation.

[73] I use the TrendCare name throughout these chapters, as this is the only system being used by the standpoint participants in this study.

currently, it is the TrendCare system that meets the patient acuity standards criteria set by *the unit*.

The traffic light screens (introduced in chapter 5) are one of seven tools/strategies in the Variance Response Management interventions of the CCDM programme. The VRM intervention and its many tools including the traffic light screens are in various stages of implementation in 16 of the 20 DHBs (see figure 19 below detailing my understanding of VRM intervention tools based on my experience as a member of the CCDM development team).

Figure 19 CCDM programme components with detail of VRM intervention



The final textual tool – the Reportable Event Form (REF) report - has been a feature of all 20 DHBs for many years, designed to comply with global and local patient safety policies and the reporting of adverse and sentinel patient events (as covered in chapter 4). Since 2007, this system has also been used to report short-staffing concerns

as part of the Escalation planning strategy of the Nurse Safe Staffing Project. As a result of the recent nurses strike and the commitment to national implementation of CCDM by 2021, Escalation planning and the reporting of 'safe staffing' issues using REF reports has been reinforced as a staffing strategy, particularly in the interim as the Staffing Accord comes into effect and recruitment of additional nursing FTE occurs (New Zealand Ministry of Health, 2019; New Zealand Nurses Organisation, 2018).

Generating 'hours' - abstract stand-ins for patient care needs and nursing work

Before undertaking this research, I had observed a number of the processes and practices associated with generating hours and had many conversations about these processes. Nurses' concerns about them were borne out in this study by research participants who were operating these systems as part of their everyday work.

TrendCare coordinators said that frontline nurses collecting data in timing studies are fundamental to the generation of the HPPD and patient type categories (described shortly) in the TrendCare system. During timing studies (on a medical ward for example), each nurse[74] on each shift wears a stopwatch, turning it on as they enter a patient's room (or another clinical setting) and turning the stopwatch off as they leave the room again. The time in the patient's room generates a time recording in a category known as 'direct patient care'. This is the time it took for the nurse to complete a variety of care activities in the patient's room, directly involving the patient, such as taking clinical observations, helping the patient complete the dietary card for the day's meals, answering any questions the patient or relatives might have, and emptying the urinary catheter bag. Not all patient-related care activity occurs directly in front of the patient. Activities such as generating referrals, updating the patient's care plan and writing in the clinical notes generally occur away from the patient's bedside. These activities are also timed, and generate an HPPD timing category for 'indirect patient care'. At the end of each shift, nurses 'dock' the stopwatch they have been carrying around their necks in an electronic station, and the recorded timings of their activity are uploaded into TrendCare. Once completed and uploaded, all timing studies data is aggregated and processed via

[74] Such as an experienced nurse, new graduate nurse, student nurse, enrolled nurse and health care assistant.

a series of complex algorithms built into the TrendCare system. The aggregated and processed data generates an 'average range' HPPD for a variety of medical patient categories

Eloise, a nurse with extensive knowledge and experience of TrendCare as a frontline nurse, as well as having implemented the system into several DHBS, explains her understanding of patient type categories and the HPPD (hours) ranges associated with them. For a medical ward, TrendCare provides a patient type category such as 'standard medical patient', or, for a medical patient with high levels of monitoring and intervention requirements, a category of 'high dependency medical patient'. The high dependency medical patient will have a higher averaged HPPD range. A standard medical patient type has an averaged HPPD range of 3.80-4.9 Hours Per Patient Day. This allocated range means that the patient, on average, will require a total of between 3.80 and 4.9 hours of 'direct' and 'indirect' care over a 24 hour day,

> *"HPPD is essentially a 24-hour breakdown across the three shifts for an average medical patient type. On admission, the patient might require 2.25* [hours of care] *on the am shift, 2.30 on pm shift, 1.30 on the night shift = 5.85* [total for the day] *in the first 24 hours. As the patient progresses and improves in the admission, the 24 hour periods adjust through to discharge[75]. So when a ward is looking at the HPPD for a particular patient type, the hours are a mix of the high and low giving the average" (Eloise).*

In Eloise's description, the patient needed more care (5.85 hours) in the first 24 hour period than the HPPD average allocation range (3.80-4.9) suggested. Eloise explains that throughout the patient's hospital stay, they are expected to require less and less care as they recover and prepare for discharge. By their day of discharge, the patient will likely require less care over 24 hours than the average HPPD range (perhaps only 2.8 hours). Once the patient has been discharged, the HPPD of all the days of care are calculated and averaged and should, ideally, fall inside the 3.80-4.9 HPPD averaged range.

[75] Meaning that on some shifts, the patient will take more HPPD than the system allocates, and on other shifts they will require less, therefore, overall the patient will fall inside the average range.

How nurses are taught to take up the ideas and practices of generating hours

Nurses learn that generating patient acuity data about patients and nursing care for organisational decision-making is part of their professional work in the ward. They are introduced to the patient acuity system at a new employee induction meeting or are taught how to use it as part of their everyday work by the ward Nurse Educator, Charge Nurse Manager, or TrendCare Coordinator (where DHBs are using TrendCare).

Eloise and Henry (a former TrendCare Coordinator) describe how; when learning to use TrendCare, frontline nurses must become familiar with a specific list of patient type categories relevant to their ward. Data entry involves a nurse sitting at a computer, logging into TrendCare with their identifiable login, and locating the data entry screens about their group of patients. They must determine whether each patient is in the right patient type category, based on what they have been taught about these categories. They must also learn how to predict and actualise each patient. Pamela describes this process,

> *"if you're the nurse looking after the patients on the night-shift you predict the next 24 hours of care that you think your patient group will need" (Pamela).*

Predicting patient care involves the night shift nurse opening each patient's set of screens in TrendCare, and selecting from a variety of drop-down boxes, and selecting the care activities the patient is likely to need for the next 24 hours. Participants said that prediction was a night nurse's job on the assumption that they would have the time to do this work, an assumption all participants disputed.

Frontline nurses understand that predicting in TrendCare produces a system-generated prediction of patient care needs (in hours), which is used as the basis of staffing for the next 24 hours. Pamela says that prediction is important because

> *"that way when the bed managers come along in the morning they've got all the data for the next 24 hours" (Pamela).*

Bed managers, trying to ensure there are enough nurses on each shift, rely on the system's predictions of patient care needs. However, these predictions are estimates

only and assume that each patient will have an uneventful and predictable course of care over the next 24 hours.

Nurses are also taught to perform a second data entry process called actualisation. This process is designed to reflect that patient care needs are dynamic, changing moment to moment throughout the shift. Nurse participants described their understanding that actualisation is designed to capture an accurate record of the care the patient actually received,

> *"if you're on a morning shift when you come in and you've provided all your care, you actualise what you've done. So you'll say – the night nurse might have said that patient's actually independent walking, but then the patient, over the course of your am shift – had a seizure or had a fall or something. So you can say, oh no they're now full assist and you can put in time spent when they've had a fall, so actualising the care actually done" (Pamela).*

Staffing, based on the prediction by the night nurse, and used by bed managers, is unlikely to have been sufficient for what actually occurred for this patient and nurse on this shift. It is important to note here that TrendCare cannot (and does not claim to) keep up with what is actually occurring for patients in real-time. Trendcare provides a start of shift prediction, and an end of shift actualisation but is not designed to be the basis for staffing decision-making as the shift unfolds.

Before this research, I watched a nurse undertake this actualisation process for a patient, Mrs Jones, an unstable diabetic patient admitted for treatment of a leg ulcer. I saw the nurse click on a box that contained descriptions of different types of dressings. From the selection available to her, the nurse ticked that the patient needed a complex dressing, she also clicked on the administration of two different types of pain medication, and that she helped Mrs Jones with ambulation to the shower and toilet. Eloise (TrendCare Coordinator) explained that clicking on these care activities activates an algorithm that produces an averaged actualised time for the care that was provided. The specific needs of Mrs Jones and the nurse's skilled knowledge about how to meet these specific needs are abstracted into the calculation of averaged time. Along with education

about patient type categories, prediction, actualisation and averages, nurses are taught the importance of data accuracy.

TrendCare coordinators spoke about the assessment of nurses' data entry accuracy using an auditing process called Inter-Rater Reliability (IRR) testing. This process is one that involves a designated IRR tester[76] sitting alongside a frontline nurse, at a computer in the nurses' office, while the nurse spends approximately 20-30 minutes in a practice (simulated) environment allocating patient type categories and selecting care activity criteria for the HPPD for a hypothetical cohort of patients. The IRR tester assesses any incorrect data entry and educates the frontline nurse about patient type categories, care activities, prediction and actualisation as part of the audit. On a ward with 50 nursing staff, IRR testing can require as much as 25 hours to process all nursing staff through this audit. Although CNMs and TrendCare coordinators talked about the importance of data accuracy and consistency, they found the audit process particularly difficult to accomplish during shifts in the work environment of the ward.

Nurses' concerns

Nurse participants in the study, and nurses I encountered in my experience as a CCDM consultant, expressed several concerns about TrendCare data entry and the representations it produces. Nurses worried about the intrusion of data entry work (one of many screens and text related work activities) on what they consider to be their primary work with and for patients. Although they are taught that data entry should take no longer than 3-5 minutes per patient, nurses often find they need longer than this, especially when they are first learning to use the system. Nurses do not believe that staffing accounts for this learning time or the many other forms of data/textual work they do. Despite being taught that TrendCare data is important for nurse staffing decisions, nurses did not believe that completing TrendCare is more important than caring for patients, and some do not complete this data entry work when they are short-staffed.

[76] Often a nurse who has been injured and is in a return to work programme, or a nurse about to go on maternity leave, or even a nurse taken off clinical duties for the duration of the audit, to perform the individual testing of each staff member.

Nurses are also concerned about how accurately the HPPD represents each patient's actual and changing needs, reflecting findings in two reports regarding TrendCare data as a feature of the implementation of CCDM (Hendry, Alione & Kyle, 2015; Mental Health TrendCare survey report, 2014). In Eloise's extensive experience, frontline nurses understand the 'idea' of averages as the basis for the HPPD range. However, they become concerned when a patient required 5.85 hours of actualised care, much more than the predicted amount, and more than the ward was staffed for (staffed on the prediction that the patient would need 3.8-4.9 hours of care). As Pamela's example above demonstrated, patients' needs are dynamic and change as the day unfolds. On a shift that began with short-staffing, compared to predicted hours of care patients were going to need, nurses are already understaffed for the work to be done. When the unexpected occurs, as it did in Pamela's story, nurses know that the conditions for preserving patient safety rapidly deteriorate when immediate and effective staffing responses cannot be mobilised.

Measurement of nursing work, in hours in TrendCare, allows scrutiny of nursing work by extra-local managers. Nurses are concerned with where the HPPD data goes, who looks at it, and what conversations and staffing decisions occur because of this data. Nurses are concerned that for extra-local managers, the HPPD hours stand-in for what is actually happening but do not reflect patients individual and dynamic needs nor the skilled and responsive intercession work being done by nurses. Eloise says that in response to these concerns some nurses 'pad the data',

> *"If* [the patient] *is on a low timing* [HPPD] *and ready for discharge, it means they only get seven minutes per hour*[77]*….that's not a lot. So if they are in a side room all the time and especially if they are elderly, they become more demanding, ringing the bell. And because we* [nurses] *are doing a lot of in-and-out, in-and-out, in-and-out, nurses then use those* [TrendCare] *comments- like behavioural or cognitive issue - as indicators" (Eloise).*

Few nurses are consciously aware that patients due for discharge are allocated the averaged equivalent of seven minutes of care per hour. When the patient is ringing

[77] Seven minutes of nursing time per hour both in the room (direct care) and for documentation, referrals and so on (indirect care).

the bell and seeking reassurance and information, nurses want to ensure that the TrendCare data reflects the time the patient is actually requiring. To accomplish this, they choose care activities from the TrendCare drop-down boxes that reflect anxiety or cognitive issues.

Eloise says that where nurses have used these indicators in TrendCare, without corresponding notifications in the patient's notes, they are 'corrected' from *padding the data*. TrendCare coordinators and frontline nurses described this corrective action as work involving audits, education, and being told that padding will decrease extra-local managers' trust in the data. Nurses are told that this lack of trust could affect staffing decision-making and responses. When questioning TrendCare data, extra-local managers look at the nurse's textual accounts of the shift and textual accounts of patient care for corroborating evidence of what is being claimed in TrendCare. I now turn to the intentions and uptake of the traffic light scoring screen.

Generating colours – abstract representations of the supply and safety of the care environment

This section reflects the experience and knowledge of participants designing, implementing and using the traffic light system. I begin with a summary of ideas behind the screen and the CCDM programme intervention called Variance Response Management (VRM) as I understood and observed them as a member of the development team in *the unit*.

The idea of the VRM intervention was introduced to DHBs as a suite of tools designed to assist DHBs with strategies for managing variance[78] on the day of care, as well as the collection of data for trend and pattern analysis. Variance can be described as either positive or negative variance. Positive variance, in the context of VRM, is when there are more staff (according to TrendCare and staffing rosters), than are required by patient numbers and predicted patient acuity care hours. Negative variance describes those occasions when there are less staff, time, and resources than required to meet the hours for patient care and the non-patient related work of the ward and the organisation.

[78] Variance is described as any variation away from what was expected (patient numbers, acuity, and so on) and what was available and planned in terms of staffing, supplies and time.

The traffic light colour screen is designed to be used by the shift coordinator to represent the supply and safety of the care environment[79]. In this section, I include extra-local participants' experiences of developing and using the traffic light screen data to assess the 'problem' of variance.

The prototype for the traffic light scoring screen was originally developed by a group of nurse leaders and Charge Nurse Managers (CNMs) in a NZ DHB during the three demonstration sites initiative (described in chapter 4). Jake, one of the nurse leaders involved describes this development,

> *"I did the research, academic research, read as many papers as I could on what escalation traffic plans were, mixed in (a) variety of stuff from around the world and developed the brain dump of the questions from the Safe Staffing Healthy Workplace Working Group[80]. Then I simply got a mauve, green, yellow, orange, red word document, put the colours in the boxes, got all the CNMs together, all of them on the (DHB name) site and (DHB name) site, and said - what do you do when you are in green? Like when you're normal – what do you do? And obviously went to mauve and we progressed through all of that* (the other traffic light colours)*" (Jake).*

Charge Nurse Managers' knowledge about what happens on well-staffed versus short-staffed shifts was conceptualised, partly by the literature reviewed, and partly by the need to determine standardised and quantifiable items for the lists that were overtly measurable.

These lists were trialled on paper sheets in wards by shift coordinators initially, with variation screened out over time to standardise list items across hospital wards and other professional services. The practice of standardisation occurred in each DHB over several months of trialling the tool and was then augmented by *the unit's* national review of the lists used in traffic light screens, and the publication of a recommended standardised list in 2016. *The unit's* recommended standardised list of traffic light

[79] This includes how well the ward is supplied with nurses (HPPD), with clerical staff, equipment and medication resources, whether the workload is manageable and whether nurses are going to get their breaks and whether or not patients will receive all of the care they require.
[80] A group of DHB employees tasked with developing operational safe staffing textual tools.

indicators included a literature review providing an evidence base for the recommendations. Following the paper trials, Jake worked with the information services department and data analysts to develop electronic versions of the list like the one in figure 20 (below). This work involved building an algorithm into the background of the screen to change the colour in the total score box depending on which items were ticked by the shift coordinator.

Figure 20 Example traffic light screen (© NZ MoH 2017)

Provided by the Safe Staffing Healthy Workplaces Unit and used with permission.

As part of assessing whether the shift is short-staffed, and more nurses or other resources are required, the shift coordinator works their way down this list clicking on each relevant box. If nurses are looking after more than six patients each and half of the staff team are from other wards, then these boxes get a tick. A skill mix breach (bottom row) is ticked when the ratio of registered nurses to either health care assistants, new graduates, or enrolled nurses differs from the agreed model for the ward. *The unit* recommended the inclusion of the *professional judgement of the shift leader determines*

that the shift is unsafe[81] to reflect the original agreements in the COI report (2006) and Escalation planning (chapter 4), that the professional judgement of frontline nurses (and midwives) must be part of the assessment of staffing shortages and threats to patient safety. In my observations as a CCDM consultant, several DHBs (either the executive or the CCDM Council) elected to exclude the 'clinical leaders professional judgement' item from the traffic light screen, claiming the measure was too subjective (see Tubbs Cooley, Mara, Carle, & Gurses, 2018 for recent research on nurses subjective experience of workload being the most accurate predictor of patient outcomes).

How frontline nurses are taught to take up the traffic light colour

Nurses are taught that producing a traffic light colour communicates nursing knowledge and concerns about the care environment to (extra-local) managers making staffing decisions. Few frontline nurses attend the education sessions on this screen when they are introduced to DHBs. Instead, *the unit* relies on the CNMs, extra-local managers, and NZNO delegates to reiterate the message that the screens are a tool for frontline nurses to have their voices heard. As a result, frontline nurses' understanding of this tool is varied. Mary, a CNM says,

> *"All the staff had to go through training on understanding what it means. But I find that there's a varying level of trust and understanding from the staff in that particularly the older nurses who are a bit less technology driven or whatever – like they don't pay any attention to it whatsoever and they think it's a complete waste of money" (Mary).*

From participants' accounts and my own experience in DHBs, it was not uncommon to hear that first exposure to the screen and the concept of the traffic light colours, was when screens were installed in the ward. Mary said that often nurses were not aware that the colour and the display screen were tools of the CCDM Programme, or connected to safe staffing.

Shift coordinators were instructed to think of the system as a 'real-time' voice that connected coordinators directly to staffing decision-makers (extra-local managers)

[81] Second to last row on the screen.

and filled the gap between the TrendCare prediction and actualisation data. Shift coordinators (and CNMs) were taught to change the colour as often as they determined to be necessary for the shift, based on their professional judgement, and the categories in the traffic light screen. This somewhat idealised presentation of a responsive system differs from what shift coordinators told me actually occurs, as this example from Grace's experience demonstrates,

> *"Ah, it was simply – here is the tool, here is the icon on the computer, please do this twice a shift. Beyond that, it certainly takes a lot of initiative, and I guess an understanding of what pressing those buttons could potentially achieve for you in that moment of danger, yeah, but really no formal training apart from a five minute run down with the charge nurse" (Grace).*

Many nurses did not know about the purpose of this technology, where it came from, where it went and who looked at it. Nurses who were anticipating a direct link to staffing resources described seeing that their ward had been in yellow for several hours, and there had been no response.

Charge Nurse Managers were enlisted to teach the ideas and practical processes of the tool to their nursing staff. Several CNMs I spoke to said that it took them some time to understand the tool themselves before being able to teach it to others. Mary talks about the challenges of translating the conceptual design of the system into a set of rules for operating the traffic light system,

> *"You get a tick for a TrendCare short more than one hour short per nurse right? Some people struggle to understand that that actually means for the whole staff 'cos we have a healthcare assistant usually on morning and afternoon and they're like – oh I'm two hours short – but in actual fact the healthcare assistant is kind of divided up for two hours working with each nurse type of thing" (Mary).*

Mary's explanation demonstrates a rule-bound understanding of the system. Her knowledge is that if there were five nurses on the shift one-two hours short in TrendCare, then patient care would need to be five to ten hours short before a change in traffic light colour could be activated.

Jo, a mental health nurse, and occasional shift coordinator describes her experience of a discrepancy between her situated professional knowledge of what is happening on a short-staffed shift, and how this is represented by the traffic light colour. Talking about how she tried to get the tool to reflect her knowledge about the actuality of a short-staffed shift, Jo says,

> *"It's hard because it says - is there any nurse working with five or more patients?, and you tick that, and then, - is there any nurse in IPC[82] with more than two patients? and you tick that, - are you over your bed occupancy?, yeah you tick that, - is your skill mix okay? No, and you tick that. The highest you can ever get it to is orange even though we're full on, and it's dangerous" (Jo).*

Jo has taken up the ideas of the traffic light tool and has learned to view the shift through the categories of the traffic light colour. Her adoption is based on her assumption that these are the features of the shift that extra-local managers are focused on, and that she will be able to activate the necessary staffing responses she knows are required in her unit. Her material everyday experience does not align with what she has been taught about the tool. Jo's reality, and how that reality is represented by the colour orange, are not the same.

Nurses' concerns

Nurses' primary concerns centre on the discrepancy between the short-staffed shift as they are actually experiencing it and how the colour category represents this actuality. From my experience as a CCDM programme consultant, I provide a graphic account, similar to Jo's experience (above), that demonstrates how the category attributed by the traffic light colour stands-in for and obliterates what Smith (1987) calls 'material actualities'.

In 2016, on a routine visit to a DHB, I was talking with a mental health nurse, (I call Aroha), discussing her concerns about the traffic light colour system. Aroha said that her last shift had been two nurses short. Although they had been able to get some help

[82] Effectively a mental health intensive care unit.

from hospital security guards[83], the mental health unit where she worked had several more patients than they had rooms or beds available. A large number of these patients were, as she described them, 'highly volatile and unpredictable'. Aroha said that for much of the shift, she felt such a high sense of danger and personal threat that the hairs were standing up on her arms and the back of her neck. Though she had tried to get the traffic light colour to display as red, she could not accomplish a higher alert than orange. Aroha could see on the hospital's capacity-at-a-glance screen that her unit, and several other hospital wards, were displaying 'orange'. Aroha did not believe that the orange on the screen adequately portrayed her actual experience, and that of her colleagues and patients, to people located elsewhere who were making staffing decisions.

Nurse participants described being questioned on the colour they had reported, particularly if the 'shift leaders professional judgement' box was ticked. The traffic light screen stores each change of colour (including the time and the name of the person who altered it), as well as the duration of the colour change. This storage function is ostensibly to gather data for scrutiny of trends and patterns to aid decisions making. However, nurses reported having this stored data used to question their decisions about colour changes and how long the colour was indicating on the screen. Nurses agreed there were occasions when the colour had been changed, and not changed back because the ward was busy, or because they were concerned they would receive more patients or have a nurse sent away to help elsewhere. This emphasises nurses' concerns that the colour on the screen becomes the basis for decision-making that now overrides their professional judgement and jurisdiction over what is actually happening in the moment-to-moment of the shift. I turn now to the final text/technology – the Reportable Event Form (REF).

Generating 'safe staffing' events - the Reportable Events Form (REFs)

As introduced in chapter 4 and 5, the Reportable Event Form (REF) is an established text/technology[84] widely used in all 20 DHBs, linked to central policy texts at

[83] Mental health nurses have described an increase in the use of security staff as a strategy when a shift is short of specialised mental health nurses.

[84] For which there are numerous product names including Riskpro, Risk Monitor Pro, Riskman, Datix, and Edis.

the NZ Ministry of Health, and beyond that to the global level patient safety movement (OECD, 2015). New Public Management is concerned with risk identification and risk mitigation in hospitals (Ashton, 2015). In NZ, the Pike River Mine Disaster[85], in 2010, was a significant catalyst for a review of existing health and safety legislation and contributed to the Health and Safety at Work Act (2015). The Act carries significant personal liability for company board members, including hospital board members, when reported and unresolved health and safety risks are determined to be the cause of personal harm. Clause 83 of the Health and Safety Act (2015) details the conditions under which a worker can refuse to continue to work because of risks to their own, or any other person's health and safety. Several (extra-local) executive manager participants said that the Act had strengthened DHB focus on and collection of health and safety risk and harm events.

Frontline nurses described using the REF reporting system to report adverse and sentinel patient events according to DHB policy. In addition, nurses (and others) have been encouraged to use the REF system to report risks and near misses involving patients, staff, visitors and equipment so that an official (sanctioned) organisational record of the event is generated. Although nurses are encouraged to complete a REF report at the time of the risk/harm event, few can do so when a shift is short-staffed. Nurses also know that the REF reporting system is not designed to result in a response on the day of care, as Grace identified in the previous chapter.

Few frontline nurses interviewed knew where the REF report went once completed. Jack, a nurse, who has been a DNM in a large hospital for more than 15 years, has extensive experience with REF reports and describes what he understands of the textual process associated with completing a REF report,

> "*The Risk Monitor Pro* [A REF report electronic system] *goes to the Quality Department, but it also goes to the head of the department where the thing happened. So if it happened in* [name of ward] *the CNM gets an electronic copy of this, and what she has to do is that she has to open the form up, read it, see what category the thing is and fill out her stuff which is – yes this happened, it was due to this.* [She then lists] *What actions have been taken to prevent*

[85] https://nzhistory.govt.nz/culture/pike-river-mine-disaster.

> *reoccurrence, and that goes to the Quality Department and they will either resolve it or not resolve it[86]. If it's something really, really big, some things take a while to get resolved. Some things, the CNM, can resolve it electronically and speak to the person concerned and that works fine. - like so-and-so was left with the cot sides down when they should have been up, they fell* [out of bed]" *(Jack).*

Jack's experience opens up the complex textual process of the REF report that engages multiple different readers at various locations in the organisation, all with a part to enact in the processing of the text.

Nurse participants knew that the REF report was not going to result in a response on the day of care. Grace understands that the REF creates a record of an event to be used as evidence. She says

> *"It's a risk aversion process, and if instances were to occur, we can look back and say – hey we did acknowledge that this was not an okay situation" (Grace).*

By completing this process, Grace feels some of the accountability for any adverse outcome is mitigated by the REF report that identified the risk that things could go wrong. Nurse participants' primary purpose for completing a REF report was to 'notify someone that things were going wrong, in the hope that things might change'. Here, it is possible to see nurses taking up the textual process of the REF report, on the (taught) assumption that the report represents an (institutionally) legitimate form of knowledge about the event, but with almost no expectation of a short or long term outcome.

How nurses are taught to take up the REF reporting process

Nurses are taught to use the REF process in several settings by a variety of different managers and professional leaders. Nurse participants said that what they learned about the REF reporting system depended on who was teaching them. Bruce, a

[86] A textual process. If the REF is resolved, it is closed and considered complete. If not resolved a secondary textual process begins which may include a process called a Root Cause Analysis-in which a multi-disciplinary group of professionals from within the DHB are tasked with tracing backwards from the event (using accounts from individuals and textual records) to try to determine how it was caused, and could be prevented in future.

service manager, describes several settings and textual methods that are designed to teach nurses about the REF process,

> *"Nurses learn about the REF process as part of their orientation to the organisation as a new employee. Employees then receive reinforcing messages about reportable events when a report comes to their ward, describing the REFs that have been submitted from that ward, and what has happened as a result of the REF report. They are also reminded to complete the REF process in ward team meetings" (Bruce).*

Bruce's focus on nurses learning to complete REF reports, and to read REF summary reports, reflects his responsibility for the organisational requirement to generate reportable (adverse and sentinel) events and to identify and manage risks. In NZ hospitals, REF reports are stratified into different levels of significance. Participants explained that it is only Sac 1 & 2[87] category REFs that make it to the level of executive managers and the hospital board. The remaining REFs are usually (electronically) resolved at the ward or service level. This stratification establishes a hierarchy within the textual process that determines which risks and events gain organisational attention and which do not. The hierarchy also determines where, and by whom, REF reports are resolved. This hierarchy is consequential as will become apparent.

Frontline nurses are also taught to use the REF reporting system as part of Escalation planning and safe staffing by their NZNO delegate, Organiser and Professional Advisor, and by DHB CNMs and Directors of Nursing. These extra-local representatives/managers rely on REF reports to provide 'evidence' of a safe staffing or harm event. However, few of the extra-local participants interviewed from this representative/manager group were able to collect and use the REF reports on staffing or patient safety as evidence they had hoped for because these REFs are not graded as Sac 1 or Sac 2. Without this classification, the staffing and patient safety REF reports cannot be included in organisational counting practices. Reports that have been electronically resolved inside the textual REF process are difficult for extra-local managers or nurse's union representatives to access (more on this in chapter 8).

[87] None of the participants I interviewed were able to tell me what these abbreviations stand for.

Lucy, a Director of Nursing, talked about her efforts to impress upon nurses the importance of generating safe staffing incidents in the format of the REF report. In our interview conversation, her focus on nurses generating REF reports was in order to produce a body of evidence that 'counts'. Lucy described a meeting with the hospital board,

> *"I was only able to use the narrative of nurses, as opposed to real data, not that nursing narrative isn't real data, but REFs give me evidence of deterioration in patient care, and I can take that to the board" (Lucy).*

Lucy's experience and focus are organised by her knowledge of which forms of evidence are considered credible and legitimate. The objective REF report produces data in a form that is more likely to gain organisational attention because it is directly linked to DHB, central government and global patient safety policy, and the organisation's liability under the Health and Safety at Work Act (2015). Therefore, the REF report represents knowledge in a form that counts. Lucy organises frontline nurses to produce what is happening on short-staffed shifts in the legitimate form of a REF report. She says that she cannot do her part of trying to resolve short-staffing if nurses do not produce the evidence in a form she can use.

Nurses' concerns

All standpoint participants who spoke of REF reports identified the same concerns. Among these were the arduous nature of completing the process, which they described as complex, prescriptive and time consuming, requiring access to a computer, and taking up to an hour to complete at the end of a gruelling shift. If a shift has been particularly short-staffed nurses were told they could complete the REF report on their next shift or their day off. However, few took up this opportunity.

For those participants who did complete a REF report, outcomes were mixed. Some had the REF acknowledged and were part of discussing ways to resolve the risks/issues identified. Others never received any acknowledgement of the REF, nor knew whether anything changed as a result of the report. Some participants described being reprimanded for producing an 'official' report that had repercussions for another professional worker or a manager as it brought aspects of their practice/decision-making

into question. Regardless of the outcomes of the REF process, all participant accounts demonstrate that the (legitimate) REF report is taken up as the 'facts' of the event.

Many participants also expressed concerns about how accurately the REF report *captured* the event being reported. Participants described having to leave out aspects of what happened as there was nowhere in the format of the REF to include them. Others identified the challenge and discomfort of trying to make the immediacy and distress of 'what actually happened' apparent in the REF when the format calls for a summarised, objective, and standardised account.

Analysis

Here, I employ some of the concepts of institutional ethnography to examine what has been uncovered in this chapter.

Knowledge translation, measurement, standardisation, and control

This chapter has brought into view *how* nurses are organised to participate in the translation of their situated intelligence and work into textual abstractions. Nurses are taught that the construction of these abstract versions of patients' needs, nursing work, and the care environment are part of the professional performance of their everyday work. They are also taught that these textual accounts are designed to assist in the resolution of short-staffing, which activates their professional accountabilities for patient safety and the provision of safe care environments (professional nursing competencies). Many participants described how these textual technologies secured organisational responses to staffing shortages. I am not suggesting that they do not. However, it can be argued that other important and consequential organisation of nurses' knowledge and practice is also being accomplished by this translation of nurses' situated intelligence into measurable abstractions.

The fundamental argument against abstraction is that the actual and material aspects of people's activities and experiences are obfuscated (Smith, 1987, 2003). Peoples' actualities are displaced by ideas, concepts, or abstract substitutes that stand-in for what is actually occurring. These stand-ins are invariably standardised and measurable and leave out the nuances of individuals and their unique knowledge,

experience, and skilled work (Campbell, 1984; Rankin, 2004; Smith, 2004). Measurement is an important feature of providing healthcare as well as the management of it. Nurses' measurement of patient condition via physical assessments, clinical observations, blood tests, and so on is intrinsic to assessing improvement or deterioration and prompting nurses' skilled intercession work that acts on and responds to the results. Equally, measurement of finite health resources, and the outcomes achieved in relation to prudent and controlled inputs, are critical to ensuring that safe, high quality, sustainable, health services are available to a given population (Addis, Holland-Hart, Edwards, Wood, & Neal, 2019; Hollnagel, Braithwaite, & Wears, 2013; Schroeder, Thompson, Frith, & Pencheon, 2013). However, measurement is not without implications.

In this chapter, we learned that on the day of discharge, most patients are allocated seven minutes per hour of nursing care. Within this allocation of time, all of the activities associated directly with the patient's bodily needs, and all the textual requirements such as screen updates, notes, referrals, prescriptions, must be achieved. Nurses know that this standardised and measurable allocation does not reflect the individual needs of different patients on their day of discharge. Their experiences demonstrate that staffing based on these predictions of care time will likely prove insufficient during the dynamic fluctuations of the shift. They also know that they can be questioned about allocating more care to patients than the system has predicted. I argue that this measurement, audit and scrutiny begins to illuminate mechanisms of control over nurses' professional work.

Moffatt, Martin and Timmons (2014) argue that these types of technologies are instruments for operating healthcare rationalities (constraints and performance measurement). They enable governance and control of professional work from a distance. This 'control from a distance' was apparent in participants examples of being questioned and corrected about the care they had deemed necessary for individual patients, and allocated to them via technological systems. Campbell, states "[t]he exercise of control takes place in seemingly objective documentary processes broken down into activities carried out in peoples' daily work" (1984, p. 3). I have shown how nurses have been enrolled in producing these abstract accounts of the patient, staffing, and environmental needs because these are the versions that are authorised by the

organisation and the Nurse Safe Staffing Project. In turn, the authorised account is then used as the basis for shaping, questioning and controlling nurses' work (Campbell, 1984). Scrutiny and control of nursing knowledge and work are possible because the abstractions of hours, colours, and events are taken up by extra-local managers as if they represent reality.

Documentary realities

I briefly touch here on Smith's (1974) concept of *documentary reality* and continue to explore it in more depth in subsequent chapters. Smith (1974) argues that documentary accounts (including screen technologies) of actualities are taken up by people in extra-local locations (such as staffing decision-makers) as if they represented the entirety of the event, or as the authorised version of the event. An example of how a text stands-in for actuality was provided by Pamela, in the previous chapter, where she described being asked why she was calling for staffing help when TrendCare was saying she was fine. Pamela's in-the-moment experience was of being overwhelmed with multiple complex patients, several of whom were deteriorating rapidly. The TrendCare prediction of staffing needs for the shift, updated several hours earlier at the start of the shift, was no longer an adequate or accurate reflection of current needs. However, the 'hours' as they were represented in the prediction were taken as the 'facts of the case', and used to interrogate Pamela's decision to call for help. In these situations standpoint participants described being questioned about their ability to cope, or told to 'suck-it-up' and get on with it, constructing their knowledge of what was happening as a personal failure to meet the documentary reality of the shift (I take this up again in the next chapter).

Although many extra-local participants claimed they take the hours, colours and events as measures to be factored into their decision-making, they also rely on the knowledge of the nurses 'on the ground'. However, as was illuminated in this chapter (and will become increasingly apparent in the next two chapters) the further these text-based stand-ins move away (in place and time) from the realities and actualities of the shift, the more likely they are to be taken up as the legitimate institutional version of the goings-on. The documentary realities are relied upon to summarise and homogenise a

diverse variety of occurrences into simple quantifiable terms for staffing decision-making.

Conclusion

The purpose of this chapter was to empirically describe *how* nurses are organised to construct abstract versions of their situated intelligence and skilled intercession work. This knowledge translation process is authorised by the Nurse Safe Staffing Project (particularly the national implementation of CCDM) and by local practices connected to national and global patient safety and healthcare performance policies. Participants recounted how the construction of hours, colours and events had resulted in occasions where staffing shortages were partially or completely resolved. However, nurses' concerns about how these abstract stand-ins represent the actualities of short-staffed shifts were justified by their experiences of having hours, colours and events used as the basis for an interrogation of their knowledge, decision-making and requests for staffing help. I have also begun to explicate how these abstract stand-ins form the basis of measurement, scrutiny and control of nursing work, which I will continue to expose and interrogate over the following three chapters.

I have made use of Smith's (1974) ideas about documentary realities to illuminate the objectifying processes that make it possible for these one-dimensional abstractions to obliterate the material experiences of nurses, and stand in place of their professional situated intelligence. Smith says that there are two parts to documentary realities, their construction (which I have illuminated in this chapter), and their reading, which I take up in chapters 7 and 8. The next two chapters continue to unravel the project problematic. They trace these abstract stand-ins as they leave the short-staffed shift and enter extra-local settings of staffing decision-making. Chapter 7 follows the hours and colours stand-ins as they are taken up and read in extra-local staffing decision-making processes on the day of care. As REF reports rarely result in staffing responses on the day of care, this stand-in will be taken up again in chapter 8.

Chapter 7 – Knowledge in abstraction

Symbols and virtual realities for staffing on the day of care

Introduction

The purpose of this chapter is to build on the previous two chapters and progress the unravelling of the project problematic. Chapter 5 illuminated the complex composition of the knowledge nurses use to diagnose a short-staffed shift, (which I call their situated intelligence), as well as the texts they use to translate this situated intelligence into abstract stand-ins for extra-local decision-makers. Chapter 6 traced how these abstracting technologies have been organised into frontline nurses' consciousness and how they have been taught and taken up in everyday work. I began to examine the consequences of abstraction, measurement and control of nursing work accomplished by these technologies as documentary realities, as Smith (1974) conceives them; realities that stand-in for what nurses know is actually happening.

In this chapter, I trace the hours and colour stand-ins into extra-local settings where they are read as part of staffing decision-making on the day of care. Reading in these settings is undertaken by extra-local managers from a variety of organisational settings, and is facilitated by a large-scale screen technology called the c*apacity-at-a-glance* screen. The numerous abstract symbols of the capacity-at-a-glance screen, including the hours and colours generated by frontline nurses, are explained and examined for the institutional interests they carry and insert into staffing decision-making. I then circle back to the standpoint setting using Pence's approach to discerning "how pieces of the technology are put together and how it is that they work together to produce certain institutionally authorized courses of action" (2001, p. 2005). I examine the consequences of these institutionally authorised courses of action on frontline nurses' work on short-staffed shifts. I also utilise Smith's (1974) reading of documentary realities, and Rankin and Campbell's (2014) work on healthcare technologies as virtual realities for governance to expand on the control of nurses' work and professional jurisdiction.

Table 8 Glossary for chapter 7

Integrated operations	A physical space as well as a decision-making meeting in DHBs implementing CCDM
Capacity-at-a-glance screen	Designed to be a one-screen view of the entire hospital detailing relevant information (such as bed numbers, patients waiting in ED) relevant to operating the hospital on the day of care
The day of care	In this context, I use this term to mean the 24 hour day of care, acknowledging that the majority of extra-local managers work eight hours, leaving the operating of the hospital to the DNM and frontline staff after five pm

Integrated operations

Here I briefly background the concept of integrated operations as it was conceived and developed prior to and during the 3D initiative and then move on to explain the features of the capacity-at-a-glance screen.

Talking with participants involved in the 3D initiative (chapter 4), I learned that the concept of integrated operations has its genesis in the airline and nuclear industry ideas of a central control tower. The idea was for a small number of people to be able to hold a 'big-picture' view (through data and symbols) of extensive operations from a central point in an organisation. Already under development in several of the DHBs at the time of the 2009 3D initiative, the concept was incorporated into the Variance Response Management (VRM) intervention of CCDM.

In many implementing DHBs integrated operations has a physical location (much like a control tower) where people in various roles associated with operating the hospital on the day of care are co-located. People located in or close to the integrated operations centre (IOC) include Duty Nurse Managers, DNMs, the Nursing Bureau Manager, Senior Medical Officer Coordinator, Hospital Coordination Unit Manager (or similar), and often the TrendCare Coordinator, and the CCDM Coordinator. These roles are primarily focused on ensuring that all of the shifts over the 24 hours of the day of care are staffed, as well as being focused on ensuring that there is sufficient staff for the next several days. The integrated operations meeting is often held in the IOC office/room, but I have also seen them held in clinical settings such as EDs and acute planning units.

The integrated operations meeting (ideally) incorporates all of the roles listed above. Additional representatives include NZNO (and other unions) delegates and/or organiser, the general manager or business leader on call for the hospital, representatives from hospital departments such as cleaners, radiology, and orderlies, along with the clinical directors for ED, surgery, and medicine, the Director of Nursing, and often the Chief Operating Officer for the hospital. Integrated operations meetings are usually 20-30 minutes in duration and occur mid-morning after the bed meeting (made up of mostly nursing staff, described in the previous chapter). Some of the larger DHBs have another integrated operations meeting mid-afternoon. Although this (idealised) meeting representation does occur in some DHBs, my experience, and that of participants I interviewed, was that this level of representation was difficult to accomplish on this scale, mid-morning, every day.

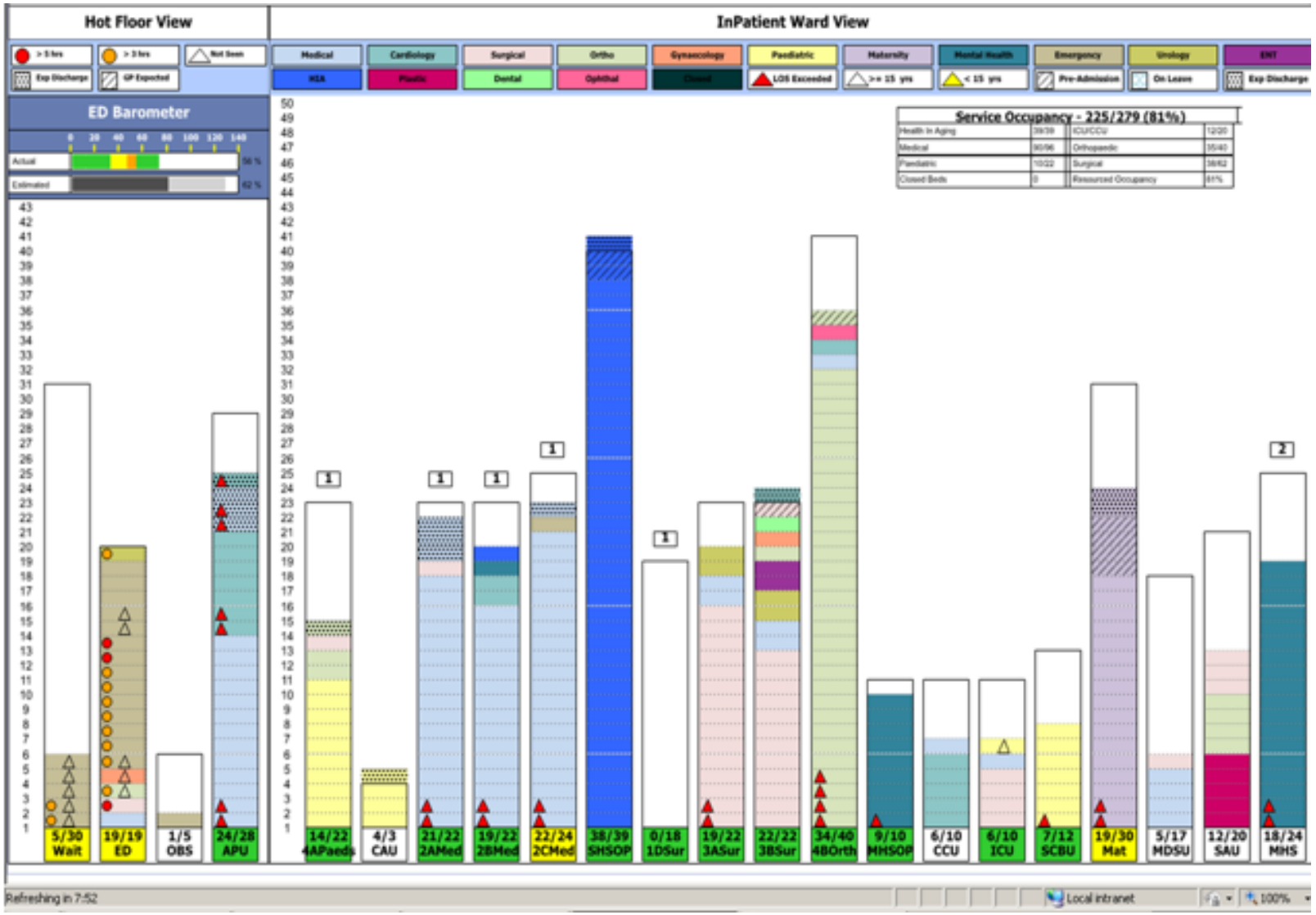
I turn now to describing the capacity-at-glance-screen, then return to integrated operations meetings as an institutional site of reading the symbols and frontline stand-ins on the screen

Features of the capacity-at-a-glance screen

In many integrated operations meetings, attendees are orientated to a large TV screen displaying the capacity-at-glance screen[88], (also called hospital-at-a-glance in some DHBs). The work of the people in the meeting is to collectively assess the variety of abstract symbols on the screen, and discuss and agree on various courses of action. An example of a capacity-at-a-glance screen appears in figure 21 (next page). I will explain the features of the screen, based on my experience of being involved with screen design in numerous DHBs, and my attendance at numerous integrated operations meetings, as well as data about the screens provided by participants.

[88] In the Integrated Operations Centre, IOC, several DHBS are also displaying patient acuity screens, Capplan (a screen displaying current and predicted patient numbers against historical data), electronic whiteboards, the Operating Theatre start and finish time tracker, and the Emergency Department (Monopoly) Board – displaying patients in cubicles, how long they have been waiting, and what they are waiting for in terms of procedures, charting, tests to be completed and so on.

Figure 21 Example capacity-at-a-glance screen (© NZ MoH, 2017)



The unit provides DHBs with a text called *Specifications for capacity-at-a-glance screens,* which script the form, content and purpose of the screens. The screen in figure 21 is a template (rather than an actual screen) used to assist DHBs with screen design. Although there is some variety in the physical layout and content across DHBs, the reading of the screens is organised by a consistent purpose and orientated to accomplish the same outcome across all DHBs. Therefore I use this template to describe these fundamental principles.

The left-hand section of the screen (headed in this case with 'hot floor view') includes the Emergency Department (ED), the ED waiting room, the Acute Planning Unit[89] (APU), and the Observation unit[90] (OU). At the top of this left-hand section the two horizontal bars, called the ED Barometer (or the ED worm as participants described it), provide comparisons of patient numbers presenting to ED per hour on the day of care. One bar predicts patient arrivals based on system-generated data collected over the past two-five years (depending on how much historical data is available), the other indicates the actual number of patients that have arrived. The remainder of the screen depicts (symbolically) the wards of the hospital, coloured bands represent patients in bed and white bands represent the number of empty beds (although not necessarily whether there are enough nurses to cover these beds). Patients are colour coded, making it possible to discern outliers (see chapter 5). The screen also makes it possible to discern the number of anticipated discharges and (booked) admissions. Above some of the ward columns are boxes containing numbers. These boxes depict the number of patients on leave (not physically in the hospital) but still loaded into hospital technologies.

Along the bottom of the screen, the traffic light scoring colour for each ward can be seen. Four of the patient care units are displaying yellow with the remainder displaying green and white (white indicates that the traffic light colour has not been updated this shift). On some screens, the discrepancy between the 'hours required' HPPD

[89] Participants described APU's (and similar units by various other names) as units that receive patients from ED as well as from community GP referrals. These patients are likely to stay for a short period and be discharged home from the APU, or transferred to an elderly care facility. Occasionally APU's will receive patients from operating theatres because there is no bed available in the surgical ward(s). These post-op patients will stay in the APU until a bed is available or until they can be discharged home.

[90] A unit located close to the ED where patients requiring an admission of approximately 24 hours (or less) are admitted to reduce short stays and high turnover in the inpatient wards.

for patient care, and the 'hours available' HPPD for nursing care is displayed beneath the traffic light colour. The HPPD discrepancy is usually represented as a negative number, such as *minus 10* (10 less nursing care hours available than required to meet patients' needs), or as a positive number such as plus six (six nursing hours available above the TrendCare prediction (HPPD) for the shift). Most capacity-at-a-glance screens are described as "live", because they are receiving data directly from TrendCare, and the hospital's electronic patient management system, updating many of the displayed symbols at three to ten-minute intervals.

In addition, the capacity-at-glance screen displays numerous abstracted symbols that meeting attendees must learn to read. Although many of these symbols have an ideological definition, Smith (1990a) says that texts are read and interpreted for particular understandings and relevancies based on the location of the reader. I will show that the institutional location of the reader shapes the interpretation of these symbols and abstractions and can have a significant bearing on the decisions made in the meeting. I move now to the reading of these screens in integrated operations meetings and use participant experience to illustrate how these symbols organise the discussions, decisions and actions that emerge.

The integrated operations meeting as an institutional site of reading

The hours and colour stand-ins produced by technologies frontline nurses enter data into form part of a number of symbols that are read in the integrated operations meeting. I begin with these, and then describe some of the other symbols that are consequential for staffing and nursing workload decisions.

The hours and colour symbols on the screen orientate meeting attendees to prioritise to the largest variances of negative or positive hours and hottest traffic light colours (red being the hottest). Meeting attendees understand (conceptually) that the greater the negative variance (e.g. negative 15 hours is worse than negative 11 hours) the higher the risks to patient safety, and patient outcomes, the higher the risk of error, and the higher level of stress experienced by staff. However, despite the promises of

CCDM, the resources to resolve nursing labour shortages are not always within reach of the integrated operations meeting. Jake, an extra-local nurse leader, explains,

> *"Quite often they're between a rock and a hard place, and it's wrong. They make the best out of a bad situation. If you've got someone in orange and someone in yellow, whatever you are going to do it's going to hurt someone somewhere staffing-wise" (Jake).*

Jake, as a former frontline nurse now in a leadership role, interprets yellow and orange based on his frontline experience. However, membership in the integrated operations meeting means that he is simultaneously orientated to interpreting the implications of widespread short-staffing on hospital performance against the priority targets (detailed shortly). Jake also knows that decisions must be made to address a nursing shortage without *actually necessarily being able to supply more nurses*.

Addressing these nursing labour shortages in the integrated operations meeting involves the discussion of strategies to *manage or smooth the variance*. Managing or smoothing variance involves identifying actual and potential problems with patient safety, bed availability and patient flow. Smoothing variance includes looking for ways to patch holes in staffing, ways to disperse patients and care demands evenly across services, and ways to create more capacity (staffing, beds, resource, and time) in the hospital. The screen provides a conceptual version of variance that is at odds with the actual work of trying to manage variance, as Henry, who attends the integrated operations meeting in his DNM role, explains,

> *"So the problem is trying to manage variance with nothing to manage, so basically what I mean by that is that the base rosters don't match the current workload within the wards. The amount of discretionary effort[91] that's required by ward nursing staff is not there because the goodwill has already been eroded away. The bureau and casual pool are not sufficient to meet the demands of low rosters, and unplanned absences that happen on the day, so whatever casual*

[91] A term that describes the work nurses do picking up extra shifts, working overtime, missing their breaks and going home late in an effort to complete the care patients need.

> *bureau availability you've got goes into filling the rosters which leaves you with no ability to respond to other variance" (Henry).*

Patching staffing, dispersing patients, finding beds and creating capacity are conducted as a virtual exercise in the meeting. However, the actual work of following through on meeting directives to solve the problems in the hospital that day has to be negotiated on a case-by-case basis, usually by the DNM with staff in the ED, and with shift coordinators on each ward as described in chapter 5.

The integrated operations meeting and capacity-at-glance screen are two of many such approaches being used worldwide to accomplish the control tower concept. Such tools are designed to assist problem solving and to gain *situational awareness* of goings-on in the hospital (see Gruebler, da Costa, Righi, Rigo, & Chiwiacowsky, 2018; Levine, Meyer, Brzezinski, Robbins, & Sandberg, 2005; Salas & Dietz, 2011; Rodriguez, Lee, & Makic, 2017 for concepts and healthcare examples of these types of systems). However, in Lucy's experience, as a Director of Nursing, situational awareness and problem recognition often do not result in problem-solving,

> *"The screen data tells us where the problem is, and how bad it is, but the reality is that we cannot fix it because we do not have staff standing around waiting for work" (Lucy).*

Staffing for the possibility of being needed (staff standing around waiting for work) is difficult to predict, and almost impossible to fund in fiscally constrained environments (MacKinnon, 2012). Like Mary, Pamela and Samantha's experiences in the bed meeting (chapter 5), Lucy's experience is that staffing shortages often occur in-the-moment and cannot be resolved on the day of care. Numbers of nurses are pre-set by the ward's baseline rosters[92], and the budget for the day's staffing is already committed. Any variances to staffing budgets, such as arranging for extra nurses or paying for overtime, must be explained and accounted for within managerial hierarchies.

[92] The baseline roster text holds the shift pattern – how many nurses are rostered on for the am, pm and night shifts. Baseline rosters are often determined by the staffing budget for the ward, rather than by the number of patients, their acuity and the nursing work required to meet their care needs.

Managers are responsible for ensuring there are just enough nurses on the day of care, and no more than are required (see Fast & Rankin, 2017 for an example of how these practices are controlled). Taking an interrogative or punitive approach to variances to spending on the day of care is a method of enforcing financial constraint as a priority that subordinates other priorities (see Campbell, 2000). Interviews with integrated operations meeting members identified that some of the problems pinpointed by symbols on the capacity-at-glance screen cannot be resolved because of fiscal constraint, and all meeting attendees are aware of this.

Jack, a DNM, describes how his knowledge and experience of how shifts actually run comes into tension with extra-local managers knowledge about system-generated predictions and omnipresent financial constraint,

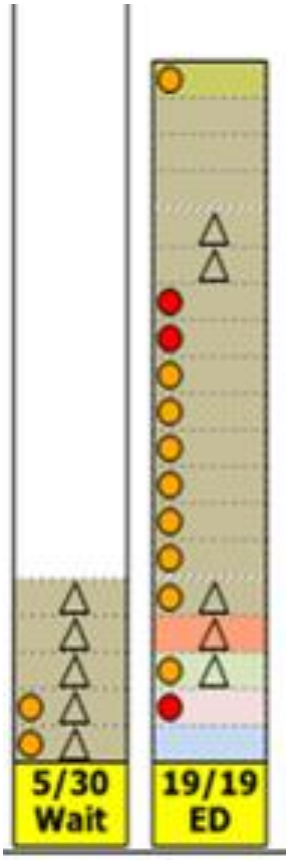
> *"Well, because of financial constraints, these people* [service managers and/or nursing directorate leaders] *have an unrealistic view of planning in a lot of respects. If your ward needs six nurses for a pm shift and you have five they say 'leave it at that'. But I say, more patients are going to come in and they'll say well TrendCare says no we've got enough, 75% or five nurses is fine. But I said, if you look at the Emergency Department's admitting screen I can see we have 110 patients in ED, at least seven of who will come to your ward. I know that I can tell, so if I'm not allowed to have a sixth nurse, we cut capacity to take those people in ED" (Jack).*

It is possible to discern Jack's knowledge, based on several decades of experience as a DNM organising staffing (and many other things) after managers have gone home on the day of care, being over-ridden by institutionally authorised forms of knowledge.

TrendCare predictions have a 12.5% loading, four per cent of which accounts for nurses' breaks and the rest for dynamic fluctuations in patients' needs across the shift. However, this loading and the prediction itself are averaged across the eight hours of the shift as if they were a static straight line. As the shift progresses, patient needs can peak and trough resulting in times when nurses feel there are too few or too many nurses for the work as it is actually happening. As covered in the previous chapter, staffing based on the TrendCare prediction does not necessarily ensure enough nurses for what

actually occurs over the course of the shift, especially if the shift starts with one or more nurse less than the prediction recommends.

Based on his extensive experience Jack knows that what appears to be a match in hours (prediction) at this moment, fails to take into account the patients who will continue to arrive over the course of the shift, some of whom are already in the ED. As well as trying to staff for current and arriving patients, Jack's attention is also on the number of nurses required across the hospital to keep patients moving into the hospital to meet the shorter stays in emergency department target. The ED6 target requires that '95% of all emergency department patients will be admitted, discharged or transferred within six hours'[93]. Although Jack's experience, and reading of a variety of screens, is more closely aligned to understanding what is actually happening in regards to nurses' work, his focus is also being pulled to the problem of targets and patient flow. This focus, I will show, comes into tension with nurses' knowledge and staffing needs on short-staffed shifts.



Orange and red circles – the ED6

Other symbols meeting attendees are orientated to on the capacity-at-a-glance screen are those related to the ED, the ED shorter stays target, and patient flow. Figure 22 (left) shows a detailed section of the ED waiting room and ED on the capacity-at-a-glance screen.

Figure 22 (left) Detail of capacity-at-a-glance screen showing ED and ED waiting room © NZ MOH 2017

On the screen, the ED, and ED waiting room columns contain red circles indicating patients who have been in the ED for more than five hours, and orange circles indicate patients who have been in ED more than three hours. Meeting participants are orientated to these coloured circles as a priority of the

[93]https://www.health.govt.nz/new-zealand-health-system/health-targets/about-health-targets/health-targets-shorter-stays-emergency-departments.

organisation's daily performance against the NZ Ministry of Health's shorter stays in ED target.

Numerous people in a variety of organisational roles are orientated to these coloured circles and are activated to respond to the threat of not meeting the six-hour ED target. Patients identified by red circles, still in the ED at six hours, are labelled *breaches*[94]. The ED and the breach patients in particular, immediately attract widespread organisational attention[95]. Managers begin to call the ED or appear in person to determine the cause of the breaches and to try to facilitate these patients out of the ED.

The capacity-at-a-glance screen enables significant scrutiny and governance of the symbols associated with the ED6. Jack describes being questioned (by service managers/nursing directors) when such breaches occur,

> *"I will get an email saying –why were there 10 patients in ED waiting when our wards were only 88%* [full] *- I said because the 10 patients waiting were all cardiology patients needing monitoring and there are no monitoring beds left thank-you. But you get asked this all the time" (Jack).*

The managers are using the symbols and the imperative of the target to guide the questioning of breaches of the ED6. However, Jack knows the relevant details about each patient and their specific monitoring needs, and this knowledge informs his decision to keep patients in the ED longer than six hours. Jack knows there is nowhere he can safely send the patients to have their specific needs met.

It is this facilitating process of getting patients out of the ED to meet the ED6 target that can result in patients being 'pushed into wards where they don't belong', as boarders/outliers (chapter 5). Alternatively, patients arrive onto wards that are short-staffed, where the nurses 'cannot say no', and must accept additional patients in order for the target to be met. The imperative to meet the target overrides nurses' concerns about the safety and appropriateness of patient placements. This performance

[94] Of the 6 hour target.

[95] Often from the DNM, the hospital operations unit manager, the GM on call for daily operations and the Emergency Department service manager.

imperative sanctions actions that at face value, do not appear to be in the interests of patients or nurses on short-staffed shifts.

Red triangles – patient length of stay and elective surgery targets

On the screen in figure 21, red triangles indicate patients who are occupying hospital beds beyond their clinically and electronically predicted length of stay. These patients are described in the conversations at the integrated operations meeting as patients who have exceeded their Length of Stay (LOS). Meeting attendees know that this exceeded LOS symbol generally indicates a patient experiencing a complication such as a fall or infection that has forced a longer hospital stay than predicted. On occasion, this symbol might indicate a patient waiting in hospital for placement in a rest home bed. The particulars of the patient and the reason for their extended stay are not available to meeting attendees, rather, the symbol (and the number of them) becomes a problem to be solved, because patients identified with the LOS exceeded red triangle are considered to be blocking beds needed for other patients, particularly those arriving for elective surgery.

Elective surgery volumes are another performance target set by the NZ Ministry of Health. Mary, a CNM on a surgical ward says,

> *"It becomes quite messy when you start not meeting those targets. We get paid in advance for the bookings[96] and in arrears for the acutes[97] so we need the cash-flow to keep coming as well" (Mary).*

Mary is identifying that a certain number of booked (elective surgery) admissions must be achieved because surgical budgets are based on the money that is paid in advance for these patients. When LOS exceeded patients 'block' beds allocated to elective surgical beds, or outliers are pushed into these elective beds to meet the ED target, there is a risk that pre-paid elective surgeries will have to be cancelled.

Elective surgery patients may have waited months for their surgery and are understandably upset when someone from the hospital calls to say their surgery has

[96]Elective surgery patients.
[97]Acutely unwell patients arriving via emergency department.

been postponed or cancelled. All participants described going to great lengths to avoid cancelling elective surgery procedures,

> *"I've never seen the bookings cancelled. I've been here for about nine years, so we've never got that busy yet, apparently" (Mary).*

Earlier in our interview, Mary had described an extended period of being minus 15 hours on shifts. However, in her experience, the symbols associated with acute staffing shortages are overridden by the policy-driven imperative to meet the elective surgery targets.

Participants said that in some DHBs, surgeons begin operating on patients on elective surgical lists without the certainty of there being a bed or a nurse available once the surgery is complete. Therefore, finding a bed for the patient becomes a priority that falls to the recovery room nurse and the DNM. Recovery room nurses said that they could see on the capacity-at-a-glance screen the number of beds on the wards, including those that are allocated to elective surgery bookings, and those that are currently empty. Jodie, an experienced recovery nurse, says that every day she wonders,

> *"Where's the bed? Even though you've got all these lists ready for the day there's not enough beds in the hospital. So it's a crisis operation every day. But you don't hear people talk of it as such, as a crisis, but ever since I've been in nursing, and that's a long time, it's always been crisis management and we've never been able to get out of that" (Jodie).*

Competition for beds is a perpetual tension that nurses are orientated to, and organise themselves to resolve. Frontline nurse participants, CNMs and DNMs reported feeling responsible for making sure 'the patient has somewhere to go'.

Integrated operations meeting attendees are using symbolic representations to try to balance the tensions and risks of actualities and ideologies. Participants' experiences identify the commonly occurring actuality of too few beds and too few nurses and the risks this poses to patient care. In the integrated operations meetings, this actuality comes into tension with the policy-driven ideology of the healthcare targets. This tension is significant because each DHB's performance

against the targets is ranked in comparison with other DHBs on publically available websites[98]. Also, several participants talked of DHBs receiving penalties and disincentives for not meeting expected performance against the targets. Although I was unable to find any corroborating textual evidence of penalties and disincentives, the punitive discourse was prevalent in numerous organisational locations, and across numerous DHBs. In short, extra-local managers are orientated to ensuring the DHB does not fail to perform against the targets. The way the capacity-at-a-glance screen is perceived and used as the basis for decision-making in the integrated operations meeting has implications for nurses, nursing work, and patient care (which I will return to shortly).

Analysis

Here I employ some of Smith's (1974 & 1990a), Campbell's (1984), and Rankin and Campbell's (2014) thinking, to unpack how the Capacity-at-a-glance screen displaces nurses particular individual and situated knowledge about each patient and the current shift and supplants it with a virtual, standardised and abstract stand-in.

Capacity-at-a-glance – a virtual reality for institutional decision-making

The people in the integrated operations meetings are reading abstract and objectively measurable symbols as a virtual reality of wards, shifts, staffing and patients. They enter into a relationship with the screen and its many symbols as a version of reality. In her 1974 paper, Smith drew an analogy to Marx's concept of commodification and applied Marx's theoretical framework to the material relations generated by textual facts. Taking up this concept I argue that the people in the integrated operations meeting enter into a reading relation with the capacity-at-a-glance screen, much like a person might enter into relations with a commodity, such as a piece of jewellery. The person's decision-making is based on whether or not the piece of jewellery – perhaps a ring - is worth the price being asked for it. Missing from their considerations are the people whose labour, skill and creativity were elemental to the ring's production. In the

[98] https://www.health.govt.nz/new-zealand-health-system/health-targets.

integrated operations meeting, decisions are made based on symbolic representations from which are missing the specific needs of patients, the pressured and intelligent knowledgeable work of nurses holding things together on short-staffed shifts, and the immediate risks to patient safety. Many members of the integrated operations meeting are not nurses; they cannot 'fill in the spaces' of what is missing from the symbolic representations. They can only access a certain form of knowledge about what is happening based on the symbols that stand-in for the actuality.

The local and particular details of each shift, each patient and each nurse have been processed into these homogenised generic representations; the surgical ward is in yellow, the children's ward is in yellow, the medical ward is in yellow. Each nurse and patient on these disparate wards experience what appears as a generic yellow on the screen completely differently. The risks, suffering, and compromises will be unfolding in a unique and particular context that is not apparent in the symbols and representations of the technologies (see Rankin & Campbell, 2014 for a Canadian example). Although the reading of yellow in the integrated operations meeting does not adequately account for the actuality of individual experiences on these different wards, it *does* have a relevant and meaningful place in decision-making organised by the concept of the integrated operations control tower; it accomplishes an 'alert', a flashing light on the dashboard, indicating that those wards are most likely under pressure.

Smith notes these kinds of virtual and "textual realities are not fictions or falsehoods: they are normal, integral, and indeed essential features of the relations and apparatuses of ruling-state administrative apparatuses, management, professional organizations" (I990a, p. 83). It is via such texts that the organisation, specifically its people, their knowledge and their work, are rendered theoretically discernible, and objectively measurable, and therefore institutionally available for managerial governance (Campbell, 1984). However, as Campbell (1984), and other nurse researchers assert, such textual accounts of frontline nurses' work will always be partial and inaccurate, distorting what is actually happening as nurses know it, rendering only some aspects of nurses' work into objectively measurable forms. It is when this partial knowledge is being relied upon to tell 'the whole story' that the system breaks down. Even when efforts are made to include individual subjectivities, such as the text field that

provides a tick box for 'the clinical judgement of the shift coordinator deems the shift unsafe', these efforts do not balance the overall reliance on the abstract stand-ins to generate managerial knowledge and action.

Taking the capacity-at-a-glance screen as a virtual reality enables certain actions. It is the partial and abstract nature of the screen symbols, and their socially organised hierarchy within the administrative practices of the hospital, that permits certain actions to be sanctioned by integrated operations meeting decision-makers. The integrated operations meeting, as an institutional site of reading, is characterised by a complex intersection of socially constructed knowledge. As this chapter has revealed so far and will continue to unpack shortly, the reading of the screen is undertaken within practices of institutionally organised knowledge about patient safety, performance priorities, fiscal constraint, resource limitations and ideas about efficiency and productivity. It is from within these relations that meeting decision making orchestrates the experiences of frontline nurses. I return to what is happening on short-staffed shifts to demonstrate how virtual realities and socially constructed decisions in the integrated operations meeting orchestrate the experiences of frontline nurses.

How frontline nurses' experiences are put together by decisions in the integrated operations meeting

Jack's experience opens up how the reading of the abstract symbols on the capacity-at-a-glance screen makes it possible to conceptualise patients and nurses as units of time (HPPD), authorising actions that move nurses around to 'plug gaps in hours' on short-staffed shifts. Mary recounts the fears and risks of 'being sent' to help elsewhere as a 'unit of time' helper. I then move to an examination of patient flow as a primary priority of nurses' work organised by the performance imperatives symbolised on the virtual reality capacity-at-a-glance screen. I begin with Grace's experience of navigating a single patient through a cardiac arrest, while simultaneously being orientated to her role of navigating patients flowing out of the ED and into hospital ward beds. Finally, I bring in Samantha's experience, to demonstrate that the primacy of patient flow has colonised nursing work to the extent that there are now officially titled '*patient flow*' roles for frontline nurses.

Moving 'hours' around – bits and pieces of nursing care

The abstractions of TrendCare and the virtual reality of the capacity-at-a-glance screen render the specific needs of patients and the skills, knowledge and experience of nurses into objective units of time. This objectification allows for decisions that 'patch holes' in staffing. Jack, an experienced nurse and DNM, describes how this has changed how nurses are organised to work,

> *"When I started* [as a nurse] *you came on shift, you got your patients, you did your eight hour shift. At the end of the day, you said goodbye to your patients and you went home and thought I've done a reasonable job with those people. Nowadays, nurses are getting moved around in like blocks of two hours here and one hour there" (Jack).*

Moving staff to short-staffed shifts is a long-standing practice of DNMs. However, historically, the nurses usually went for a whole shift, and, where possible, were placed in a ward where they felt competent to practice, were familiar with patient conditions, the ward environment, practices and protocols. Over the last ten years, Jack has heard the discourse of patient acuity, HPPD and variance talked into existence. The Variance Response Management (VRM) intervention of CCDM advocates moving staff for between one hour and eight hours to alleviate pressure points (such as meal breaks). This fractured nursing care, in which patients are moved around between nurses, and wards is consequential to patient outcomes and safety because aspects of care are missed and patients 'fall through gaps' in care (Aiken, Clarke, Sloane, Lake & Cheney, 2009; Brandis, Rice, & Schleimer, 2017; Brooks Carthon et al., 2019). In addition, these fracturing practices break down what; Weiss, Malone, Merighi & Benner (2002) describe as familiar and relational knowledge exchanges within nursing teams. Not only has this 'bits and pieces' practice reorganised what happens for nurses (and patients), but also what happens for DNMs.

Duty Nurse Managers have taken up both the organisational targets and patient flow, as well as the practice of moving staff around to patch staffing gaps as expressions of their professional work. Nurses (each nurse's labour) is objectified into the metrics of time (hours). This move to a nurse being constructed as 'hours' is happening in many

countries (see Toffoli, 2017 for an Australian example), and makes possible the practice of filling staffing gaps with hours, rather than with the specific knowledge and skill set of a nurse. Jack describes the practices he observes,

> *"One of my colleagues is a bit of a watchmaker and she moves people around like that cos she can" (Jack).*

The conceptualised idea of moving 'hours' around is adopted by some DNMs quite literally. The abstract symbols on the capacity-at-a-glance screen, and in the ward's TrendCare screen, identify where there is a shortage of hours and where there are (so-called) 'surplus' hours. Some extra-local managers are orientated to making these surplus hours more productive by moving them to an area of shortage.

The practice of moving hours around is not without implications, for nurses and for patients. Jack brings into view what this practice organises for the people involved,

> *If you're short of an eight hours of a nurse in a ward they'll get some help from somewhere for an hour and some help from somewhere that's a bit quieter. So they can come over for an hour so basically you're short of one eight hour shift and you're trying to patch it up with bits and pieces of people. It's just like trying to make a shirt out of seven different bits of multi-coloured fabric. It's sort of a shirt but not really" (Jack).*

In Jack's experience, there are consequences to this fragmented approach to patching hours with bits and pieces of nursing care. Much of nurses' critical and responsive intercession work relies on familiarity, knowledge of, and experience with the patient and their condition. Not only does this fragmented approach diminish nurses' satisfaction by reducing the opportunities for building rapport and relationships with patients (and families), they are often working in unfamiliar settings, with unfamiliar patients and conditions, which is potentially consequential and certainly stressful for both patients and nurses.

Many participants described their concerns for patient care as a result of these bits and pieces approaches to staffing. Jack recounts a recent occasion when a patient fell through the gap created by this strategy,

> *"This person was sleeping but they were a Type 1 diabetic and they'd been given their insulin but no-one had had time to feed them. So quietly their glucose* [was dropping], *I think it was 1.1 when we got her. And you know her blood sugar trended down, people thought oh well she's just dozing off, old ladies do doze off. Well not this one, so the fracturing of care and the pressure of time means stuff doesn't get done. Someone has correctly identified the patient and checked the charting of insulin and given it but there's no-one to make sure the patient has eaten three-quarters of their dinner" (Jack).*

In the scenario, Jack was describing how two different nurses from other wards came to provide bits and pieces of patient care. Mealtime fell between these two blocks of staffing help, and the dietary staff took the tray from the sleeping woman's room, most likely without lifting the lid to see if the food had been eaten. During their short episodes of deployed hours, the visiting nurses may have been given a task list to complete (as per chapter 5). It is unlikely they would have received a comprehensive handover or had time to examine the patient's notes, or TrendCare patient type categorisation, in any detail. This type of piecemeal care (as Jack describes it) generate risks and oversights that have serious consequences to patients' wellbeing. Although the incident is forefront in Jack's account of the types of things that go wrong, there are likely other consequential oversights, so ordinary as to not be noticed, but that nonetheless can have implications for patients, and for the nurses accountable for their care (see the research on missed and rationed care, and care left undone).

'Near-miss' scenarios, such as the one Jack describes, are stressful for patients and nurses, and contribute to nurses dissatisfaction with and concerns about patient care under short-staffed conditions, especially where nurses experience short-staffing as the 'new normal'. Jack interprets his role as one that balances the need to facilitate patient flow, and meet the targets, with a somewhat protective role that recognises nurses are being expected to work under degraded conditions[99]. He describes how he tries to achieve a balance between these expectations and priorities,

[99] Short of staff, short of supplies like essential equipment, short of medications required on the shift.

> *"We'll just leave it for a bit. Let the dust settle. So that's part of me having a good relationship with them* [the ward staff] *and if you ask them to do a bit extra they'll be helpful. If I keep the pressure on all the time, saying sorry mate six-hour rule, numbers, numbers, I won't have a good relationship with them and they won't be as helpful and I wouldn't blame them either. I won't ask them to do what I wouldn't have done myself" (Jack).*

Cognisant of the nurses' concerns, and having experienced many such scenarios like the one above, Jack said he tries not to run out of strategies for getting the balance right between the targets, patient flow, safe nursing practice and patient safety. However, as Henry and Jake noted (in the previous chapter), some days there are no resources other than the nurses already on shift to use as the means of managing the variances and staffing gaps. Under these conditions, nurses are sent to other areas to help.

The experience of 'being sent' to help elsewhere

On occasion, nurses on a shift (even one that is short-staffed) may be expected to go and help-out a ward with a more extensive staffing shortage (such as minus 15 hours). Nurses' experiences of 'being sent' to work in another area were characterised by statements of feeling unprepared, unsafe and anxious.

Nurses' concerns were specifically associated with being unfamiliar with patients, their conditions and their medications, as well as being unfamiliar with the layout of the ward and the location of essential supplies. Nurses' primary concerns were with making a mistake that harms the patient and threatens their professional safety. Mary, recalling her work as a frontline nurse, describes her experience,

> *"I didn't like that vulnerable feeling where I was out of my comfort zone 'cos I didn't know how to look after those patients. I didn't like not working with my colleagues and I didn't like the lack of continuity with patients that I had been caring for" (Mary).*

In our conversations, nurses agreed in principle with the idea of going to help colleagues and helping to keep patients safe in other wards that were short-staffed. However,

almost all shared stories of feeling vulnerable as individuals and professionals and of being anxious about making a mistake that was harmful to patients.

Nurses described the experience of being sent to work elsewhere as unpalatable. Both in my experience as a CCDM programme consultant, in research interviews, and in the literature, nurses describe being sent (or floating as it is described in the american literature) as personally and professionally threatening, and fraught with risks for patients (O'Connor & Dugan, 2019). The VRM intervention of CCDM includes several strategies to try to make being sent (moved around as hours) more tolerable. When I was in the CCDM consult role, I taught the VRM intervention extensively and focused on the 'logic' that it *makes sense to work the nurses who are already at work*. It is hard to argue with this (apparent) logic. However, what I heard from nurses contrasted this idealised view of being moved around. Nurses described the negotiating, persuading, and sometimes threatening behaviour that occurs to accomplish these moves.

Nurses professional ethics are engaged by the assertion that it is their *duty of care* to work on another ward if asked because patients would be at risk if they do not go. It is almost impossible for nurses to argue with this professional and moral appeal, regardless of what they know about the challenges of being sent to a stressed, unfamiliar area, and their capacity to practice competently and safely. In my experience in numerous meetings around the country supporting the implementation of VRM, this particular VRM intervention has organised an increase in the amount of movement of nurses as 'hours' occurring in DHBs implementing CCDM. This assessment of an increase in being moved around was borne out by nurse participants' experiences.

Moving hours around was geared towards patching staffing gaps, trying to achieve patient safety, and minimising patient delays that interrupt patient flow. Patients must be kept moving in order for the targets to be met, beds to be cleared and reoccupied, and to ensure that every patient 'has somewhere to go'. In order to achieve performance against central policy targets, patient flow has become a dominant and taken for granted feature of frontline nurses professional work. In the next section, I use participants' experiences to demonstrate the primacy of patient flow work, and the creation of patient flow roles for accomplished, experienced, senior frontline nurses.

Patient flow - a moment of divided consciousness

Grace works in a medical assessment unit[100]. This unit receives patients from the ED, and via direct referral from community General Practitioners (GPs), for assessment and stabilisation before admission to hospital wards (or discharge). There is a high turnover of patients in this unit, and many are acutely unwell and needing substantial investigative and stabilising interventions. In our interview, Grace described a scenario which exemplified the tension between her professional accountability for patient safety and her simultaneous orientation to patient flow as nursing work,

> *"….there's a cardiac arrest in our area which draws in essentially all of our resources because we are often just working with three nurses….so that's pretty much all of your resources involved in either the cardiac arrest or everything else that's happening in the unit. You might have one nurse floating, so in that time we would say to the emergency department just – doors are closed, just give us 30 minutes to…obviously to finish the situation whether the outcome be the patient moving up to higher level care or perhaps becoming palliative. The consequences of even just delaying or stopping patient flow for 30 minutes* [in an attempt to save a life] *can really upset the entire rest of the day for the emergency department, for the medical assessment unit, and for the wards as well. Because their flow is stopped…..So there are huge implications of doing that and especially if we delay patients exiting from the emergency department, it does create quite a problem" (Grace).*

In the moment of crisis, as a patient's heart stops beating, Grace and her two colleagues apply their professional knowledge, skill, experience and expertise to what is, for the patient, literally a life and death situation. There is both a professional and organisational expectation that Grace and her colleagues would prioritise in this way. However, simultaneously, Grace's other 'very real concern' is for 'allowing' a disruption to patient flow to happen. She feels professional accountability for 'creating quite a problem' for

[100] Essentially the assessment of new medical admissions to the hospital.

the rest of the hospital by suspending patient flow for the 30-minute resuscitation attempt.

The conceptualised institutional understanding of 'patient flow' intrudes on nurses focus on patients specific needs in the moment of care. It is also prioritised to the point where it speaks over the situated knowledge of nurses about the limits of their ability to provide safe care in their current environment. Grace provides an example that was echoed in almost all frontline participants' experiences,

> *"The duty manager just lost it. She said 'I don't care how many staff you've got, or how many beds you've got, these people have to go somewhere because we have to clear the ED and meet the target" (Grace).*

In Grace's experience, and that of other frontline nurses organised by the reading of the virtual reality screens, the symbols associated with patient flow, particularly the red circles associated with the ED6 target, over-ride the other symbols pertaining to hours (HPPDs) and traffic light colours. Participants' experiences indicate that the various symbols on the screen do not have equal status. However, all of these symbols appear to have more status than the situated intelligence of the nurses on the short-staffed shift.

Meeting the ED6 target and facilitating patient flow through the hospital often begins in the ED. In some DHBs, a specific titled role associated with patient flow has been established for senior frontline nurses.

A Patient Flow Coordinator

Samantha, an experienced frontline nurse, is frequently rostered into the *Patient Flow Coordinator* role in the ED where she works. She takes for granted the fact that this role is an essential part of accomplishing the work of the ED. Samantha explains that in all NZ EDs, the activities of patients, nurses and others, are organised primarily by two (textual) imperatives. The first is the Australasian Triage Scores[101]. These scores are attributed at triage based on the severity of a patient's illness or injury. In turn, these

[101] For more information on the Triage scores visit this website https://www.health.govt.nz/our-work/hospitals-and-specialist-care/emergency-departments/emergency-department-triage.

scores determine the order in which triaged patients are admitted to the ED, and seen by an ED doctor (see Melon, 2012 and Melon, White & Rankin, 2013 for institutional ethnography projects and publications specific to EDs). The second text organising what happens in the ED, and elsewhere in the hospital, is the NZ Ministry of Health (MoH) ED6 target (covered above). These two texts, arising in authoritative research and central policy, organise a senior ED nurse's efforts to juggle multiple patients and organisational priorities.

Samantha's description of her work in the ED highlights competition between different sources of knowledge. Samantha's professional knowledge of specific patients' needs, and threats to patient safety caused by short-staffing in the ED, are in competition with her institutionally organised knowledge about the ED6 target, and the shortage of beds in the hospital,

> *"Trying to meet targets for the Ministry of Health is…..it's a number and they don't look at the rest of what's going on. Like having a new hospital with less beds was not a smart idea and yes patients don't stay in hospital as long but…..it still means that you have people in ED for much longer and the backlog effect is crazy. So you could have patients in the waiting room, you could have 15 patients waiting to get in to the department because it's full because of that backlog then you have nurses who are stressed because they're looking after the three patients in the corridor and four patients of their own. You know that kind of thing isn't safe" (Samantha).*

Reduced bed numbers in hospitals are driven by the efficiency orientated ideas of NPM. Hypothesised reductions in the numbers of patients needing hospital admissions (Araz, Olson, & Ramirez-Nafarrate, 2019; Reinhardt, 1996,) do not reflect what the nurses in NZ EDs and hospitals are actually experiencing. In Sept 2018, NZ's 20 DHBs were $240 million dollars overspent. Although the current Health Minister attributes this to years of underfunding[102] by the previous government, DHBs are also reporting unprecedented,

[102] The current overspend is attributed to higher than planned for patient numbers, the nurses pay and conditions settlement, outsourcing of personnel, outsourcing of clinical services, clinical supply costs, infrastructure costs and unmet savings.
https://www.nzherald.co.nz/health/news/article.cfm?c_id=204&objectid=12128639&ref=rss

and unplanned for, numbers of patient admissions to ED and hospital wards (Akoorie, 2018). Samantha's experience, like that of other participants, shows a chronic shortage of beds in the face of staffing shortages and high patient numbers which contributes to backlog and necessitates a professional nursing role devoted solely to patient flow.

Samantha understood that the Patient Flow Coordinator role was established to ensure the ED6 target was achieved on a daily basis. Samantha describes the work she does when rostered into this role,

> *"Taking phone calls for referrals of patients who are coming in from the GP, we chase up any doctors who haven't given plans or we try and escalate things outside of ED to try and get people out of ED with the duty nurse manager for the hospital.* [We] *also try and assist staff as needed to get patients ready for going to the wards or maybe being able to be referred to a speciality. It's just a lot of phone calls in the end or talking to the nurses in charge of the wards and liaising with the duty nurse manager and trying to really problem solve getting people to beds where there might not be any beds" (Samantha).*

At first glance, Samantha's work in this role seems predominately administrative and logistical dominated by phone calls, conversations, reading charts, and updating whiteboards and electronic systems. However, there are numerous aspects to the work of this role that I argue could only be achieved with the situated knowledge, expertise and experience of an accomplished frontline nurse.

Samantha's description of her work identifies that she can make use of the textual technologies available to her to access the whiteboard and/or the TrendCare screen of the ward she wants a patient to go to so that she can make her own assessment of bed numbers, staffing and patient acuity. She can interpret the capacity-at-a-glance screen (or similar dashboard) and identify beds for patients needing to 'board' somewhere in the hospital until beds become available elsewhere, and use her knowledge of each patient to help determine the most appropriate ward for each patient to wait. Samantha can read each patient's chart and know whether all of the diagnostic tests have been completed, and relevant decisions and plans have been written into the patient's notes.

When she calls the ward to negotiate a patient move, Samantha knows whom to talk to and what to say to try to negotiate patients into ward beds. Using her situated knowledge about a patient's specific needs she can talk to the ward nurse about the care the patient is likely to require over the next 4-6 hours, what medications are due, and what procedures are outstanding. Samantha also uses the imperative to meet the ED6 target as leverage to put pressure on doctors to write patient plans[103]. However, she states that she must do this in such a way as to not be 'a nurse telling a doctor what to do' (see Campbell, 2000 for more on how nurses perform their gendered work within the frame of medical hegemony). Samantha can also expedite a treatment plan by inserting an intravenous access device, giving a dose of antibiotics, requesting an x-ray, and talking to the patient about the ward they are going to and what will happen once they get there.

The primacy of patient flow has organised, not just a pervasive consciousness and a number of official roles, but also an extensive amount of work into the everyday practice of frontline nurses. Nurses have been organised to take on this work as if it is theirs to do, when, in fact, the practice of patient flow offers many opportunities to examine whether it is patients interests that are being served. I have presented two experiences of the primacy of patient flow. One that intrudes on nurses' consciousness and actual bodily work with patients, and overrides all other considerations of manageable workloads and patient safety, and one that brings into view the extensive, complex, intelligent and accomplished work nurses are performing as part of their patient flow work. In the next section, I consider the implications of these two experiences. First that this extensive and accomplished patient flow work covers over fractured and sped-up care processes, while remaining institutionally invisible and therefore not factored into staffing decisions on the day of care, and second, that the over-riding primacy of patient flow is consequential to patient care.

[103] A written plan in the patient's notes about the antibiotics charted the observations that are to be completed over the next 6 to 8 hours, the diagnostic tests to be performed, or still pending.

Patient flow on short-staffed shifts and the consequences for patient care

In Grace's experience, and that of many frontline participants, patient flow geared towards achieving performance targets resulted in patients continuing to arrive onto wards that had indicated they were short-staffed. As more patients continue to arrive, the demand for care increases, as does the nursing work to be done. However, no more nursing time, skill, or knowledge is made available, and therefore, compromises are inevitable,

> *"I did two blood transfusions, they were very poorly supervised. I know what the policy says about doing a blood transfusion. I know that I am meant to sit with the patient for the first 10 minutes. I know the risks, and yet I hung the blood and thought – well I'm still in the room – sometimes I have my eyes on you and sometimes my back is turned but I am in still in the room – it was enough for me to morally go, I'm covering that one and I'm still getting other things done at the same time" (Grace).*

Participants said that they must continue to take patients even when they are unable to complete care for the patients they already have. When the care to be completed is compressed by time, complexity and volume, then the skilled and intricate cognitive work of adapting must be done to either reduce the quality of what can be achieved, or determine which aspects of care to sacrifice (see Krichbaum et al., 2007 for research on the effects of complexity compression in nursing work).

Hollnagel (2009) uses the term efficiency-thoroughness trade-off (ETTO) to describe the perpetual and often unconscious adaptive work that frontline staff do to navigate the gap between work as imagined (blood transfusion policy), and work as done (actuality of having too many patients to adhere to the policy). This adaptive activity is designed to 'make things work' in practice. Adaptive work, which is dynamic and responsive to moment-by-moment change, requires 'time to think' and 'time to do', (Hollnagel, 2009) in order to increase the likelihood of accomplishing professional and organisational goals. I have shown that time to think and time to do is eroded on short-staffed shifts, compromising the quality of what can be achieved and forcing the

conditions under which nurses must make sacrificing decisions about patient care (see also Park, Hanchett & Ma, 2018).

There is a growing body of research describing the impact of sacrificed care on patient outcomes (Ball, Murrells, Rafferty, Morrow, & Griffiths, 2014; Papastavrou, Andreou, & Efstathiou, 2014), and on nurses professional and moral satisfaction with their work (Vryonides, Papastavrou, Charalambous, Andreou, & Merkouris, 2015). Care activities such as grooming, updating documentation, mouth care, and the interval between turns for pressure area care are among the needs that cannot be met under short-staffed and degraded conditions (Papastavrou, Andreaou, & Efstathiou, 2014). These decisions cause professional conflict for nurses; they are cognitively, professionally, and morally taxing.

Care sacrificing decisions contradict nurses' understanding of their accountability for patient safety and safe care environments according to their professional competencies. Nurses feel forced to make sacrificing decisions because of the conditions created by short-staffing and the relentless flow of patients. Nurses experience resentment and distress at the risks these decisions pose to patients and their professional qualifications and accountabilities. However, although these decisions are morally/professionally conflicting, and contradict espoused professional and organisational accountability for patient safety and complete high-quality care, short-staffing establishes the conditions under which nurses must determine what aspects of care can be sacrificed or reprioritised to a later shift. This highly cognitive decision-making relies on nurses' situated and professional experience and knowledge, as well as familiarity with each individual patient.

Short-staffing and patient flow erode time to think and time to do, as well as the necessary familiarity that is critical to this adaptive compensatory work of nurses. However, both patients and managers rely on nurses to undertake this adaptive reprioritising work designed to compensate patients for eroded and fractured care processes, in order to try to maintain patient safety and hold flawed care systems together. From participants' experiences and my own, I argue that this extensive and accomplished nursing work, critical to patient safety, is invisible to institutional measures,

missing from official accounts of patient care and from many of the nurse safe staffing project tools.

The work nurses do to organise patients for patient flow

In Samantha's explanation of her role as the patient flow coordinator (above), it was possible to discern the extent of her knowledge and skilled organising work. Work that involved organising the placement of patients in the ED, and the priorities of care for her patient cohort, other nurses to get their patients out of the ED, inserting lines, ordering X-rays, facilitating conversations with the DNM and receiving wards negotiating patients and boarders into beds, as well as organising doctors to help with the goal of meeting the ED6. Here, I talk about Samantha's, and other participants' work of organising patients for patient flow. Samantha says,

> *"I do the front of the line talking to people, explaining the process, explaining the wait times, explaining what is going to happen" (Samantha).*

Samantha knows that because of the ED6 some patients are going to be moved out of the ED without completing their workup for diagnosis, and potentially into a ward to wait for a bed elsewhere.

From her experience, Samantha knows that these sped up and incomplete care processes can cause anxiety for patients and families, and, on occasion, distrust or anger about whether their particular and specific needs are being met in pressured and poorly explained processes. Her efforts are geared towards teaching patients about how the system works and why things happen as they do, performing the work of a system interpreter (Weiss, Malone, Merighi, & Benner, 2002). As part of this work she may explain the triage scores, how patients are queued in the ED waiting for doctors or diagnostic procedures, the fact that the patient will be 'moved on' to a ward within six hours, that it might not be where they ultimately end up, but it will get them 'into the system'.

Once the patient arrives onto a ward (either for boarding or home ward admission), nurses are also preparing each patient for patient flow. Pamela says,

> *"At the point of admission to the ward most patients are given an 'expected date of discharge' and instructed to ensure that someone will be available to collect them before 11am on this day, and provide any support they may need at home" (Pamela).*

In many DHBs, patients are told that if they cannot be collected by 11am on the day of discharge they will be sent to the discharge lounge to wait because their bed must be made ready of the next patient. In these ways, patients and families are also being enlisted in the institutional primacy of patient flow.

Conclusion

The contribution of this chapter was to trace the frontline stand-ins of hours and colours into a setting of institutional reading, and back to the organisation of frontline experience. I have shown that the capacity-at-a-glance screen is taken up as a virtual reality for decision-making and that there is a hierarchy to the abstract symbols on the screen that prioritises some over others. I have shown how these prioritisations sanction authorised decisions and actions in the integrated operations meeting that are consequential for nurses and patients.

The abstractions on the screen sanction 'moving hours around' to plug staffing gaps, a practice that can fracture patient care. Wards that appear on the capacity-at-a-glance screen as short-staffed must continue to receive patients in order to meet institutional targets and accomplish the primacy of patient flow. I have shown that nurses are troubled by competitive tension between their professional knowledge about patient safety and complete patient care, and institutional knowledge that prioritises performance targets and patient flow. I have uncovered some of nurses' organising work designed to accomplish patient flow, and provided examples were this is consequential for patient care. I argue that this organising work not only gears nurses towards institutional performance goals, but also constitutes a form of adaptation to degraded care conditions, and the sped-up and fractured care processes caused by the primacy of patient flow. It is this work that I argue is both accomplished and institutionally invisible.

The next chapter continues to follow the hours, colour and REF stand-ins generated at the frontline into another institutional reading associated with annual cycles of data auditing, FTE calculations, and budgeting for staffing. In this second organisational setting of reading, aggregated forms of the frontline stand-ins again intersect with institutional discourses and priorities. Emulating the format of chapter 7, I will trace decisions made in this setting back to the frontline to uncover how they put together frontline experience and organise frontline care settings in consequential ways.

Chapter 8 – Knowledge in aggregation

Aggregated stand-ins and annual budgeting for nurses

Introduction

The previous chapter traced the frontline stand-ins of hours and colours into the integrated operations meeting as an institutional site of reading, and the capacity-at-a-glance screen as a virtual reality for staffing decision-making. I uncovered the prioritisation of some screen symbols over others that organises the way frontline experiences are put together, and are consequential for nurses and patients. Also revealed was the extensive and complex organising work nurses are doing to achieve these priorities, adapt to pressured and degraded conditions, and compensate patients for sped up and fractured care processes.

In this chapter, aggregated versions of frontline stand-ins are traced into the CCDM council and the reading of nursing FTE calculation reports. Here, the second reading of the stand-ins as documentary realities intersect with multiple discourses and institutional priorities. I provide a participant's account of a reading of an FTE calculation report and bring into view two outcomes, consequential to frontline nurses (and ultimately patients), that are sanctioned by the CCDM council's socially organised reading.

Table 9 Glossary for chapter 8

Care Capacity Demand Management Council	A group established to govern the implementation of CCDM into each DHB. Made up of DHB and union representatives as well as an invited CCDM Consultant from *the unit* Abbreviated to the council
CCDM FTE calculation software (shortened to CCDM FTE software)	An online system into which aggregated patient acuity data and other data sets are entered and produce a detailed calculation of staffing models by ward, day of the week, and by shift. The calculation accounts for different nursing skill levels (new graduate versus expert nurse), and incorporates staffing for all leave entitlements
CCDM FTE Calculation report	A report generated by the CCDM FTE calculation software to be tabled at the council for discussion. Abbreviated to CCDM FTE report

I begin with a summary of how the frontline stand-ins of hours, colours and REFs are aggregated and used in relation to calculations for nursing FTE. I then move to describing the CCDM council as an institutional site of reading these aggregated forms as part of the CCDM FTE report.

Aggregation of frontline stand-ins

Inherent in the technologies in which the hours, colours, and REFs are created is the ability to aggregate the data into weekly, monthly and annual accumulations. This capability enables a CNM to determine how many medical patients (for example) with an HPPD of 4.46 were cared for on the ward over the last year. The CNM can also access a report on how many times the traffic light colour screen displayed green or yellow status. This aggregation may enable her to see a recurring trend of yellow status on a Thursday afternoon that coincides with her knowledge about two surgical lists on that day that result in multiple post-op admissions to the ward after six pm. The CNM can (in theory) also access a report of how many REF reports associated with staffing have been generated over the last year by frontline staff on her ward.

These aggregated data sets of the frontline accounts are used in two separate aspects of the annual FTE calculation and budgeting process. The CCDM FTE software (employed to produce the CCDM FTE report) relies on aggregated hours (HPPD) data, as well as several other sets of aggregated data (described shortly). Aggregated traffic light data and aggregated REF report data are not entered into the CCDM FTE software, nor do they routinely appear in the CCDM FTE report. Rather, these two sets of aggregated frontline stand-ins are usually included in a separate text such as a business case for more nursing FTE that follows the reading of the CCDM FTE report.

In practice, extra-local participants' attempts to access and use these aggregated forms to augment claims for more nursing FTE were problematic. Later in this chapter, I focus on the aggregated data used in the FTE calculation software and report, but here I offer examples of how the REF report system's built-in processes circumvent the use of the data for staffing conversations. Lucy, a nursing leader, told me that she had requested aggregated data on REF reports to support a business case for more nursing FTE. Because Lucy is not routinely notified of these REF reports, she relies on the

administrators of the REF system to provide her with a summary of the number and content of the REF reports. Lucy was told by a system administrator that there had been less than five REF reports completed by a particular ward, which contradicted her experience from talking to the ward's nurses. David's experience offers some insight into how these incongruences occur.

David, an NZNO staff member and council member, was seeking a record of the number of staffing related REF reports lodged by frontline nurses to augment staffing conversations in the council meeting. He says,

> *"I asked for a report on how many staff have put in short-staffing RISKPRO[104]. Answer, none! Because they'd all gone through as patient not staff and there was none" (David).*

David is describing a built-in feature of the RISKPRO system used in one of the DHBs where he is a member of the council. The built-in feature sorts REF reports according to the main institutional category. He goes on to say,

> *"They've told me that there's no short-staffing and yet I can't go to a ward without being hammered about how ridiculously short-staffed they are. I've got documentation which shows five times in five shifts they were short-staffed and they've written complaints saying that" (David).*

However, David has learned that if REFs are lodged as risks or harm to patients (which many nurses do, as this seems to garner organisational attention), they are separated from staffing related REFs and protected by patient confidentiality. As a result, they are not counted in total staffing related REFs, and the details of the report itself cannot be accessed to determine if staffing was implicated. In this way, both Lucy and David have discovered that REF reports nurses have been taught to complete when reporting safe staffing as a risk to patient safety cannot easily be used to augment a case for more nursing FTE.

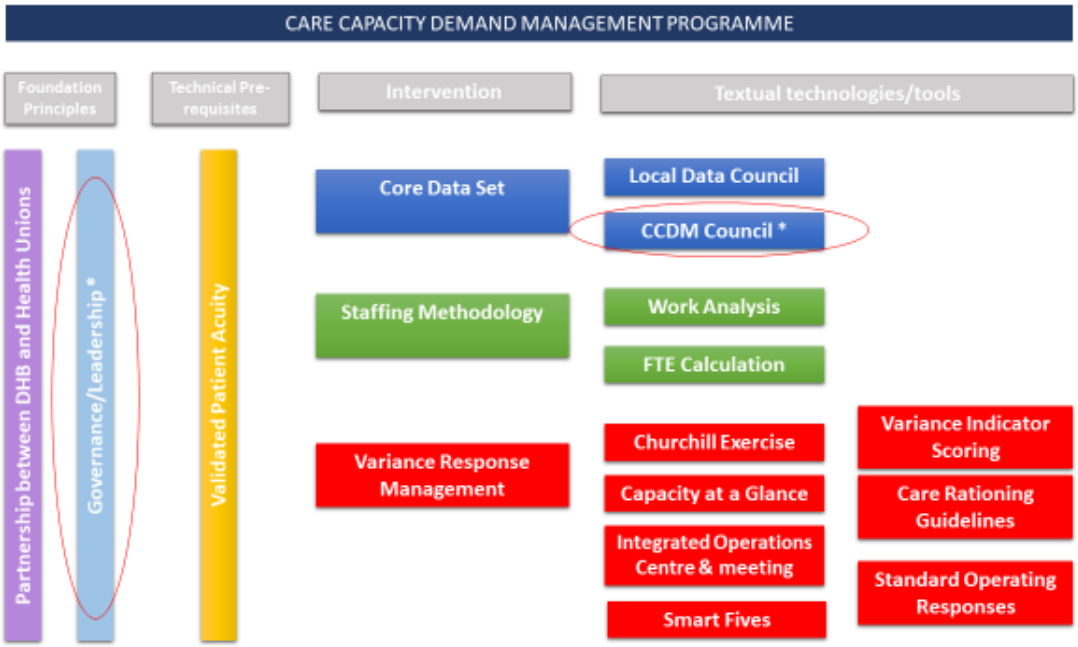
[104] Recall from chapter six that RISKPRO is one of many electronic risk and REF reporting systems used in some NZ DHBs.

Inconsistencies between what frontline nurses are saying, and what 'evidence' can be accessed from aggregated versions of frontline textual accounts are a feature of conversations and debates in the council meeting. Here I briefly introduce this meeting, membership, and work, as an institutional site of reading and discourse associated with annual FTE calculations for frontline nursing staff.

The (CCDM) council

The council structure, membership, and purpose is socially organised into DHBs by the agreement to implement the CCDM programme, and a number of texts supplied by *the unit*. The CCDM website describes the council as 'the mechanism for hardwiring effective Care Capacity Demand Management'[105]. In Figure 23 below, the red ovals outline the governance/leadership bar as a foundational organiser of the entire programme. It is this organisational structure that coordinates the council's direct connection with data for monitoring the processes and outcomes of CCDM implementation.

Figure 23 CCDM Programme detail of bipartite governance and council



[105] https://www.ccdm.health.nz.

Membership of the council is scripted by a text called the CCDM *council Terms of Reference* (ToR) (provided by *the unit*) and should (ideally) include representatives from the health unions, DHB (multidisciplinary) executives, along with information systems, human resources and communications representatives. Service level representation invariably involves business managers, CNMs, and NZNO delegates from a range of services and the TrendCare coordinator, and CCDM coordinator. These many and varied representatives, organised into a single decision-making setting, bring to the table the socially organised discourses and knowledge of their institutional location.

In these *unit* texts, the council is conceptualised as a permanent structure responsible for active and ongoing governance of the CCDM programme implementation. The work of council members involves governing a significant number of texts[106], and textual processes associated with several years of CCDM programme implementation. Decisions made by the council are significant and consequential for people located from the executive to the frontline. The council usually meets monthly for one-two hours, with an extensive agenda pertaining to multiple aspects of programme implementation, including the capacity to produce patient acuity data, and the progress of implementation of programme interventions.

The council's reading of CCDM FTE report accomplishes the most generalised organisation of the experience of frontline nurses and many others at different organisational locations. To provide some background to the account of the reading of a CCDM FTE report, I use participants experience to bring into view how staffing decision-making was undertaken in NZ DHBs prior to and during the early stages of CCDM implementation.

The calculation of nursing FTE – past and present

In the several decades following the NPM management reforms in the NZ health sector, the calculation of nursing FTE was characterised by efforts to meet the needs of patients and wards within the ward's existing budget for staffing. Calculating and budgeting for nursing FTE was undertaken by business analysts, and CNMs were often

[106] 103 public facing texts on the CCDM website script the implementation of the CCDM programme.

provided with a budget and FTE total, and expected to 'make it work'. Marion, a Nursing/Midwifery Director, recalls,

> *"In one of the larger wards, you might have seven nurses on a morning shift, six nurses on an afternoon shift and four staff on a night shift. So, that was what it ended up being and that was what a charge nurse was allowed to recruit to. Nothing more, nothing less" (Marion).*

Budgeting and staffing solely for nursing numbers on shifts failed to recognise the requirement for nurses to take annual leave and education leave, nor did it account for staffing gaps caused by short notice sick leave.

A direct result of adhering to only staffing the baseline roster to cover shifts, was that many nurses could not take leave, and there were few nurses available to fill gaps on shifts caused by short notice sick leave. Marion says,

> *In essence,* [they] *stripped out the bulk of leave provisions. All the leave provisions were taken out and calculated as a whole into another big bucket elsewhere in the ether. So there was some provision around use of bureau resource for sick days in the moment on a particular day, but it wasn't enough" (Marion).*

Marion's DHB, under what she describes as 'huge financial stress', elected to try to save money by stripping out the nursing FTE that would allow nurses to take leave, resulting in Marion's DHB having among the highest rates of accrued leave balances[107] for several years running. Numerous participants identified that nurses accrued annual leave totals are a performance measure that DHBs are assessed against nationally. Generally, accrued leave balances in excess of 200 hours were seen to be a financial risk to the organisation[108], (in Marion's DHB some nurses had 400-500 hours of accrued annual leave owing). Managing accrued leave totals, within parameters set by DHB cost control measures, is a performance indicator for CNMs.

Covering gaps in shifts caused by short notice sick leave is another challenge all DHBs face on the day of care. Wards and services collect data on their sick leave rates,

[107] Accrued leave balances are made up of the number of days or hours of annual leave nurses are entitled to. If they are unable to take leave these leave balances can accrue up to hundreds of hours.
[108] Accrued leave hours must be paid out to the nurse if she leaves the organisation.

often calculated as a percentage, and use the percentage data as part of the calculation of FTE. However, in Marion's experience, staffing decision-making is orientated to organisational averages as a means of accounting for sick leave,

> *"I spent years in regular meetings with the operational team every 2-3 weeks. The operational people would* [only] *agree to a straight average of the numbers. So, the organisation as a whole, our average that we work towards across the board is roughly three percent* [sick leave], *So, where you've got a ward that's 10% or 15% running with a straight average* [of 3%] *it's not going to work. We agreed to a very small increase (0.4%). I just said to them – well I'm glad we've reached a decision but I can tell you now that it 'aint going to work, but at least we've come up with a decision after two years of wrangling" (Marion).*

This extensive time consuming and frustrating work was apparent in many extra-local managers' accounts of trying to negotiate leave totals that reflected reality rather than a fiscally constrained and standardised ideal. Participants in roles similar to Marion said that once these sick leave average percentages were set they became a performance target that CNMs were assessed against. Marion said that commitment to implementing CCDM 'solved' some of these debates for her by setting national standards for how these data sets were to be negotiated and applied to *the unit's* FTE process.

Although DHBs who adopted the CCDM early have been completing FTE calculations according to *the programme's* stipulations, it is only since 2016 that FTE calculations could be undertaken using *the unit's* CCDM FTE software[109]. Extra-local participants all agreed that the software has been a major breakthrough and has made a significant contribution to the pace and ease with which FTE calculation processes can be accomplished,

> *"The processes for the calculations are a lot easier given that we just have to provide the unit with some core information and then all the calculations happen in the ether, in the cloud. Then the unit comes back with a report that interprets*

[109] Prior to 2016 the FTE calculation was a significantly more complex process involving numerous disjointed practices, and often taking many months or years to achieve.

the data as opposed to us putting hours and hours and hours in from our end" (Marion).

Marion said that she anticipated the FTE calculation would make up for what she described as '10 years of grave-slippage' on staffing in her DHB. She says that early estimates, based on the FTE calculation methodology, are that Marion's DHB will need to recruit between 40 and 50 new nursing FTE. This number is required to meet the acuity needs of patients, as well as account for sick leave and entitlements for education and annual leave agreed in the enterprise bargaining collective agreement text (called the MECA[110] agreement). While some problems may have been solved for extra-local managers/leaders, the FTE calculation process organises two significant and far-reaching outcomes that are important to outline here.

The first outcome is that adoption of the FTE calculation process commits DHBs (at least textually) to budgeting and staffing in reverse of their historical practices where nursing FTE numbers were determined by the budget. Instead, agreement to implement the CCDM programme, and access to the highly desirable CCDM FTE software, requires DHBs to generate massive volumes of system-determined patient acuity data, use actual (or more accurate averages) for sick leave percentages, as well as budget and staff for all leave entitlements[111]. In my experience, this change to FTE calculation approach and budgeting practice can take between several months and several years to negotiate.

The second and most consequential outcome of adopting the CCDM FTE calculation approach, is that nearly every frontline nurse in every hospital in NZ must now incorporate the generation of patient acuity data into their everyday work. The implications of these outcomes, and other discursively organised knowledge associated with staffing will be the analytic focus of the remainder of this chapter.

The FTE calculation process and report

In the following section, I briefly outline the FTE Calculation process, and the resulting report to be read by the council.

[110] Multi-Employer Collective Agreement.

[111] Agreed under the enterprise bargaining processes and enshrined in the Multi-Employer Collective Agreement, MECA (June 2018-July2020).

The unit's 'standard operating procedure roadmap' for the FTE calculation process details the numerous people and groups to be involved in the process. This work includes attendance at 15 workshops and reading 43 texts that script the stages and decision-making required at each step. The roadmap is too dense to detail here but includes processes such as an audit of the required aggregated data (patient acuity HPPD, nurses leave entitlements, average sick leave percentages), negotiating who will undertake the calculation[112], and who will have access to the software during the calculation[113]. This negotiation reflects the (idealised) commitment of the DHBs and the NZNO to work in an inclusive partnership on the FTE calculation. Once the data is ready, undertaking the calculation itself, using the software system, can take as little as 2-6 hours per ward.

The CCDM FTE software then generates a report. This report accounts for the data entered into the calculation (type and quality), tests a variety of FTE scenarios across each shift (e.g. is it better to have six nurses or seven nurses on shift on a Thursday afternoon?) to better match nursing numbers (skills and experience) to patient numbers and acuity. The report also produces an FTE recommendation, for the ward, unit, or service, that accounts for the nursing FTE to meet all patient numbers and needs based on aggregated patient acuity data, to cover all annual and education leave entitlements, and to cover sick leave (if this is not to be covered by the hospital's casual nursing pool). The CCDM FTE report is then tabled for the council to read. The following section provides a participant's account of a reading of this report by the council of her DHB.

'Well that can't be right' - the reading of an FTE report

Alice, a nursing leader[114], describes a recent council meeting in which a CCDM FTE report was tabled for council deliberation,

> "*In a recent meeting, we were reviewing an FTE recommendation report. We hadn't been told by the CNM of this ward that there was a problem with FTE, so*

[112] Usually the CCDM Coordinator for the DHB, but it may be a business analyst, service manager of charge nurse manager.
[113] This may include the NZNO Organiser and/or Professional Nurse Advisor, a service manager, the Director of Nursing.
[114] Clinical nursing leader, Associate Director of Nursing and/or Midwifery.

> *the report recommendation of six additional FTE for that ward was a bit of a surprise, to say the least. The first response of the manager above me was 'well that can't be right - how can we have a report that says we need an additional 6 FTE if we didn't already know there was a problem in that ward?' The immediate assumption made in the meeting was that there was something wrong with the data that had been entered by the nurses. So, for the next few days there was quite a significant interrogation of the data in the report against the ward's data in TrendCare. This particular manager has a good understanding of TrendCare, so she did a knowledgeable job of really digging down into the detail of the data. At the next meeting, she said that the data appeared to be accurate. That she couldn't see any obvious flaws in the data, therefore the finding that the ward is short six FTE must be accurate. The CE then said, 'well if that's the case, and six FTE is what we need in that ward, we will do it incrementally and put those FTE in over the next several budgeting rounds but before we implement the second tranche of FTE, we'll run the data again just to confirm that they're still needed'" (Alice).*

Two features of this account are characteristic of my experience, and that of many extra-local participants, when reviewing CCDM FTE reports in council meetings across NZ. Where the CCDM FTE report indicates a need to increase the number of nurses, the first feature is the immediate assumption that the data on which the report is based must be flawed, necessitating an investigation of the data, and often, the frontline nurses who entered the data. The second feature is the decision to stage budgeting for, and employment of, the required additional FTE over several budgeting rounds[115]. I trace these features into organisational conversations and frontline experiences, demonstrating that they are socially organised by institutional discourses and practices associated with abstraction and measurement, and of fiscal constraint. I will show how these institutional relations are consequential for frontline nurses and care environments.

[115] Budgeting rounds are generally based on the financial year (July 1-June 30). Several budgeting rounds could mean that it takes two or more years to budget for and employ the additional FTE.

'*There must be something wrong with the data*'

Of the data that makes up the report, leave entitlements under the MECA agreement, and DHB average percentages for sick leave are deemed objective. It is the patient acuity data entered by frontline nurses that is invariably called into question. Almost all participants across multiple settings and levels of each organisation were connected by a discourse of concerns about the accuracy of patient acuity data.

In chapters 5 & 6, I showed that frontline nurses want the patient acuity data to reflect the care time individual patients actually require. Frontline managers, TrendCare coordinators, and CCDM coordinators are aware that these concerns of frontline nurses can manifest in practices such as 'padding' the data. Such practices influence the interpretation of data accuracy and trustworthiness by extra-local managers. Discourse that questions the accuracy with which patient acuity data represents nurse staffing requirements establishes a precedent that makes disputing the data possible. This is particularly so when the CCDM FTE recommendation is uncorroborated by other knowledge (as was the case in Alice's account) and/or comes into conflict with knowledge discursively organised by policy, as was the case for David.

David is a member of several CCDM councils. In his experience, FTE calculation recommendations, although they may reflect the FTE shortage for the ward in question, come into conflict at the level of the council with other discursively organised knowledge. David says,

> *'This* [FTE calculation] *shows me I need 10 FTE in surgical. I don't have the budget for 10 FTE. I'm not going to bug the Ministry of Health* [for] *dollars, it's just not there. So, at that point Health and Safety is fully responsible and the data shows there's nothing we can do about it, and we're not going to do anything about it, 'cos we can't. So what am I going to do? I'm going to make sure that data is not valid. Because at that point I'm not going to allow the CEO and the full management board to be accountable with absolutely no way of fixing it. So we'll do exactly what every other DHB round the country is doing, it's going – 'oh we don't believe the data'" (David).*

At the level of the council, the discourse of 'there is no more money' (either in the DHB budget, or available from the Ministry of Health) leads to council members *knowing* the CCDM FTE recommendation cannot be met, either quickly, or at all. At the same time, the Health and Safety at Work Act (2015) carries the potential for DHB Board member liability for harm caused by known risks not addressed within an agreed timeframe. Therefore, in David's experience (and that of other extra-local participants) at the council, the inability to seek budget increases from central government, and concerns about conferring liability on the DHB CEO and Board, results in the accuracy of the data being disputed. David's conversations with his colleagues on other councils around the country confirms his understanding that disputing the data is a widespread practice.

New Zealand Nurses Organisation employees, undertaking the work of encouraging frontline nurses to take up the production of patient acuity data, experience the disjuncture of having the data disputed in the council meeting. David says that he has no recourse when the data is disputed,

> *"We don't have any way of pushing this data other than embarrassing them in the media and their way out of that is to just rubbish the data" (David).*

In David's experience, and that of other extra-local participants, disputing or rubbishing the data on which FTE recommendations are made, disables the recourse of the NZNO and nursing leaders to establish agreement for increasing nursing FTE. The substantial knowledge and work, of hundreds of people involved in producing the data and the CCDM FTE report, is obliterated by the negation of the data in the documentary reality of the report. As a result, councils that cannot afford the increases the report recommends have no other recourse than to question and interrogate the data. This practice slows down the responsiveness of the organisation while the data is made more trustworthy.

'Hiding behind the data' and slowing down FTE responses

Nursing leaders find themselves at a line of fault between competing knowledge, which is brought into view in the following account of Marion's experience,

> *"We can do things with TrendCare already telling us what the staff do. We already know whether they're orange or red by sometimes listening to what the staff are saying, but we're not listening, and we're choosing not to listen, and we can also hide behind this tool as an excuse not to give. We can procrastinate and say – you need to do this before we can give you FTE – and that's a year down the track. And a year down the track it can be worse" (Marion).*

Marion knows which wards are short-staffed in her hospital, and she knows that the CNMs know exactly what they need to resolve short-staffing. She also knows that by signing up to implement the CCDM programme the DHB has committed the organisation and almost every frontline nurse to constructing short-staffing knowledge according to CCDM stipulations. Marion also knows about the substantial pressure all managers are under to manage fiscal constraint and find ways to save money, reducing the possibilities of solving what she described earlier as ten years of "grave slippage of staffing" in a single budgeting round.

Jake brings into view his knowledge, constructed by both CCDM discourses and his experience as a nursing manager, about the need to produce data in a form that is accepted by managerial decision-makers as valid. He says

> *"I'm not disagreeing with that* [the production of the data] *because it validates the evidence that's already there* [nurses' knowledge] *and for the executive, absolutely, that's what they want to see because it is public money that is being spent. Absolutely, we've got to be financially aware and warrant spending someone's* [taxpayers] *money" (Jake).*

The logic of producing evidence to justify the spending of taxpayer-funded public health money is powerful and indisputable. However, Jake is also aware that producing nursing evidence in these objectified data forms speaks over what frontline nurses and ward managers already know, and slows down the response to solving the problem. He says,

> *"You click on Trend Care it* [says] *you're down two FTE, the nurse manager will already tell you we're down two FTE or close to it. Then you've got this other tool* [the traffic light colour] *to tell you you're down two FTE and if you look at the financial budgets it will say you're over your budget variance by two FTE" (Jake).*

Jake goes on to say,

> *By the time you have all the data, the part ones[116], some VRM* [traffic light] *stuff, you've got the TrendCare up to scratch and done the part two's* [FTE calculations], *it can be two years…two years could have gone by,…two years to prove what the CNM already knew" (Jake).*

The necessity to generate knowledge about FTE needs, in objectified forms, slows down both the production of knowledge in this 'validated' form, and the corrective actions to rectify FTE shortages. The second feature of the council's reading of the CCDM FTE report was the decision to take a staged approach to correct the staffing shortfall.

Taking a staged approach to budgeting for and employing nurses

Responses to nursing FTE deficits in the CCDM FTE report vary across councils and DHBs, but all are organised to discuss and debate the cost and time implications of trying to resolve the shortfall. Some DHBs elect to announce their nurse-staffing deficit, along with the details of the money and short term plans to address the shortfall (Kai Tiaki New Zealand, 2017/2018). Others add the required FTE as a line in the budget for the ward, and begin recruitment, which according to participants, often takes many months to complete. In my experience, some DHB leaders elect not to release the details of the actual numbers of shortfall even to their own council members out of concern for (what they consider) unreasonable expectations on the council to rapidly resolve the shortage. Regardless of the approach taken at the local level of councils, the talk and knowledge of all councils is held up against the ruling relation of the funding envelope the DHB receives from the Ministry of Health. How this funding will be divided across the many services, workforces and wards of the DHB is detailed in the DHB's District Annual Plan (DAP).

[116] Now called Work Analysis - a textual process of the CCDM staffing methodology that identifies the ideal skill mix for a ward.

'No fat in the system'

The DAP details the obligations, expectations and goals of DHB performance against the budget they have been provided[117], effectively, where the money has already been committed. There is little, if any, recourse within the committed budget to plan for and employ significant additional FTE – this is how the budget works. Natasha, with many years of experience on councils and with the FTE processes, explains what she knows about why the majority of DHBs cannot quickly or completely address nursing FTE shortages. She says,

> *"DHBs are so under the financial pump and they're so used to accounting in creative ways. Comments that I've had recently when we have been undertaking FTE calculations is – 'we know this is the right thing to do but if it comes up with the wrong number* [one we cannot afford to correct] *we're going to have to make savings elsewhere in order for this to happen'. I don't think there's that much fat in the system that it can actually cut anything else without it just leaving a hole somewhere else. For instance, I sat at a council meeting the other day in a DHB that's actually going really well with the* [CCDM] *programme, but the CFO was still allowed to sit there and say – well if the FTE calculation shows there's an FTE hole, that's up to the service directors to see where they can make savings to fill that" (Natasha).*

A contradiction comes into view between what the council has committed to by undertaking the CCDM FTE process and the accounting systems, budgeting processes and fiscal constraint under which they are expected to operate. There is no expectation among the council members that the identification of a significant shortage of nursing FTE will be accompanied by the money required to address it. Instead, responsibility for the nursing FTE deficit is pushed onto service level and frontline managers with the expectation that there are financial savings to be made from reconfiguring services, workers and their work (this reality has spawned a current

[117] According to the DHB chief executives I spoke with these obligations, expectations and goals account for all but 2% of the total budget available to the DHB.

literature on 'models' of nursing care to integrate lower-paid personal care workers to supplement the expensive professional workforce).

"If you want more nurses, you will have to stop doing something else"

The discourse characterised by statements such as 'there is no more money' and that 'nursing FTE shortfalls can only be corrected by compromising services elsewhere' was pervasive and widespread in the talk of council members and extra-local participants. Bruce's knowledge and experience as a service manager is organised by the same discourse. He says,

> *"Any increase in staffing requires money for that staffing to come from somewhere else. There is no more money, so staffing increases have to be funded by stopping something else" (Bruce).*

The experience of all participants who were council members was that there was no point, nor the likelihood of success, in trying to seek more money from the state to increase nursing FTE beyond current budgets. It becomes a taken for granted assumption that savings and creative solutions are to be accomplished from within existing resources.

"Look at whether they need to improve their practice"

In addition to the expectation that nursing FTE shortages would need to be resolved from within existing resources, opportunities for efficiencies and productivity were also central to how decision-makers responded to the CCDM data. Recall the Chief Executive in Alice's account saying that before the second tranche of FTE were recruited (to meet the identified FTE shortfall) there would need to be a reassessment of whether they were still needed. For Marion, this expectation organised her into interrogating the practice of nurses on a particular ward, in order to provide additional evidence that the nursing FTE shortfall was legitimate. Marion says,

> *"I wasn't allowed to put in any (business) case until we'd done the review* [TrendCare data and FTE calculation]. *So that was the CEO basically said I'm not going to increase the staffing until you've done the review and you find out what's*

going on and to have a look at whether they need to improve their practice" (Marion).

Managerial assumptions, organised by NPM ideas, anticipate that there are financial productivity efficiencies to be gained from the scrutiny and reconfiguration of nurses' work (for a Canadian example of how this happens see Rankin & Campbell, 2006).

Managerial accountability for ward and service level budgets organise the constant quest for productivity efficiencies. Management ideas about the need for fiscal control of the health professions, organises service managers, nursing leaders and CNMs to constantly seek opportunities for efficiency gains in the work of frontline nurses. When nurses resist this scrutiny and reconfiguration they may be labelled 'self interested' and 'patch protecting' in an effort to prevent erosion of their professional jurisdiction (see the research of Dent & Barry, 2004; Weinberg 2003; Gordon, 2005 for examples of this phenomenon occurring internationally).

Within the dominant approach to knowledge about expensive nursing labour, the most effective way to recoup the cost of increasing FTE is to render nurses' work calculable (via workload management tools and numerous textual accounts) and reconfigure their work to accomplish the necessary efficiencies. More patients occupying unfunded 'overcapacity' stretchers tucked into areas that are not designed for patient care, faster patient turnover through care pathways with tight discharge targets, acuity moderated staffing and system-generated targets for waits and discharge from EDs are all being engineered into frontline work under the auspices of efficiency. These strategies are attempts to force improved productivity and cost-saving efficiencies (see examples in Melon, White & Rankin, 2013; Corman & Melon, 2014; Fast & Rankin, 2017).

Analysis

Frontline nurses are organised into the extensive work of textual construction of abstract stand-ins for their knowledge and work while simultaneously being expected to maintain their critical intelligent intercession work under degraded conditions. I make use of several institutional ethnography concepts, text-reader conversations and institutional circles, to extrapolate the organising relations of institutional discourses and actions that have come in to view from participants' experiences.

The council's text-reader conversation with the CCDM FTE report

Smith (1974) asserts that facts are not an intrinsic property of the text; instead, 'facticity' is granted by the reader. Whether they accept or dispute the recommendation, council members are organised to receive the CCDM FTE report as the facts about staffing shortage in a given ward by the agreement to implement CCDM. The council's knowledge, as readers, is institutionally organised, (fiscal constraint, fixed pre-determined budgets, objective measurement, performance targets) as well as textually organised by texts specific to the data in the CCDM FTE report provided by TrendCare Australia, and *the unit*. TrendCare's Gold standards (2016, supplied by and used with permission of TrendCare CEO Cherrie Lowe), identify the standard data must meet in order for organisations to be able to maximise the usefulness of the systems reports and functions. *The unit's* 'Validated Patient Acuity Standards' (2017, supplied by *the unit* and used with the permission of the SSHW Governance Group), detail the standard patient acuity data must meet (regardless of the system in use) to be able to utilise all of the tools of CCDM and fully implement the programme.

The CCDM FTE report is not *what happened*; the actuality in 'its raw form' (Smith. 1974). Rather, the report becomes an account 'detached from its material ground' (Smith, 1974) from which the immediacies, suffering, compromises, and consequences of short-staffing are absent. Frontline knowledge and experience, and the detail of nurses intelligent work, is subordinated to what is there in the CCDM FTE report. It is this abstracted and objective detachment that makes it possible for committed, well intentioned executives to focus on the accuracy of the data and the absence of funding to invoke strategies that fail to resolve the immediacies of short-staffing.

Textual chains and institutional circles

I have shown over this and previous chapters that frontline nurses data entry practices are extensive, policed and corrected, and that they serve institutional interests. Once a DHB commits to the implementation of CCDM, they also commit almost every frontline nurse to the production of patient acuity data, and the practice of 'actualising every patient, on every shift, every day'. Not only must this data production work be

accommodated into their everyday practice, nurses must also be prepared to be audited, corrected, and (on occasion) reprimanded. Producing these textual abstractions connects frontline nurses with extra-local managers in a discernible textual chain. I have shown that all along this textual chain the abstractions produced by frontline nurses opens aspects of their work to scrutiny, correction, and control. Before any nursing FTE are supplied on the basis of frontline stand-ins and FTE reports, I have shown that nurses' work is already being brought into line with institutional interests. Interests such as performance targets, and professional accountability for being measurable, efficient and productive by being moved around as 'hours' to resolve staffing gaps, and facilitating patient flow (chapter 7).

Nursing FTE cannot be increased without objective and abstracted data to provide 'evidence' of the shortage. If the data is interrogated and cannot be disputed, then for many DHBs their knowledge of budget limitations and fierce competition for resources organises slow staffing responses. I argue that frontline nurses are caught in an institutional circle they cannot escape. On every shift, and every patient, nurses are producing the data they are taught is required to authenticate their knowledge of the need for more staff. Having committed to 'playing their part in increasing staffing' with daily data entry, many frontline nurses will wait up to two years or longer for the increases in staffing numbers they know are required. In the next section I illustrate how the textual chains and institutional circles associated with the CCDM FTE report, and its reading in the council meeting, orchestrate frontline experience.

How decisions in the council meeting organise frontline nurses' work

In the following section, I trace the sanctioned actions that I have tracked from council decision-making, back into the work of nurses. I argue that these sanctioned actions, and what they organise into nurses everyday work, have consequential outcomes for nurses, patients, care environments, and organisational performance.

'Monitoring and correcting nurses'

Socially constructed knowledge about the primacy of accurate data to underpin the FTE calculation authorises corrective action. Henry, a former TrendCare and CCDM

coordinator, adopted this corrective action as part of his everyday work. His goal was ensuring the *accuracy* of the data with a view towards supporting an argument for more nursing resources. Describing how he accomplishes these corrections, Henry first describes how he monitors the Trendcare data being entered by nurses,

> *"The first thing* [at the start of the day] *would be getting into Trend Care and just making sure that everything looked okay" (Henry).*

Henry's scrutiny allowed him to look at how each nurse's hours were accounted for in the TrendCare staff allocate screen,

> *"So go in through the allocate staff screens which I suppose now looking back at that sort of thing in hindsight, was quite good because it was almost like doing an audit every morning of the allocate staff screen and making sure it was accurate and reflected the roster which was in the background" (Henry).*

Using the electronic roster loaded into the background of TrendCare, Henry can see whether all of the hours available (eight hours per nurse) have been allocated correctly. Has the shift coordinator allocated coordination hours, is the nurse going off the ward to access an implanted intravenous device elsewhere allocated the time she was off the ward and unavailable to her patients?

Henry then described how he applied his subjective assessment of what was happening with patients. Textually generated through patients' clinical records and distant from the nursing actually occurring, Henry was confident he could 'match' the patient to the nurses' data entry to ensure accuracy.

> *"Then going through all the in-patient shift data screens, and just making sure that they felt right. More often than not I could look at an in-patient shift data screen and think – it doesn't look right"(Henry).*

If Henry identified an inaccuracy in the data collection, he focused on the abstract "category" of patient and followed up with the unit,

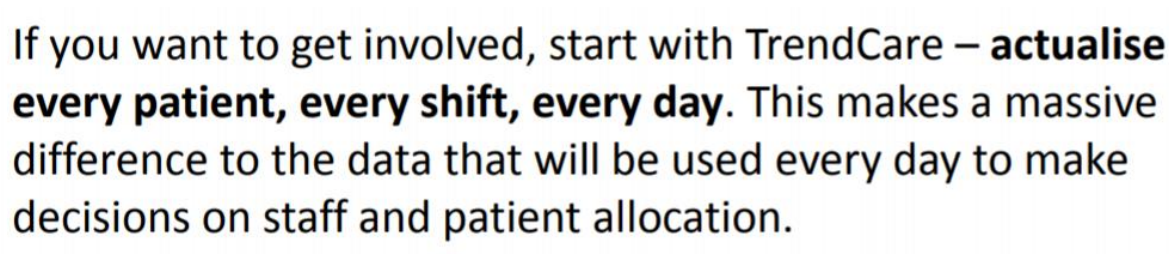
> *"So then it would be just a quick phone call to say – is this patient in the right patient-type? So a good example would be a high dependency surgical patient*

that's only got one hour 55 minutes of acuity predicted – straight away that's a red flag, patient's in the wrong patient type" (Henry).

Inside Henry's socially constructed framework of abstracting nursing knowledge into and out of the Trendcare data, he is committed to ensuring the data accuracy in order to improve its veracity for the council. He believes that accurate patient acuity HPPD data is how nurses will get more FTE. Henry's actions appear congruent with the interests of frontline nurses. He knows that if the data were perceived to be incorrect, then the FTE recommendation would be considered flawed and subject to challenge. In this way, accountability for generating accurate data so that extra-local managers can decide whether a ward will get more nursing FTE is transferred into the work of frontline nurses.

The overall belief and trust in the CCDM programme, to represent and address nursing staffing, is taken up within active 'marketing' of the system into the work of nurses. Textual resources on the CCDM website, and in the texts provided to the council, reinforce the message about the value of patient acuity data. This marketing is developed to enlist nurses to produce this data by 'playing their part' in solving the risks and concerns of short-staffing, Figure 24 (below) is an example of the marketing messages of the programme from the CCDM Website.

Figure 24 Example of marketing and enlisting text from CCDM Website



Frontline nurses are organised to produce patients and nursing work within the framework and constraints of system-generated knowledge. They are organised to trust the system's capacity to make a 'massive difference'. They begin to shift their trust from their experiential professional situated intelligence towards trust in the numbers and colours of the programme technologies. The recruiting texts promote the technologies within an understanding that if enough accurate data is collected, then short-staffing will be resolved. The implication is that if nurses 'actualise every patient every shift, every

day' that this work will result in the additional FTE that nurses know they need and, in some cases, have been seeking for more than a decade.

Some standpoint participants remained sceptical. Grace describes the content of an enlisting poster on the wall next to the computer where she and other nurses enter their TrendCare data. Grace says that the poster's message equated nurses' failure to actualise patients with a shortfall of 0.2 FTE in the annual calculation. Grace recalls the poster's message,

> *"One medical patient not actualised per shift is 0.2 FTE per year – so we have this message that says that we are responsible for this but I don't know that anyone believes it anymore because staffing hasn't changed – it's like they are dangling this little carrot and making it our fault" (Grace).*

Despite frontline nurses experience to the contrary, the *promises* that accurate data will deliver responses to nurses' concerns continue to be textually and discursively worked into nurses routine thinking and practice. Nurses now hold themselves accountable for generating the data that will result in more FTE, while at the same time, experiencing little, if any, change to the staffing of the ward. Despite these contradictions, nurses continue to devote their scarce time to complete the textual accounting practices constructing the documentary reality of patient acuity and abstracted knowledge about staffing.

'Making sure all the accounts line up'

Frontline nurses accountability for accurate staffing data entry extends beyond TrendCare. Grace describes how across the textual technologies of CCDM and the Nurse Safe Staffing Project (hours, colours, REFs) nurses are expected to generate multiple texts that create a congruent picture in the data of things going wrong with staffing,

> *"We have a risk man – so that's our risk reporting software, and within the risk reporting software you can acknowledge other circumstances…..that helped foster that event and we would then be able to tag that to our VRM and say we'd acknowledged these, this is what we were working with and this is the situation that's happened. So it is all linked together. In the same breath if something like*

> *that was to happen and we were reporting that the patient fell because there was not enough nursing supervision and we hadn't acknowledged on our VRM* [traffic light colour] *that we were struggling for nursing numbers, then that really does become a big conversation when that risk man is being evaluated. Because they'll look at that information and look at how we said the unit was coping, so we need to make sure that all of the information marries up" (Grace).*

Constructing these various texts and paying attention to their congruence across multiple different systems and readings constitutes significant expectation of frontline nurses. Some extra-local participants disputed that nurses' data entry work constituted a substantial intrusion on their patient care work. However, this fails to consider not just the physical work and time involved in completing these texts, but the mental work that goes into translating a specific event into several different institutional forms that generate multiple textual accounts that are congruent with each other.

Nurses are *doing* the work of caring for an individual patient who has fallen and been injured, while simultaneously translating the incident (traumatic for patients, families, and nurses) into institutionally organised forms. They are considering the institutional language they have been taught to use, whom the texts go to, and what the repercussions might be, not just from the incident itself, but the ramifications of inadequate or incorrect documentation. Nurses are organised, and organise themselves, into completing and accepting these institutional textual forms as 'the way things are done' to activate the necessary responses. It is via the construction of these institutional accounts that nurses are hooked up into institutional processes, discourses, and practices that, in turn, circle back to contest their knowledge and control their work.

The production of accounts is a part of the continuous enterprise of formal organisation and presupposes a taken for granted knowledge among account producers that "this is how things get done" (Smith, 1974). In this and the previous two chapters, I have shown how the texts associated with patient acuity and Nurse Safe Staffing Project organise nurses into producing abstract accounts of patient's

needs, and professional situated intelligence. Nurses learn that these translation activities are their contribution to solving short-staffing. Nurses have taken up this textual accounting work, with some disquiet, but (mostly) in good faith that their interests, and those of patients, will be served. With few exceptions, the majority of NZ's frontline nurses are still waiting for the promises and tangible outcomes to materialise. In the meantime, nurses are expected to adapt to degraded conditions where staffing shortages are not, or cannot be, resolved on the day of care nor within a single annual budgeting cycle.

The effects of staged FTE increases and the ceaseless quest for efficiency

In participants talk, the powerful and unassailable logic that there is no more money for increasing FTE permeates every budgetary conversation from the funding envelope for the entire DHB, to ward level team meetings. This knowledge runs alongside the implementation of an expensive, highly sophisticated system to establish scientific evidence about nursing labour resources. Data from the CCDM programme technologies are consistently refuted by hospital executives who are socially organised to understand that nurses will continue to 'cope' and that more efficiencies can be generated out of direct nursing practice. As I have demonstrated, these beliefs about nursing and its expense, organise practices associated with drip-feeding nursing FTE, and persistent attempts to garner financial efficiencies and savings out of care environment supplies, processes and frontline nursing work. Using frontline nurses' experiences, I have shown *how* persistent, unresolved, and degraded staffing and working conditions are maintained. In the next section, I use local and extra-local participants experience to identify what these practices are accomplishing,

'Their elastic has been stretched and it's not going back'

In conversations about the working environments and working short-staffed, participants consistently claimed that funding was the root cause of degraded conditions. Against this taken for granted backdrop of inadequate funding, essential resources, and nurse staffing, Melissa, an NZNO employee, bears witness to nurses' accounts of chronic shortages and unreasonable expectations. She says,

> *"Funding! It's what it comes down to – there isn't the money to renew the equipment, get more or new equipment, get your staff. There are huge issues with staffing. But they still hear 'this patient needs to come to you, they need looking after'. So they miss breaks, they go home late, not all the time, but in some areas it happens frequently, it's almost an expectation. So when they do have a good shift they don't recognise it because their elastic has been stretched and it's not going back" (Melissa).*

In Melissa's experience, even when shifts did appear to be adequately staffed, nurses continued to express concerns about short-staffing, inadequate environmental supply, high patient acuity and workload pressures. Melissa's conversations with nurses identified that they were so used to working under these degraded conditions, that have become the new normal, that they have reset nurses' expectations of each shift.

These degraded conditions and their effect on nurses is reflected in nurses' work with patients, and on their own wellbeing. Melissa says,

> *"It's workload issues, and part of that is the volume of stuff that comes in, you know errors that are made, staffing issues, that have caused people to go over their sick leave, so had actually made them ill, you know we have people* [nurses] *actually resigning on health issues" (Melissa).*

Numerous studies link nurses experiences of chronic short-staffing, pressured/unreasonable workloads, and concerns about patient safety to burnout (see for example Aiken, Clarke, Sloane, Sochalski, & Silber, 2002), moral distress, (Rathert, May, & Chung, (2016), and ethical dilemmas (Suhonen, Stolt, Habermann, et al., 2018; Vryonides, Papastavrou, Charalambous, Andreou, & Merkouris, 2015). The combination of relentless pressure for productivity, process efficiencies, and degraded conditions, coupled with institutionally set targets and timeframes, erodes nurses' resilience and organises inevitable and unavoidable deterioration in the care patients receive.

'Letting patients down'

Frontline participants described the ethical professional and personal battles they experienced under situations where they knew, because of degraded staffing and care environment conditions; patients were not going to receive all the care they require. Grace described her expectations of her professional practice, as well as the institutional expectations of each nurse's performance. She says,

> *"Nurses are expected to be really resilient and really creative with what they can achieve with the resources that they've got, so if you're ticking something saying we are going to miss care and we're not going to be okay and no, we have no creative solutions to fix this. You do sort of, you feel that you have let the patients down and I guess you feel you've let the organisation down, and it is personal because you're talking about the care you as a person can't provide. So yes, that is very personal" (Grace).*

Nurses perceive incomplete patient care to be a performance failure, one they (often) described as forced upon them by short-staffing and degraded conditions (see Henderson, Willis, Toffoli, Hamilton, & Blackman, 2016 for Australian research on the impact of rationed resources on nurses ability to deliver care after hours, see also Child, & Institute of Medicine (U.S.), 2004 research on transforming nurses' work environments in the interests of patient safety). Nurses know dire patient outcomes are much more likely when their time with patients is eroded, an erosion that leads to nurses diminished physical and cognitive capacity to monitor for patient deterioration, and activate timely rescue procedures (Aiken, Clarke, Sloane, Lake & Cheney, 2009; Weinberg, 2003), and that contributes to avoidable mortality (Needleman, Buerhaus, Pankratz, Leibson, Stevens, & Harris, 2011).

Nurses know that under degraded conditions, patients do not receive the care that clinical evidence, and professional knowledge and judgement deem necessary. Nurses' satisfaction with the standard of professional care they can provide erodes. Grace, and many other participants, described the work they do as individuals and nursing teams to try to make sense of, and reconcile the experience and outcomes of incomplete care. She says,

> *"It's much harder to talk about* [a patient harmed on the short-staffed shift] *but we do as the group of nurses that were there at the end of that shift. We'll often have a little conversation and it is often a chance just to say 'that couldn't have been avoided'. We will just often chat about – 'that was a really crappy situation, and yes, you know perhaps the patient's fallen or, you know, or something untoward happened to a patient' we will talk about it. There's no 'what ifs' because we did at the time what we could with the resources that we had and you just have to be okay with that. It would have been nice if we'd had such and such, but we didn't and it's happened – sort of helps you be okay….not to take it home" (Grace).*

This reconciliatory talk is designed to help nurses rationalise the outcomes that occurred as a reflection of working under degraded conditions, 'we did what we could with the resources that we had'. This practice does not always, or effectively, mitigate the moral distress and guilt they experience on short-staffed shifts where the work was frantic, the care was disjointed, and where patients did not get what they needed (see the previous chapter on sacrificing decisions associated with care).

Extra-local participants identified that nurses become worn down over time by the expectation that they will work to professional standards under degraded conditions. I argue this is a gendered expectation associated with the assumption that it is women's work to care, and that they will continue to care under all conditions (see Davies, 1995 for distinctions between caregiving, care work, and professional care, and Benjamin, 2015 and Rasmussen, 2004 for more on gendered labour divisions and the devaluing of skilled professional care). Participants' experiences identify that under degraded conditions, their expectations of professional and organisational support drop, along with their expectations of being able to intercede before patients are harmed.

'Their expectations are so low'

Participants' experiences brought into view nurses expectations that they will not have what they need to perform their critical patient safety work at their best professional potential. In other words, nurses expect to work under conditions that set things up to go wrong, and often feel powerless to prevent them. Several participants

described instances where prolonged degraded conditions appeared to reset professional nursing standards of care at a lower threshold. David says,

> *"We're going to have major problems when we come to care rationing[118], 'cos these nurses – it's going to sound mean – they wouldn't know care rationing if they tripped over it because their expectations are so low. The fact that they're not showering people for six weeks is not even going to get mentioned as care rationing because they don't shower people. Why would they put that down as care not provided because they never do it. So, it's not missed, it's not rationed, it's just not there." (David).*

In the account, David is describing the effect on patient care and nursing decision-making caused by chronic degraded conditions, (see Weinberg, 2003, and Gordon, 2005 for examples), which in turn forces compromises to the quality of the care provided, (see Hollnagel 2009 and the research on rationed and missed nursing care and care left undone in the previous chapter).

Care rationing is measured as part of the implementation of CCDM, both before and after the staffing and VRM interventions to assess the impact they have had. David expects that it is at this point that it will become apparent to frontline nurses, and to extra-local managers, that the rationing of expected patient care has become normal practice as a result of degraded conditions. Nurses no longer factor aspects of care into their work with patients because they are no longer considered to be possible or essential.

Conclusion

The purpose of this chapter was to trace frontline stand-ins in aggregated forms into extra-local settings of FTE calculations and budgeting. The institutional priorities and socially constructed CCDM knowledge organising the CCDM FTE report in the council meeting have been illuminated. I have shown that socially constructed institutionally organised knowledge was prevalent; that data entered by frontline nurses

[118] As part of CCDM implementation frontline nurses provide data on the care they were unable to provide to patients, termed care rationing or missed care. This includes care omitted, care delivered at a standard below professional judgement, care that was delayed unduly, or a care task that was delegated to a staff member not qualified to perform it.

is flawed, and that there is no money to employ additional nursing FTE. As a result of these assumptions and the practices they sanction, I contend that frontline nurses are caught up in endless institutional circles of data production that make possible institutional control of aspects of their work without delivering consistent and timely staffing responses. I have shown that the slow and staged approach to increasing FTE, sanctioned by the institutional discourse of 'there is no money' erodes care environments and sets nurses up (on short-staffed shifts) to work in error-producing environments.

In the next and final chapter of this thesis, the analytic work of this research culminates in the explication of the competing institutional relations organising frontline nurses' experiences of and on short-staffed shifts. I consider the implications of the findings of the research for the Nurse Safe Staffing Project in NZ, and the environments in which such strategies are implemented.

Chapter 9 – Knowledge in competition

Competing institutional relations organise frontline nurses' experiences

Introduction

The purpose of this institutional ethnography has been to produce a detailed investigation and analysis of how aspects of the Nurse Safe Staffing Project *actually work* in NZ hospitals. The investigation was anchored in frontline nurses experiences on short-staffed shifts and from that standpoint has mapped and traced how these experiences are organised within institutionally mediated settings.

This chapter concludes the study with synthesis and summary and closes the analytic loop of the investigation. I revisit the starting point and describe how the findings address the research questions and unravel the project problematic. The substantive findings and the critical arguments are summarised and the textual mediation and institutional relations orchestrating frontline experiences brought into view. The findings are then situated in a conversation with the current literature. I consider the implications of this research for NZ and international audiences, summarising the key messages of the research, offering opportunities to employ the potential of the research findings to make changes to the status quo, and for future research. I evaluate the approach used and the limitations of the study.

The problem, research questions, and project problematic

The problem this research investigated was how, after a decade of development and implementation of nurse staffing strategies, frontline nurses in NZ hospitals are still working on short-staffed shifts. At the start of this project, I anticipated that the Nurse Safe Staffing Project, and CCDM in particular, were solutions to short-staffing for frontline nurses and that the lack of tangible improvements to staffing numbers was the result of selective and flawed implementation. The overarching query of this research was - *why have we not resolved nurse staffing in New Zealand?*

To shed light on this overarching query I began the investigation with four specific research questions

1. What are the material conditions under which short-staffed shifts occur?
2. What do nurses actually know and do on short-staffed shifts?
3. What accounts of their staffing related knowledge and work do nurses produce for others?
4. What influences nurse staffing decisions made on the day of care, and in annual budgeting rounds?

These questions framed the broader investigation of the research territory of the Nurse Safe Staffing Project and its implementation into (most) NZ hospitals. The findings of the research (discussed shortly) contribute new understandings that address these research questions. The material conditions that construct short-staffed shifts and prevent their repair on the day of care and in annual budgeting, have been detailed over several chapters. How nurses know a shift is short-staffed, and what they know and do to navigate patients and patient care under short-staffed and degraded care conditions was described. The Nurse Safe Staffing Project textual accounts (stand-ins) nurses produce have been meticulously detailed beginning with the ideological/conceptual intentions of these texts, how they are operated as part of everyday practice, and how they are taken up and read in institutionally organised milieus. I have traced and mapped how the institutional actions sanctioned by these readings put together frontline experience in ways that are consequential for nurse staffing decisions and patient safety on the day of care, and in annual budgeting for nursing FTE.

From the first iterative analysis of frontline experience, the project problematic (chapter 5), framed the focused analytic work of unravelling how the Nurse Safe Staffing Project is implicated in the substitution and displacement of nurses situated knowledge and accomplished professional work on short-staffed shifts. Also explicated, is how institutional environments are implicated in the failure of Nurse Safe Staffing Project texts and processes to consistently stimulate the staffing responses nurses know are needed. The substantive findings and critical arguments of the investigation unravel this problematic.

Substantive findings and critical arguments

The conclusions of this study rest on three principal discoveries relating to what nurses know – their situated intelligence, what nurses are doing on short-staffed shifts, and the obfuscation of nurses' knowledge and work accomplished by translation into the texts of the Safe Staffing Project.

What nurses know about the staffing required to preserve their responsive intercession work critical to patient safety rests on substantial situated intelligence. This situated intelligence is constructed of a constantly evolving live oral narrative of the current status of patients and their care needs, along with an extensive array of texts providing a comprehensive picture of anticipated patients and nursing work. Nurses also know from experience that staffing must be sufficient to absorb unexpected occurrences in order for the safety, completeness and quality of patient care to be preserved. This comprehensive and evolving assessment is evaluated in the context of knowledge only the nurses and the manager of the ward hold about whether the oncoming nurses are sufficient in number, skill, experience, and credentials to meet the current, anticipated, and unexpected needs of patients and nursing work. The critical argument here is that the extent of this situated intelligence is invisible to anyone outside the setting of care and is not utilised as the primary basis for moment-to-moment staffing decision-making in extra-local settings. I have demonstrated and argued through ethnographic and textual analysis that the textual processes provided by the Nurse Safe Staffing Project fail to accurately capture this situated intelligence, nor do they 'keep pace' with the moment-to-moment knowledge about the nursing work to be done, and the staffing required to achieve it.

What nurses do in response to short-staffing and the five staffing responses (chapter 5), is characterised by the extensive physical and cognitive adaptive and compensatory work of reorganising and rejigging patients and care. This complex work involves determining how care can be fractured and given to 'taskers' or unregulated helpers, managing the care of outlying patients, continuous reprioritisation of all the care to be provided as patients conditions change, and more

patients arrive, as well as the taxing and conflicting work of making sacrificing decisions about care to be left undone. In addition, participants' experiences revealed the work nurses are doing to support hospitals to accomplish central policy-driven priorities such as patient flow, and performance targets (ED6, and surgical volumes). Nurses' work with patients includes preparing them to be moved through speeded-up and fractured care processes in the ED, acute planning units and in-patient wards. They prepare patients to be 'parked' as boarders in wards not set up for their clinical profile or needs, and enrol them to participate in patient flow by instructing them about their expected discharge date and what will happen if they cannot leave on time. Nurses' work to orchestrate patient moves, interventions, and written plans by 'chasing' doctors, and negotiating with the DNM and ward nurses, enrolling them in the prioritisation of targets. I argued that this extensive and complex work is both critical to patient safety and seriously undermined by the degraded conditions of short-staffing. Nurses' highly intelligent work, geared towards holding flawed systems together and trying to make things work under all conditions, is essential to successful organisational performance. However, this nursing work is missing from formal accounts of patient care and organisational performance, rendering it institutionally invisible, and, accordingly, it is not 'counted' as work, valued as vitally important work, nor factored into nurse staffing decisions or calculations.

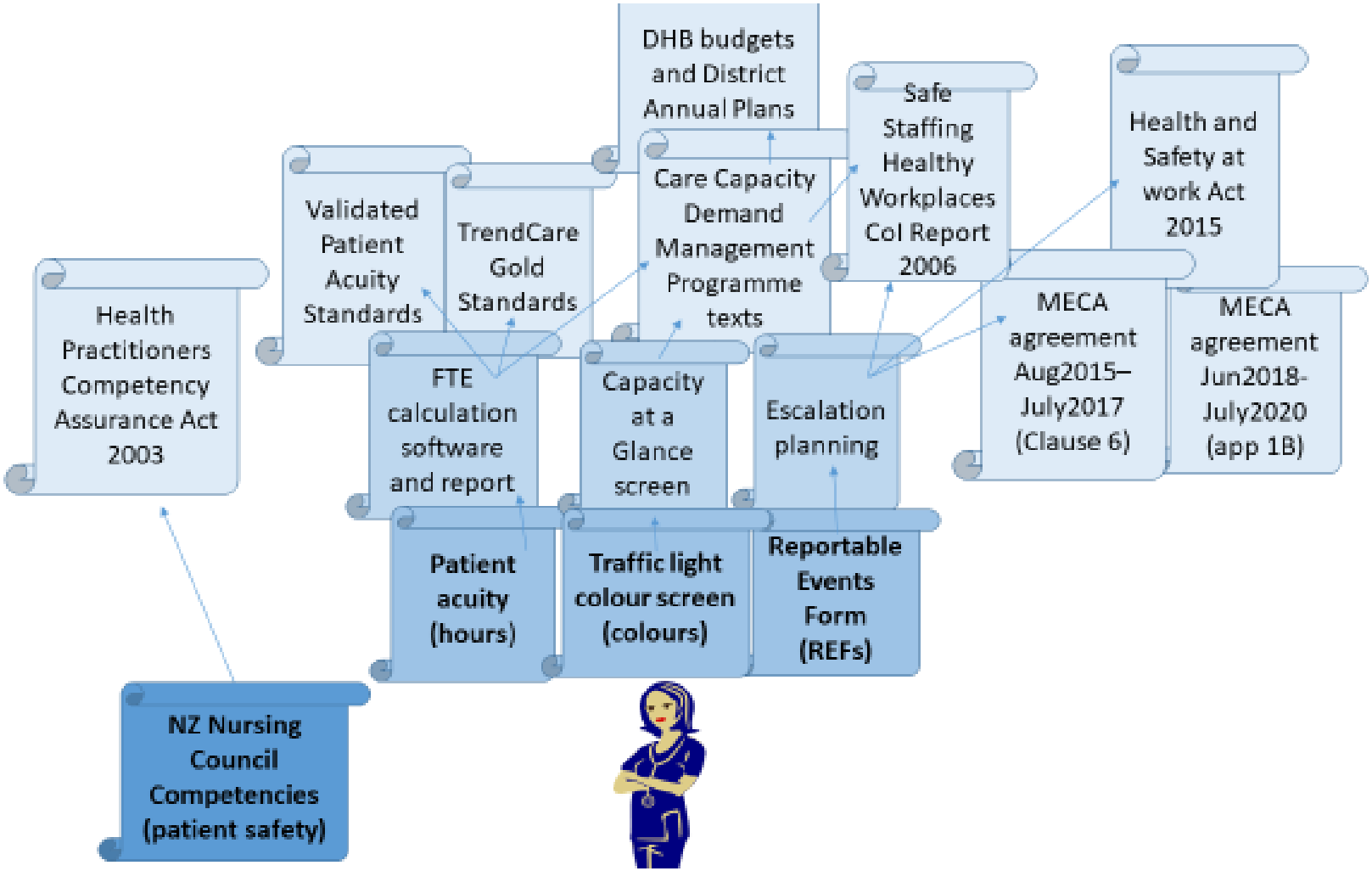
Textual obfuscation occurs when nurses translate their specific, contextual, and situated knowledge and work into the texts and processes provided by the Nurse Safe Staffing Project and patient acuity systems. These textual translation processes represent the single most widespread and significant outcome of the Nurse Safe Staffing Project requiring most frontline nurses in NZ hospitals to produce hours, colours, and REFs as abstract textual representations of their knowledge and work. The generation of patient needs and nursing care in these forms enables a labour hours equation that obliterates and stands-in for individuals and actualities and makes possible a standardised quantification and (financial) calculation of nurses and their work. Nurses have been enrolled in the production of hours, colours and REFs as the authorised textual processes. They are taught that this is the way safe staffing is done, and these are the forms required to activate staffing responses. Analysis

reveals that the hours, colours, and REFs texts connect frontline nurses to extra-local managers in a textual chain that provides a myriad of opportunities for scrutiny, reorganisation and control of nurses' work. The argument here is that not only do these textual processes abstract what nurses know and do into forms that obfuscate their professional knowledge and work, they also make possible institutional control that organises nurses talk and work into alignment with institutional priorities of efficiency, productivity, and target-based performance.

Textual mediation of frontline nurses' knowledge and work

The textual mediation of these frontline experiences is extensive and pervasive. Each chapter (5,6,7,8) has mapped the sequences in which knowledge of these texts and their abstracting forms constructs nurses uptake and activation of the hours, colours, and REF texts. Mapping then follows these texts, into extra-local settings of reading, identifying the actions sanctioned by these readings within locations in which knowledge is constructed by multiple competing institutional discourses and priorities. By tracing the staffing and FTE decisions made in these settings back to the experiences of frontline nurses I have illuminated their consequential organising effects, and shown how nurses' knowledge and work are hooked up into and constructed within these competitive institutional milieus. These texts and the text-act-text sequences they activate and mediate represent the tangible and material ways in which frontline nurses' knowledge and experiences of and on short-staffed shifts are organised. Figure 25 (next page) provides a single collective view of the texts traced in this investigation.

Figure 25 Textual mediation of frontline nurses experiences on short-staffed shifts in NZ hospitals



From the point of activation, when frontline nurses completed the generation of hours, colours and REFs, their knowledge and work were immediately abstracted, conceptualised and rendered numerical and calculable. This translation is deliberate. It is only in these forms that (aspects of) nurses' knowledge and work can be made institutionally visible and actionable. The current episteme in managed healthcare privileges the measurable and calculable over the individual, nuanced and labile. As a result, the nurse staffing research and the staffing strategies they inscribe, like those employed in NZ, have all adopted standardising, abstracting, and quantifying approaches that repackage nursing knowledge and work into forms that make them accessible for managerial consideration. At an institutional ethnography workshop I attended in Toronto in 2017 Dr Susan Turner used the term *taking up the master's tools* to describe this adoption of discourse and authorised knowledge forms in order to enter into, try to make sense of, and potentially influence institutional knowledge and processes (see also Aiken's 2014 assertion that nurse staffing research has been conducted using quantitative and objective data to convince managers of what nurses already know).

Many participants in this research and proponents of the measurement approach in *the unit,* DHBs and unions claim that making (aspects of) patient care and nursing work measurable has resulted in a more accurate calculation of staffing needs. My purpose is not to dispute the gains made nor discredit or dismiss these methods, but to balance them with an empirically constructed analysis that identifies that much of what nurses know and do is too dynamic to be accurately captured by static abstractions, or simply defies measurement. Nurses know there is no such thing as a statistically average patient and no such thing as a generic universal nurse delivering care in standardised units of time. Their concerns that textual accounts of their situated intelligence are partial and inaccurate are well founded. Not only do the numerically constituted stand-ins fail to accurately capture the nature, density, and significance of their dynamic work, they routinely fail to activate the staffing responses nurses know are needed to accomplish it.

The analysis chapters and mapping of text-act-text sequences identify several textually mediated circles that constitute the social and ruling relations organising nurses' experiences. Although these texts operate and mediate frontline nurses'

experiences, they are not the institutions themselves. Figure 26 (next page) contains the small hero (frontline nurses) adapted from Smith's 2006 model, and the institutional frames revealed to be orchestrating frontline nurses' experiences on short-staffed shifts in NZ hospitals.

Figure 26 Institutional relations orchestrating frontline nurses experiences on short-staffed shifts in NZ hospitals

Competing institutional relations orchestrating frontline experiences

This investigation uncovered that nurses' knowledge about staffing needs comes into direct competition with institutionally framed priorities. Nurses situated intelligence (detailed earlier) concentrates their gaze on their primary accountabilities for patient safety, the protection of safe care environments, and the provision of complete patient care. However, institutional priorities are an unavoidable and powerful feature of care environments that compete with and organise nurses' consciousness, discourse, and textual and work practices. Nurses' unconscious compliance with these institutional priorities, and the scale and extent to which they have been taken up as nursing work was an important and somewhat unexpected finding.

Participants' descriptions of their work on short-staffed shifts brought to light the extent to which their thinking and actions have been colonised by these institutional priorities and accountabilities. Fewer than half of all frontline participants recounted patient safety as the primary reason for adequate staffing. All participants talked about having enough staff to get the nursing work done, overtly described as keeping patients flowing through the ED, APU, post-op recovery, and the wards, meeting targets as well as ensuring screens, patient acuity data, and documentation are updated and congruent. As I have shown over several chapters of this thesis, the gaze of nurses is being redirected away from patients towards screens, lists, whiteboards, and institutional symbols of organisational performance. These priorities and accountabilities are the ones through which nurses receive constant reinforcing messages in their everyday work, and which they are being organised to understand is part of their professional responsibilities and practice (Moffat, Martin & Timmons, 2014).

Extra-local participants claimed that performance against the targets authorised by global and central government policies constitutes the delivery of healthcare in the interests of patient care and safety. This unassailable knowledge, about how patient care and safety are performed and measured has, to paraphrase

Dobson (2001) and Douglas (1987) 'laid claim to our thinking' to such an extent that in NZ it organises everyone in all 20 DHBs from the executive board to the frontline. These policy-led ideas construct the forms in which performance is measured, and it becomes taken for granted that everyone can and will be measured according to these abstractions. I have shown that nurses are organised to produce these abstractions and these forms are then used to bring nursing thinking and work into line with managerial and policy constructions of healthcare ideas.

I argue that as a feature of their everyday work, orientation to institutional priorities is in direct competition with frontline nurses' material ground of the bodily care of patients and the time, knowledge, and cognitive work it takes to perform their skilled and responsive intercession work. The institutional orchestration revealed identifies that nurses attention is dispersed across multiple accountabilities, and the textual accounting practices associated with each of them. As a result, the spaces between care activities and processes are substantially reduced deleting the time for cognitive work, problem-solving, and reflection, (see Marx's concept of porosity, Massimiliano, 2013). The steady insertion of textual processes and institutional accountabilities and their practices into the everyday work of nurses must be accommodated inside the time they have for the cognitive and physical work of patient care. This competition for nurses' attention may not decrease their awareness of patient needs, but most certainly impacts on how attentive they can actually be in practice. These insertions are the material ways in which increased accountabilities, and the competition they establish for nursing time, intensify nurses' work and establish the conditions under which sacrifices of patient care must be made.

Situating the findings in a conversation with the literature

A conversation with the literature during iterative analysis revealed that this research has strong correlations with existing work on how knowledge translation, abstraction, numerical constitution, and the insertion of measuring and abstracting technologies, contributes to the intensification and control of nursing work (see Allen 2015; Campbell, 1984; Campbell & Rankin, 2017; Rankin & Campbell, 2006; Selberg, 2013; Toffoli, 2011). Additionally, existing knowledge about how institutional and

professional accountabilities organise care environments (see Allen, 2015; Campbell, 1984; Melon, 2012; Rankin, 2004; Rankin & Campbell, 2006), and the impact care environment priorities (efficiency, productivity, and fiscal constraint), and task restructuring (Bambra, Egan, Thomas, Petticrew, & Whitehead, 2007) have on nurses ability to accomplish their primary focus on patient safety (see Aiken, Clarke, Sloane, Lake, & Cheney, 2009; Bachnick, Ausserhofer, Baernholdt, Simon, & Match, 2018; Buhlman, 2016; Allen, 2015; Campbell, 2000; van Graan, Williams, & Koen, 2016; Weiss, Malone, Merighi, & Benner 2002) were also congruent with my research findings.

I found a small number of studies describing the invisible patient care and organising work nurses do to provide the glue to organisational function and performance, such as Davies who states, "good nursing is rather like invisible mending – much of it could not be seen" (1995, p. 21), (see also Allen, 2014; Campbell, 2000; DeVault 2014; Warren, 2016). The patient flow coordinator role (chapter 7), and the work nurses are doing to prepare patients to enter the hospital system, shares some similarities with Weiss, Malone, Merighi, & Benner's (2002) description of nurses as system interpreters, acting in the spaces between the patient, family, medical and other professional groups. However, the ethnographic description I provide, made up of how nurses construct their assessment of the staffing needs for a shift, undertake the continuous reorganisation and rejigging of patients and care, and assist organisational target-based performance, appears to be a unique contribution to articulating the invisible work nurses are doing in relation to staffing and patient safety.

Findings relating to the live narrative nurses construct as part of the situated intelligence used for staffing assessments also appear to be an additional unique contribution. Narratives are employed extensively in nursing for a variety of purposes including teaching, research, policy analysis, and reflection (Bowles, 2004; Diers, 2004; Witham, & Haigh, 2018). Gurbutt (2009) describes narratives in his work on nurses patient-related clinical decision-making using the term 'intellectual capital', describing this work as active, cognitive, dynamic and collectively performed rather than appearing in written records of the shift or patient care. Although there are some similarities with Gurbutt's work, the *situated intelligence* uncovered in chapter five and built on in

chapters seven and eight, factors in several additional aspects of nursing decision making. These additional factors include, patients and nursing work that is anticipated to arrive as the shift unfolds, the staffing required for the inevitable unexpected occurrences on the shift, and the staffing associated with nurses' non-direct patient-related work such as reading, interpreting, and updating various textual technologies in order to meet organisational accounting and performance requirements.

The knowledge gaps identified in chapter 1[119] are partially addressed by the findings of this investigation. To the best of my knowledge, after an extensive search, this is the first ethnographic study to trace the material operation of a staffing strategy in care settings organised by NPM principles, and the first ethnographic study of the everyday operation of NZ's unique Nurse Safe Staffing Project strategies. The nurse staffing research and analyses directed at connections between staffing and patient outcomes (Aiken Clarke, Sloane, Sochalski, Silber, 2002; Aiken et al., 2014, Blegen, Goode & Reed, 1998; Cho, Ketefian, Barkauskas, & Smith 2003; Griffiths, et al., 2016; Kane, Shamliyan, Mueller, Duval, Wilt, 2007) are not easily translatable into operational strategies (Griffiths, et al., 2016), partly because there is no universally agreed formula on the *right* number of nurses to ensure adequate staffing, patient safety, and manageable workloads. Also, given the intention of that research to convince policy writers and decision-makers of the relationship between nurse staffing and patient outcomes, such research privileges quantification of nurses and nursing work, and is, with few exceptions, disconnected from the material ground of individual patient experiences, and intelligent responsive nursing care.

Implications of the findings

This research has provided an excavation under and behind the taken-for-granted knowledge and assumptions that the Nurse Safe Staffing Project approaches are inherently and universally correct and will result in only positive outcomes. Completing Nurse Safe Staffing Project texts (along with the numerous other

[119] Why is the substantive and powerful research not sufficient for practical interventional design? How are NZ's staffing interventions actually taken up and operated in practice? How are Escalation planning and CCDM imagined, versus how are they actually done in practice.

accounting requirements of nurses) in institutionally organised NZ hospital settings, turn frontline nurses gaze away from patients towards screens, lists, and abstract symbols of performance. These texts are the tangible way in which the ideological ideas of the Nurse Safe Staffing Project, and central policy priorities, have come to mediate nurses' material experiences and counter, subvert, and override what nurses know and know how to do on short-staffed shifts

What this research has established is that the Nurse Safe Staffing Project strategies (Escalation planning and CCDM) cannot completely resolve nurse staffing problems under the current conditions that prevail in NZ DHBs. What nurses know about the staffing needed to keep patients safe in the moment-to-moment of care cannot make headway against institutional priorities, the privileging of objectified abstract knowledge, and omnipresent fiscal constraint. How this is organised to occur as it does has been explored, unpacked, and is summarised here into four key findings of the research:

1. Nurses' accomplished and responsive knowledge-based intercession work, critical to patient safety, relies on organisational and institutional provision of safe, well supplied, professionally conducive environments. Short-staffing and degraded conditions establish error-producing environments and erode the safety, quality and completeness of patient care, and the resilience of nurses and their practice.

2. Nurses' situated intelligence about staffing for current, anticipated, and unexpected nursing work is not utilised as the primary basis for staffing decisions. Rather, abstract textual stand-ins, disconnected from the material urgencies, suffering, and compromises of the short-staffed shift, are taken up as the 'facts' for decision-making. Despite these 'facts', fiscal constraints and lack of planning for staffing deficit mean that few organisations can comprehensively repair all short-staffed shifts on the day of care.

3. The (mostly) invisible reorganising work done by nurses, commonly referred to as the glue of the organisation (Allen, 2014a), holds together flawed systems. Nurses navigate patients through speeded-up and fractured care processes, and

compensate patients for short-staffing and degraded care environments while simultaneously supporting organisational performance and goals.

4. Nurses are caught in the crossfire between competing institutional relations that organise significant accountabilities into their consciousness and the time required to provide complete professional nursing care for each patient. Institutionally authorised priorities are accomplishing a pervasive colonisation that reorganises nurses' thinking and work and disrupts the attentive and time-consuming surveillance and responsive nursing actions associated with patient safety.

These research findings constitute a narrative that runs counter to the knowledge, discourse, and practices of people, such as myself, who have been part of the design of Escalation planning processes and the CCDM programme, as well as the people who govern and operate them. This counter-narrative has not been easy to discover, nor to write, but none-the-less constitutes the principal outcome of this research. The cognitive dissonance and disruptive revealing findings of this research offer the opportunity for a jolt. By jolt, I mean a shake-up of assumptions, an opportunity that shakes people out of their unconscious engagement with authoritative knowing, prompting critical reflection on 'what is actually happening here?' and 'who is being served?' As a result of this investigation, stakeholders to the Nurse Safe Staffing Project must, for a time, dwell in the discomfort of knowing that our taken for granted assumptions that our current knowledge, tools, and practices will completely and consistently resolve NZ's nurse-staffing problems are incorrect.

The implications of the findings of this research are relevant to NZ for two principal reasons. The first is that by 2021 all DHB's have committed to implementing the CCDM programme and Escalation planning strategies. The analytic tracing of institutional sequences in this research identify that DHBs are not achieving fidelity to Escalation planning and CCDM as *the* nurse staffing interventions; in many cases shifts cannot be repaired, additional nurses cannot be mobilised on the day of care or from annual budgeting practices. Nationwide implementation commits all stakeholders to processes that I have shown do not guarantee the repair of short-staffed shifts, the acknowledgement and utilisation of nurses situated intelligence about staffing needs,

nor serve the specific and individual needs of patients over performance priorities. The second reason these findings are significant relates to the implications of continuing under the current 'good-will–good-faith' arrangement. At present DHB/union collaborations volunteer (often selectively) to take up Nurse Safe Staffing Project strategies and implement them 'as best they can' in the current social and political healthcare environment. Continuing to pursue our current approach under the current conditions will perpetuate the troubles and fault-lines this research has revealed in every care setting.

The research findings also have implications for other OECD countries grappling with staffing shortages, compromises to patient care, and staffing strategy design and implementation, because, although NZ's approach has been unique, the problems being encountered are not. Of the many nurse staffing strategies developed and implemented in OECD countries, there does not appear to be a single unequivocally successful solution. There are however, inherently uniform features of socially constructed knowledge and institutional organisation in NPM reformed hospitals. In countries where nurse staffing strategies are not backed by political and industrial legislation, similar outcomes are likely to those that are occurring in NZ. I argue from the research findings that the absence of legislation or mandate that compels fidelity to 'the staffing solutions' precludes any nurse staffing strategy from making headway against the socially constructed NPM/neoliberal knowledge privileging measurement, commodification, performance and pervasive financial constraint.

The social and ruling relations orchestrating frontline nurses' experience in NZ have been made plain and there is no escaping them. We are all in and of the social relations orchestrating our everyday work and lives (Rankin, 2017a & 2017b; Smith, 1999). Knowing about the relations constructing our experiences does not mean we can simply shake them off (Campbell and Gregor, 2004; see also Winter & Lockhart 1997, for strategies for moving from motivation to political action). However, as Smith states "[f]inding how to make change from below [the ruling relations] becomes, I believe, a matter of our survival as political subjects in the very general and close-to-home sense of the political" (2007, p. 26).

This study represents a commitment to discovering and charting a detailed description and explication of the social organisation of an aspect of the safe staffing terrain in NZ. If it achieves nothing further than making visible and interrupting the ideological circle concerting and maintaining the displacement of frontline nurses' knowledge and work, then the underpinning purpose has been achieved. However, finding ways to act from below these ruling relations, and knowing the implications of the failures and erosions of the current system, prompts me to go beyond the counter-narrative and suggest a range of potential future actions that may open new windows of opportunity across the safe staffing terrain.

Possibilities and opportunities to change the status quo

The findings of this research indicate that none of the existing tools can provide a truly up-to-date and accurate picture of what nurses know is needed for each patient, on each ward, and each shift on the day of care, as the nurses who are situated there know it. However, what we need to know is discoverable, and this research begins the work of moving towards identifying, articulating, and utilising this unique situated knowledge.

How nurses could support change from below

The findings of this research enables the small hero (standpoint nurse in figures 25 & 26) to look at the textual, social and ruling orchestration of their everyday experience, and understand it for what it is. They can see how they are hooked up into it, often without their conscious knowledge (Smith, 2006), or with any recourse to resist. These discoveries open opportunities for frontline professionals to have sufficient knowledge and understanding to challenge and change their particular experiences. The following opportunities may support this challenge and change from below.

Critical to uncovering nurses situated intelligence associated with staffing is what Rankin (2009) describes as an adroit articulation of nursing work. In the context of nurse staffing, articulation of nurses' situated intelligence must challenge the 'virtue

script' (Nelson & Gordon, 2006), that claims nursing was born in the church[120] and constitutes more of a moral calling than a knowledge-based profession (also see Davies 1995 for a distinction between caregiving, care work, and professional care). It must also counter the historical, political and gendered assumptions that perpetuate the pervasive undervaluing of nurses' knowledge, work and contribution to patient care (Adams & Nelson, 2009; Cortis, 2000; Elliot, 2017). These assumptions maintain inherent ideas about caring as gendered and moral obligations of women (Gerson, 2002) that are perpetuated by organisations relying on nurses to step into the breach caused by the undersupply of nurses and continue to provide care regardless of the conditions.

In this study, I have exposed some of the highly intelligent and situated social, logistic, relational, reorganising, gendered, connective and cognitive work nurses are doing. This work navigates patients and patient care through flawed systems, fractured care processes and in under-supplied environments. These environments are orientated to abstract conceptual ideas about population health and limited resources. The accomplished, invisible and institutionally undervalued nursing work, illuminated in this and other studies (see Allen & Pilnick, 2006; Allen, 2014; Campbell, 2000), must be articulated more formally. This articulation, by nurses and nursing, must accomplish an elevation of the status of nurses situated intelligence. Organisations must then commit to using this situated intelligence in conjunction with the abstracted knowledge used for standardised and generalised decision-making, and to privileging it over that of abstracted data on the day of care. This articulation is essential to ensuring staffing decisions incorporate nurses' situated intelligence about how to keep patients safe. There are many levels at which this needs to be addressed.

A place to begin such an articulation is to substitute nurses tendency to start conversations with the managerial and medical hegemonies with 'I feel' or 'I think' there is something wrong with this patient, or this shift, to '*I know*' there is something wrong with this patient, or this shift, and then articulate HOW they know. In the aviation industry, where much of healthcare's safety protocols arise, a co-pilot (and cabin crew) can begin a conversation focused on safety by saying "captain you must listen to me".

[120] Quote attributed to Florence Nightingale in various online resources but without a specific textual reference.

This phrasing prioritises the captain's attention to the co-pilot (and crew) over all other incoming information (Helmreich, & Foushee, 1993). The care of patients in hospitals is no less fraught with risks to safety, in fact we know from the IOM report *To err is human* (1999) that many more people die avoidably in hospital each year than in accidents involving aircraft. The limitations of our current strategies mean that it is not the knowledge of the nurses who are situated in the actualities of the care setting and the shift that is prioritised over other sources of information. It is vital that this changes because only the situated nurses know whether or not staffing is sufficient to keep patients safe (see Smeds-Alenius, Tishelman, Lindqvist, Runesdotter, McHugh, 2016 for research on the accuracy of registered nurses prediction of 30-day mortality). Finding ways to discover, uncover, make explicit and privilege nurses situated intelligence that is 'hiding in plain sight' would help to address the short-falls of the current strategies.

In NZ, a number of texts are available to be activated by frontline nurses in the service of their situated intelligence about patient safety and short-staffing. These are the NZ Nursing Council competencies, (2017), the escalation provision[121] in the MECA (June 2018 – July 2020), and clause 83 of the Health and Safety at Work Act (2015). Nurses can use these texts to 'speak back' to staffing decisions that attempt to prioritise institutional performance and interrupt the current practice of overriding nurses situated intelligence and primary accountability for patient safety. Nurses can be encouraged to activate these texts in order to protect the patient safety line that is theirs to patrol.

How organisations could support change

There are practical technical and operational interventions that could be readily adopted that would improve the current system in the interests of frontline staffing and patient safety. This includes mandating compliance with system-recommended staffing, both on the day of care, and to meet annual FTE recommendations. Additionally, existing systems[122] could be used to assess the scale of the problem associated with chronic erosions and pervasive understaffing in DHBs implementing the safe staffing strategies

[121] Now appears in Appendix 1b of the MECA (June 2018 – July 2020) was historically called Clause 6.
[122] Patient acuity data and traffic light screen data.

(see Needleman, Buerhaus, Pankratz, Leibson, Stevens, Harris, 2011 for research identifying that patients on day shifts that are eight or more hours below the agreed staffing target (negative eight hour variance from actualised hours) are exposed to a statistically significant higher risk of not leaving the hospital alive). Collectively these interventions would have the effect of changing the status quo by improving fidelity to the existing system, establish a 'line to be patrolled', and counter some of the erosions this research has uncovered. However, none of these changes would address the discoveries of this research. The transformational opportunities lie in committing to a fundamental re-evaluation of how nurses' knowledge, situated intelligence and accomplished professional work is valued by the organisation, and utilised as a critical component of staffing decision-making. Accomplishing this transformation necessitates the tackling of the entrenched social and gendered history and framing of nurses, nursing and caring (Broadbent, Healy, & Strachan, 2017; Eliason, 2017; Kramer, & Beutel, 2015) Working with nursing, union and health care organisations on how to accomplish this transformation is an endeavour to which I am deeply committed.

How research could support change

Repeating a number of studies carried out in NZ would provide the opportunity for longitudinal research pertaining to ongoing changes in nurses' work as the Nurse Safe Staffing Project rolls out. Of particular value would be repeating the study conducted in NZ by Dr Mary Finlayson (Auckland University, NZ), and Professor Linda Aiken (University of Pennsylvania) using the Revised Nurse Work Index (NWI-R), the Maslach Burnout Inventory (MBI), as well as items measuring the perceived changes in the structure of nurses' work (Finlayson, Aiken, & Nakarada-Kordic, 2007). In addition, in the time series research conducted by Carryer, Diers, McClosky, & Wilson, (2010) the final time series period (2000-2006) precedes the development and implementation of CCDM. Continuing a time series study to include 2019, then again after 2021 when all DHBs must be implementing CCDM, might offer valuable knowledge about the impact of *the programme* on patient and nursing outcomes and experiences. Equally, repeating Willis, Carryer, Harvey, Pearson, & Henderson's (2017) Australia/New Zealand study on

missed nursing care in reformed hospitals could offer a comparison between data sets if conducted following full implementation of CCDM in all DHBs in 2021.

A study investigating the cost versus benefit of the Nurse Safe Staffing Project could analyse the total cost of the campaigns, bargaining, the committee, the unit and the development and implementation of the strategies against the cost of simply staffing hospital wards to the level frontline nurses and CNMs know to be required for patient safety. A comparative analysis could also be conducted inside DHBs by electing to staff one-two wards to the CCDM FTE recommended levels and monitoring the impact of this on patient outcomes, staffing budgets, staffing levels, and nurses' reports of patient care, and comparing this with the same markers in wards where the CCDM FTE recommendation is not consistently met.

Another unique feature of NZ is the holistic framework for health (Te Whare Tapa Wha) held by Maori, the indigenous Tangata Whenua (people of the land) of NZ. This framework, based on the four cornerstones of Te Wharenui[123] incorporate Taha Tinana (physical health), Taha Wairua (spiritual health), Taha Whanau (family health), and Taha Hinengaro (mental health). Based on this cultural framework for health, and discussions I have had and texts reviewed, it is startlingly evidence that patient safety and safe staffing are constituted in materially different ways for Maori patients and Maori nurses, (Tauranga, 2019[124]; Te Toi Ahorangi, 2019[125]) than has been conceived in the research, and in practice in NZ to date. There is the potential for patient safety research utilising this framework to contribute knowledge to a more culturally accurate assessment of what constitutes patient safety and complete patient care for Maori (patients and nurses) in order to ensure that nurse staffing strategies employed in NZ are culturally appropriate and responsible and uphold the word of Te Tiriti o Waitangi.

[123]A traditional Maori meeting house.

[124] Acknowledging that M. Tauranga's personal communication is based on her interpretation of the original Te Toi Ahorangi strategy text.

[125] Acknowledging that Te Toi Ahorangi strategy has been authored by Tricia Keelan in conjunction with and on behalf of the Runanga for Hauora a Toi (BOPDHB).

Study evaluation

In this section, I reflect on the research approach taken, and the limitations of the study, including the paths of inquiry not followed.

Reflection on the approach taken

I employed institutional ethnography as the research strategy specifically for its critical feminist foundation, and the analytic intention to see past taken for granted knowledge and assumptions to what is actually happening; the 'material' to be discovered. The purpose of an institutional ethnography is to produce an empirical explication of how people's experiences are actually organised to occur in the research setting. Stanley and Wise state that "[Dorothy Smith's] work emphasizes that a materialist feminism must take as centrally important the ways in which ideological practices colonise material realities" (1990, p. 35). What is revealed offers an opportunity to know these experiences differently, and to intervene in ways that open opportunities for taken for granted knowledge to be countered, and power imbalances corrected. Dobson eloquently describes this intention,

> "Before we can modify institutional, organizational forms, we must be able to see how they are actually put together in time, and this means explicating text-mediated, trans-local relations as accomplished by actual people in particular local sites and seeing how they are hooked (and often objectified) into larger organizational processes" (2001 p. 15).

In order to produce an analysis capable of 'modifying institutional, organisational forms', I adopted a standpoint alongside frontline nurses to anchor the examination of how their situated experiences of and during short-staffed shifts are organised. I have traced and mapped the operation of aspects of the Nurse Safe Staffing Project in comprehensive detail. Charting this social cartography has resulted in opening up for analytic scrutiny the actual and material ways in which patient acuity and Nurse Safe Staffing Project tools partially and inaccurately translate nurses situated intelligence into textual 'facts' that compete with privileged institutionally authorised

knowledge. I have also excavated and exposed the institutional priorities in care environments that confound and obstruct the operation of Nurse Safe Staffing Project, and orchestrate and control frontline nurses' crucial knowledgeable and intelligent work.

Study limitations

As stated in the opening paragraph of this thesis, the terrain of the Nurse Safe Staffing Project is vast, complex and in motion. Some of the readers of this research will hold different knowledge to what is expressed here based on their own experiences and locations and will contest the findings I have produced. These differences are to be expected. Social location and experiences construct peoples' knowledge, and differences are inevitable. However, I have been assiduous in ensuring that each stepping stone in the analytic trails I have traced are clearly discernible, that each path's course is clear between the pins on the map of the terrain, and I have diligently focused on keeping the institution in sight. An extensive amount of data has necessarily been left out as a concession to scope (as is the case with most research). Here, I briefly summarise some of the paths on the research terrain not followed and why.

I originally planned an additional chapter using interview and observational data gathered from DHB, union, and governance level executives. However, although many of these participants had adopted and were using the discourses of patient acuity and the nurse staffing strategies, their knowledge was highly conceptual, and few had a comprehensive understanding of the actual work involved for frontline nurses. These participants could not fully engage with the actuality of frontline work associated with data entry, textual account construction, the textual sequences involved in Nurse Safe Staffing Project processes, the experience of being redeployed to 'fill gaps', and the material concerns and compromises that characterise short-staffed shifts. This data will form part of a subsequent publication on ideological practices and how they are translated into actual work for frontline staff in ways that are not apparent when decisions are made.

Although this research will be useful to all DHBs, because they must all be implementing CCDM by 2021, there will be people from other professional groups and

care settings for whom this analysis has limited applicability (at least initially). There are several advisory groups exploring the translation of the CCDM into these other settings and disciplines, but from my chosen standpoint, few of these experiences and texts came into view. However, I believe the research provides a cautionary tale for these groups.

Clause 6 was referred to in chapter four and was present in the discourse of participants orientated to the structured staffing responses present in the MECA text (24 August 2015-31 July 2017)[126]. I did not pursue this path because, although frontline participants talked of aspects of Escalation planning such as calling the DNM and completing REF reports, none spoke of Clause 6. The Clause is an example of a conceptual idea of the Nurse Safe Staffing Project, and even though it has been incorporated into various MECA agreements, my experience prior to and during this research, borne out by the experiences of frontline participants, is that Clause 6 is rarely, if ever, activated by frontline nurses as part of their safe staffing activities. Clause 6 constitutes an example of a nurse staffing strategy that would have been most effective as a mandated policy.

Conclusion

The research questions and emergent problematic of this investigation were employed to interrogate the problem of how it is that frontline nurses in NZ are still working on short-staffed shifts more than a decade after the design and implementation of nurse staffing strategies began. The analytic tracing and mapping of the institutional ethnography approach have enabled a detailed charting of the material operation of aspects of the Nurse Safe Staffing Project in NZ hospitals. These research findings have revealed the substantial and significant professional situated knowledge and accomplished intelligent work of nurses that is missing from the existing forms of knowledge and the nurse staffing tools and strategies currently in use. Findings have also brought to light that the powerful and pervasive institutionally organised knowledge and imperatives that shift nurses' attention and time away from patients are

[126] Which now appears in appendix 1b of the current MECA agreement (4 June 2018-31 July 2020).

indelible features of the competitive milieus in which nurse staffing strategies are being implemented.

The findings of this research are not what I was expecting to discover. The knowledge that Escalation planning and CCDM have (as yet) failed to completely resolve nurse safe staffing problems in NZ is not new. However, as a result of this research into the day-to-day operation of the strategies, it is empirically and materially clear *how* they are failing to do so. In addition, there are significant and counter-intuitive findings that identify *how* these tools have made possible a systematic displacement of nurses situated intelligence from staffing decision-making. This displacement is the very opposite to what these tools were intended to achieve, and whom they were intended to serve. Not only do these findings provide the empirical evidence of how the Nurse Safe Staffing Project strategies are not accomplishing their intended purpose, they also provide material direction for the work that remains to be done in order to accomplish consistent and widespread gains to staffing for nurses, and safety for patients in NZ hospitals.

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Appendix 1 recruitment letter from Nursing Review 2016

Safe staffing: what forces make a shift safe or unsafe?

Nurses driving home from work probably know whether a shift felt 'safe' or 'unsafe'. PhD researcher RHONDA McKELVIE wants to talk to nurses about the forces influencing safe, or unsafe, staffing.

I imagine a nurse, we'll call her Sandra, leaving an afternoon shift at 11.30pm.

She's late leaving her shift. She's had one break of 17 minutes in her "eight-hour" shift. Her dinner is still in the staff fridge. She might get time to eat it tomorrow night…

Sandra knows her colleagues had similar length breaks and, when they did cross paths that evening, all agreed that there was way more work to be done than they could possibly achieve. Each nurse was looking after five to seven patients. At 5.17pm there was a drug error; at 7.10pm one of the patients fell in the bathroom sustaining significant bruising but no fractures or skin tears.

During this particular shift only three of the 32 patients received all of the care requirements mapped out to their clinical care pathways and progress notes. All of the nurses worked 45 to 75 minutes after their shift ended, a similar shift pattern for the previous few weeks.

Sandra gets home just after midnight. After a hot drink and some TV – to try and quieten her frenetic mind – she falls into bed at 12.45am. She wakes at 1.45am panicking about whether she had cleaned the volume of the wound drain she'd emptied on her way out the door; she calls the ward to check, and of course she had.

She then lies awake for several hours processing her distress at not being able to provide all the care her patients required. She'd had to do a number of patient care activities for junior colleagues without PCA (patient controlled analgesia) or epidural skills. There just hadn't been enough time for to get everything done, and some needed equipment and meds weren't available or were hard to find.

As a result, Sandra feels, patients were put at risk through lack of resources, fatigue-related errors and insufficient staff for surveillance of all patients at risk of falling. Reflecting on the shift, Sandra believes it was unsafe for both patients and staff – and tomorrow night's shift could well be exactly the same.

What factors and forces shape safe staffing?

Scenarios like the one above are the motivation behind my doctoral research into the factors affecting safe staffing.

Despite abundant research evidence from highly credible researchers, such as US researcher Linda Aiken's work on nurse staffing, burnout and patient mortality, and widespread and comprehensive evidence-based strategies, safe staffing for nurses remains an unresolved conundrum in New Zealand and abroad.

This is because nursing safe staffing is not, and cannot be, a magic fixed number. Patients' care requirements are dynamic, they fluctuate and surge, and, though predicting these requirements is increasingly sophisticated, meeting them safely every hour of every day in every unit is a challenge that few, if any, healthcare providers achieve and sustain long term. And where the requirements are not met safely every hour of every day, patients are at risk of harm. Harm to patients, as a result of unsafe staffing, is an unlovable outcome of care for nurses.

New Zealand's evidence-based safe staffing strategies for nursing combine the best of overseas evidence and experience with homegrown initiatives and on-the-ground testing, including the acuity-based Care Capacity Demand Management (CCDM) system developed by the joint union and district health board Safe Staffing Healthy Workplaces Unit.

There have been some significant gains from these strategies, but to date it appears their scale and penetration into DHBs falls short of what was hoped for. This seems to be the result of the complexity of the healthcare environment, including competing priorities and tensions between a safe and socially just standard of care, constrained funding and the ever-present drive for productivity and efficiency.

Can you help?

My doctoral research project aims to uncover some of the factors and forces that result in shifts like the Sandra scenario above, while acknowledging that these same factors and forces are also present when shifts are safely staffed and the nursing team leaves feeling satisfied with the care provided.

Some of the project findings are likely to reflect the complexity and tensions of the healthcare environment, but where do these complexities and tensions originate? And how do they have such a powerful effect on how a shift actually plays out?

This study aims to begin with a small group of nurses describing their everyday experience of 'safe staffing' and 'unsafe staffing' shifts in public hospitals and will then investigate, on their behalf, how their shifts are organised to occur as they do.

This research will not evaluate individuals or organisations or speculate on whether organising factors and forces are right or wrong – it is concerned with what these factors and forces are and how they affect everyday work. It is not concerned with who or why.

I want to interview DHB registered nurses working in direct patient care in clinical areas such as surgery, paediatrics, medicine, maternity, mental health, acute planning and emergency and outpatient departments.

I would also like to interview a small number of clinical nurse managers and duty nurse managers. Your contributions will be anonymous and confidential. Nurses' contributions will be anonymous and confidential.

Your experiences and perceptions will form the basis for the study, which will go on to examine the wider safe staffing context, including legislation, policy formation and implementation and local documents and practices.

If you are interested in being interviewed and describing your on-the-ground, everyday experience of safe staffing, please contact me at R.Mckelvie@massey.ac.nz.

AUTHOR: Rhonda McKelvie is a registered nurse and PhD scholarship student. She currently works (very much part time) as a programme consultant for the Safe Staffing Healthy Workplaces Unit.

N.B. References for this article are available in the online edition at www.nursingreview.co.nz.

Appendix 2

INFORMATION SHEET

Project Title: *'Where we are and how we got here': An Institutional Ethnography mapping the ruling relations of nursing safe staffing in New Zealand.*

What is the study about?

This is a research project investigating the factors that brought Care Capacity Demand (CCDM) Management into existence as a safe staffing solution in NZ. This research will focus on factors in the NZ health sector environment embedded in key documents, programmes and policies and will seek the views of key informants.

Who is leading the research?

The researcher is Rhonda McKelvie and she is a PhD candidate with Massey University and a programme consultant for the Safe Staffing Healthy Workplaces Unit. Rhonda is undertaking this study to contribute to knowledge about how safe staffing policies become practicable solutions, and in what social and political environments such innovations succeed or fail.

How is the research being supported?

The research is supported by a doctoral scholarship from Massey University

What do I have to do if I agree to be part of the research?

If you agree to be part of the research you will be involved in either1-2 focus group interviews or 1-2 individual interviews (this can be by Skype or over the phone, or face to face). These will be in your place of work at your convenience and will take no longer than 90 minutes each. If the researcher needs to clarify anything with you from the transcribed interviews, this will be done on the phone or by email and will take no longer than 15-30 minutes.

How do I volunteer?

Please email: Rhonda McKelvie at R.Mckevie@massey.ac.nz and state that you would like to be involved in the research. Prior to the interview, you will need to sign a consent form. This will be kept under lock and key for five years after you sign it and then destroyed by shredding (this is standard practice in University research projects). The researcher will contact you to make a time at your convenience for an in person, skype or phone interview.

If I participate, what are the benefits?

The knowledge gained from this research will contribute to a broader understanding of how nurses and nursing can engage in policy implementation in both practical and operational ways. Additional knowledge will be gained on the impact of the provider/ union partnership in advancing staffing initiatives alongside ways to achieve and sustain health innovation, and change agency in the NZ healthcare sector. It may also contribute to knowledge of interested international parties about the social and political environments in which such innovations succeed or fail.

If I participate, what are the risks of being involved?

The personal risk to people is minimal in IE research because it is predominantly focused on how the texts of the social and political environment coordinate what people do. It does not judge the authors or users of these documents it simply maps the course of their construction and activation as part of the activity of safe staffing. It describes the 'how' and the 'what' of the daily work of safe staffing and then looks upwards and outwards to understand why this is as it is. An IE is not concerned with the 'who' or the 'why'.

If I participate, what are my rights?

You are under no obligation to accept this invitation. If you decide to participate, you have the right to withdraw from the study at any point; ask any questions about the study at any time during participation; decline to answer any particular question. When the project is concluded, you will receive an Executive Summary of our final report and will be given access to the full

report upon request. In addition, transcripts of your interview can be returned to you if you wish to retain them.

If I participate, how will the data be managed and stored?

Raw data will be stored securely in password-protected electronic files or locked filing cabinets for five years after completion of the project when it will be destroyed. This will be on a personal hard drive, not in cloud-based files.

Who else is involved in this research?

From Massey University, my research Supervisors are Professor Jenny Carryer (Palmerston North) and Dr Kerri-Anne Hughes (Palmerston North). An additional supervisor, Dr Janet Rankin, will participate as an international methodology expert (Canada).

Participants include the Safe Staffing Healthy Workplaces Unit team, and authors and activators of key texts (paper, electronic, visual, and auditory) that emerge from the study as key documents coordinating safe staffing activity. This will most likely include members of the healthcare unions, DHB CE's, members of the Ministry for Health, Directors of Nursing, and Professional body representatives.

If I participate, what do I do if I have concerns about the research?

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 16/01. If you have any concerns about the conduct of this research, please contact Dr Rochelle Stewart-Withers, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 356 9099 x 83657, email humanethicsouthb@massey.ac.nz

Who should you contact about further information about the research?

Please contact me in the first instance at R.Mckevie@massey.ac.nz or primary supervisor Professor Jenny Carryer at J.B.Carryer@massey.ac.nz

Yours sincerely,

Rhonda McKelvie

PhD Candidate
Massey University

Appendix 3

MASSEY UNIVERSITY
COLLEGE OF HEALTH
TE KURA HAUORA TANGATA

Project Title: *'Where we are and how we got here': An Institutional Ethnography mapping the ruling relations of nursing safe staffing in New Zealand.*

PARTICIPANT CONSENT FORM – FOCUS GROUPS & INTERVIEWS

This Consent Form is the equivalent of a legal document that has been signed by the participants agreeing to participate in the research focus groups and interviews.
This form will be held in confidential and locked storage for 5 years after it is signed then destroyed by shredding.

- ❑ I have read the Information Sheet and have had the details of the study explained to me.
- ❑ My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.
- ❑ I understand that participation in the research is voluntary and I can withdraw my consent at any time
- ❑ I understand that my participation is confidential and nothing that identifies my by name, role, organization or geography will appear in the report
- ❑ I understand that the content of the focus group discussion is confidential and I will not disclose anything of what is discussed to anyone outside the group.
- ❑ I agree/do not agree to the interview being sound recorded.
- ❑ I wish/do not wish to have my transcripts/summary of my recordings returned to me.
- ❑ I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: _____ **Date:** _____

Full Name - printed _____

Researcher: Rhonda McKelvie contact me at R.mckelvie@massey.ac.nz
Ethics Approval number 16/01

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