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# WORKAROUNDS AND TENSION: HEALTHCARE WORKERS' OCCUPATIONAL EXPERIENCES WITH WORKAROUNDS

BY

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## Approval of Thesis

The undersigned certify that they have read the thesis entitled

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## Abstract

The purpose of this interpretive description study was to seek a better understanding of workers' occupational safety experiences with workarounds. In recent years, the phenomenon of workarounds in healthcare has received considerable attention, but little of that attention has been directed at workers' occupational safety experiences.

Seven participants from a rural western Canadian health region, representing a range of nursing related positions, described their experiences via semi-structured face-to-face interviews. Data from these interviews was coded and subsequently categorized into four themes: *being heard, meeting expectations, upholding values* and *finding a balance*. From these themes, a proposed explanatory framework based on general systems theory is offered to healthcare stakeholders as a tool to better understand and manage workarounds in their workplaces. But most significantly, what the researcher offers in this study is insight into healthcare workers' descriptions of tensions related to their experiences with workarounds.

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# CHAPTER I

## Introduction

Healthcare workplaces are fraught with health and safety hazards for workers. Data published on the Human Resources and Skills Development Canada (2015) web site indicated that healthcare workers rank sixth highest across all industries for being injured at work, resulting in lost time compensation. In 2014, Saskatchewan Workers' Compensation Board data identified healthcare organizations as having one of the highest numbers of claims involving compensation for time lost due to injuries at work; associated premium costs to 459 healthcare employers was $39.7 million. Rising workers' compensation costs have led to legislative and policy changes to create more effective healthcare human resources management. Statistics, such as these in other jurisdictions, have in turn has been the catalyst for healthcare employers to improve their safety management systems for better occupational safety (Dyck, 2015; Ontario Health Quality Council, 2010; Rogers, 2003; Sikorski, 2009; Zontek, Isernhagen, & Ogle, 2009).

Occupational health nurses working in healthcare settings have a vested interest in assisting healthcare workers to maintain health and safety in their workplaces. Occupational health and safety involves assessment and control of physical, psychological and social hazards. Sources indicate that the leading causes of injuries among healthcare workers are related to moving and handling clients and exposures to blood and body fluids (Borner & Roithmayr, 2007; Bos, Krol, Van der Star, & Groothof, 2006; Chowdbury & Endres, 2010; Saskatchewan Workers' Compensation Board, 2014; Thomas, DePaul Brown, Hodges, Gandy, Lawson, Lord, & Williams, 2006).

Researchers have attempted to understand why there is a high rate of work related injuries among healthcare workers by studying components of the safety management system such as introduction of mechanical client lifting equipment (Amick et al., 2007; Borner & Roithmayr, 2007; Dawson et al., 2007). Others have considered safety culture, organizational practices and human factors including stress (Bos, Krol, Van der Star, & Groothof, 2006; Chowdhury & Endres, 2010; Thomas et al., 2006). Research strategies have included both quantitative and qualitative studies and recently, researchers have pointed to a phenomenon described as workarounds (Beaulieu & Freeman, 2009; Debono et al., 2013; Halbesleben, 2010) as a contributor to worker and client safety concerns. Few researchers have, however, considered the impact of workarounds on healthcare workers' occupational safety in the workplace.

**Purpose of the Study and Research Question**

The purpose of this interpretive description study was to seek to understand healthcare workers' occupational safety experiences with workarounds with the aim that this information would benefit healthcare stakeholders, including occupational health nurses, in developing workplace safety management practices. Although this study did not focus on client safety concerns, there is compelling evidence that the safety and wellbeing of healthcare workers corresponds to that of clients (Hofmann & Mark, 2006; Lundstrom, Pugliese, Bartley, Cox & Guither, 2002; Sikorski, 2009; Yassi & Hancock, 2005). In this study, healthcare workers' occupational safety experiences with workarounds were investigated to add to the understanding of this phenomenon. The central research question in this study was, "What are healthcare workers' occupational safety experiences with workarounds?"

## Significance of Study

Previous researchers have suggested there is a culture in healthcare conducive to the use of workarounds that may in turn impact workers' occupational safety (Amalberti, Vincent, Auroy, & Saint Maurice, 2006; Halbesleben & Rathert, 2008). Elements of this culture that may be perpetuating workarounds include blaming frontline workers for errors and organizations not learning from those errors. At this time, little is known about the effects of workarounds on human resources management, their occupational safety or economic consequences, or whether workarounds contribute to the high rate of workplace injuries in healthcare workers.

## Definitions

For the purposes of this study, a *workaround* was defined as an alternate work plan or method, including shortcuts, to circumvent a perceived problem in work flow without eliminating the problem (Lalley & Malloch, 2012; Merriam Webster, n.d.).

The term *healthcare work*er is used synonymously with *worker* and refers to individuals in a nursing related position in a healthcare setting, including registered nurses (RN), nurse practitioners (NP), registered psychiatric nurses (RPN), licensed practical nurses (LPN), nurse managers, and healthcare aides.

The term *client* is defined as any recipient of nursing care regardless of whether the healthcare worker refers to them as patient, client, resident, healthcare consumer or customer.

The *workplace* is the physical location where one works.

*Safety* is defined as being protected against physical, psychological or social harm. When safety is applied to workplace settings, it encompasses worker compliance with standardized work practices put into place by the employer to protect the workers from hazards associated with occupational tasks (Dyck, 2015; Guzik, 2013; Rogers, 2003). An example is nurses using equipment (standardized work practice) to reduce or eliminate the risk of a back injury when moving clients (occupational task).

A *safety management system* is a term used to refer to a comprehensive business management system designed to manage safety elements in the workplace, such as hazard identification and mitigation, and training and safety audits (Bird, Germain, & Clark, 2012).

# CHAPTER II

## Literature Review

In conducting the literature review for this study, the following databases were searched: Medline (PubMed), ProQuest, Google Scholar, and Cumulative Index of Nursing and Allied Health Literature (CINAHL). Keywords used included workaround (and its alternates, work-around, work around), deviance, normalization of deviance, healthcare worker (with nurse as alternate), occupational injury, workplace, safety culture, culture and safety. Literature on workarounds is relatively new so documents published or written in English and only in the year 2000 or later were retrieved. Although most documents used were published in journals and texts, some unpublished documents, including a PowerPoint presentation (Halbesleben & Clark, 2009), were also used. Literature was obtained from several disciplines including information technology, psychology, and nursing. The goal was to determine what had already been learned about workarounds and, more specifically, about their antecedents and consequences, and whether there was literature specific to occupational safety.

Results of the search revealed numerous studies about workarounds related to client safety issues and, more specifically medication administration. Additional literature was gleaned via reference lists in several journal articles retrieved in the search. The majority of literature originated in the United States, however, two Canadian studies specifically addressed workarounds (Deforge, van Wyk, Hall, & Salmoni, 2011; McLarney, Cashin, Cashin, Colegrave, & Luscombe, 2012). Methods used included cross sectional surveys (Halbesleben, 2010; Halbesleben, Wakefield, Wakefield, & Cooper,

2008), qualitative studies using ethnography (DeForge et al., 2011) and observation (Tucker, Heisler, & Janisse, n.d.), narrative inquiry (Lalley, 2014) and concept analysis, (Lalley & Malloch, 2010) and three systematic reviews, with one of those focusing on antecedents and consequences of workarounds (Halbesleben, Wakefield, & Wakefield, 2008). Of the studies found, few offered insight into healthcare workers' experiences with workarounds from an occupational safety perspective.

The literature search has been organized into three broad categories: safety management, workplace culture and workarounds. The category on workarounds is further sub-divided into sections on definitions, antecedents, consequences, and a concluding category on a theoretical framework for this inquiry.

**Research on Safety Management**

Many developments in occupational safety management, including worker training and the introduction of client moving equipment, have had limited impact on injury rates among healthcare workers (Borner & Roithmayr, 2007; Yassi & Hancock, 2005; Zontek et al., 2009). The province of British Columbia's healthcare agencies managed an overall reduction in healthcare workers' occupational injuries between 2001 and 2004 by incorporating such interventions (Borner & Roithmayr, 2007). During this time, Worksafe BC (2004) statistics showed injury rates (calculated as number of claims for all injury types per 100 person-years of employment) for the healthcare and social assistance sectors dropped from 5 in the year 2000, to 3 in 2004. Corresponding statistics for all other provincial sectors decreased from 3.9 to 3.1 in the same time period. Although there was a reduction in the number of workers' injuries associated with lifting

tasks within this timeframe, Borner and Roithmayr (2007) noted there were still significant numbers of injuries among workers involved with repositioning patients. Injuries resulting from repositioning tasks continue to constitute the bulk of musculo-skeletal injuries for healthcare workers, as reported by many healthcare agencies (Halbesleben, 2010; Saskatchewan Workers' Compensation Board, 2014; Zontek et al., 2009).

Ongoing occupational injuries among healthcare workers led researchers to engage in additional studies to determine what might be done to ensure occupational safety of healthcare workers. The authors of two separate systematic reviews were however unable to provide conclusive evidence about the impact of training and equipment on reducing musculo-skeletal injuries in healthcare workers (Amick et al., 2007; Dawson et al., 2007). A cross-sectional study by Zontek et al., (2009) focusing on possible reasons for healthcare workers' injuries, led them to consider various elements of the safety management system including leadership, hazard identification, risk reduction using processes of elimination, substitution or redesign of processes, workplace policies and procedures, training, supervision and regular evaluation of the safety management system. Zontek et al., (2009) found that of all these elements, training and supervision had the greatest impact on worker safety and that workload and the unpredictable nature of client care deserved further consideration.

These findings were supported by other researchers who considered factors such as individual workers' attitudes towards safety, workers' personal health and the effects of stress and fatigue on workers' risk of injuries (Canadian Nurses Association & Registered Nurses Association of Ontario, 2010; Chowdhury & Endres, 2010; Dejoy,

Searcy, Murphy, & Gershon, 2000; Estabrooks et al., 2009; Geiger-Brown et al., 2004; Halbesleben, 2010; Nahrgang, Morgeson, & Hofmann, 2011; Oliver Cheyne, Tomas, & Cox, 2002; Paletz, Bearman, Orasnu, & Holbrook, 2009; Ross, 2008). These studies contained specific recommendations about improvements not only for individual actions, but also for organizational and systems strategies including promoting a culture of safety. The organization's safety culture differs from the safety management system in that it refers to the employees' perceptions about organizational practices and priorities for occupational health and safety (Barling, Loughlin, & Kelloway, 2002; Flin, Burns, Mearns, Yule, & Robertson, 2006).

**Research on Safety Culture**

Strong safety cultures have also been associated with reductions in workplace injuries, which suggests safety culture is a motivator for working safely (Barling, Loughlin, & Kelloway, 2002; Hofmann & Mark, 2006; Oliver, Cheyne, Tomas, & Cox, 2002; Parker, Axtell, & Turner, 2001). This aspect of healthcare has been difficult to study, in part due to the complex linkages associating worker and client safety (Hagopian, Singer, Curry-Smith, Nottingham & Hickner, 2012; Hofmann & Mark, 2006; Lundstrom et al., 2002; Sikorski, 2009; Yassi & Hancock 2005). In many situations, the relationship between safety culture, client safety, and workers' occupational injuries is moderated by both variability and complexity of client care (Chowdhury & Endres, 2010; Hofmann & Mark, 2006.)

In order to explain this safety culture, several researchers have attempted to associate healthcare safety practices with those of high reliability organizations (HROs).

HROs have ties to public safety and include, for example, the aviation industry, firefighting and nuclear power plants. They are defined as organizations that have succeeded in avoiding catastrophes in an environment where accidents are expected due to their complex relationship with the general public (Carroll & Rudolph, 2006). HROs achieve safety through simplifying and standardizing operational tasks in order to anticipate those events that could result in a disruption in safety practices (Carroll & Rudolph, 2006; Christenson, 2007; Reason, 2000). These organizations encourage activities and engineering designs that force system changes rather than relying on individual actions to ensure effective safety outcomes. They also expect that people will make mistakes and thus they challenge the system, rather than the individual, in proactively preventing accidents (Amalberti, Vincent, Auroy, & de Saint Maurice, 2006; Cafazzo & St. Cyr, 2012; Carroll & Rudolph, 2006; Christenson, 2007; Fogarty & Shaw, 2010; Reason, 2000). What many researchers have determined is that unlike HROs, healthcare organizations rely on human behavior changes, using tools such as training and standardized checklists, albeit with limited success (Cafazzo & St.Cyr, 2012; Halbesleben & Rathert, 2008; Yassi & Hancock, 2005).

Amalberti, Vincent, Auroy, and de Saint Maurice (2006) argue that the healthcare industry differs from other high hazard industries because clinical judgment requires flexibility within safety protocols, thus allowing deviance from the standard operating procedure. They further suggested that certain theories could explain why workers deviate from a standard safety protocol. One theory related to organizational culture is normalization of deviance and was first described by Vaughn (1997) who extrapolated that as workers deviate from standard procedure, these deviances gradually become the

normal routine, as long as there is an absence of negative effects. In addition, there must also be tolerance for deviation from others in the organization. Another framework offered by Amalberti and colleagues (2006) suggests that individual motivation and attitude play a role, which fits with Ajzen's (1991) theory of planned behavior which proposes that the likelihood the worker will deviate from standard procedures is determined by the worker's perceptions of the consequences, social influences in the workplace, their beliefs about control and moral codes (Amalberti et al., 2006; Ajzen, 1991). Drawing from French and Russian occupational psychology of tradition, Amalberti et al. (2006) also suggest that workers use these deviations to cope with conflicting demands of complex work situations and that the deviation reflects flexibility and adaptation on the part of the worker. This notion closely mirrors ideas in the current nursing literature where authors discuss the creative use of workarounds (Beaulieu & Freeman, 2009; Morath & Turnbull, 2005).

**Research on Workarounds**

Workarounds are phenomena of interest in healthcare research. Several researchers have associated them with client safety concerns related to medication administration, medication errors, over-sedation of clients and borrowing supplies such as blood products from another unit (Kobayashi, Fussell, Xiao, & Seagull, 2005; McLarney et al., 2012; Halbesleben, Wakefield, Wakefield, & Cooper, 2008; Prielupp, Magro, Morelli, & Brull, 2010). There are suggestions that workarounds have positive benefits, such as the following description of a workaround as being a "creative, redesigned process that facilitates care to patients by providing opportunities for nurses, designers, regulators, and administrators to interact and produce novel patterns or knowledge"

(Lalley & Malloch, 2010, p. 31). Others have proposed that workarounds have potential for unsafe results, including injuries to workers or clients (Amalberti et al., 2006; Halbesleben & Clark, 2009). This begs the question of whether nursing and healthcare in general should embrace workarounds as a creative means of problem solving or, as some researchers have suggested, signs of a system issue with inherent safety risks (Beaulieu & Freeman, 2009; Halbesleben & Rathert, 2008; Prielupp, Magro, Morelli, & Brull, 2010; Tucker & Edmondson, 2003). The diverse opinions on workarounds supports the suggestions of Amalberti et al. (2006) that normalizing workarounds erodes the safety culture of an organization; yet, healthcare workers frequently use these workarounds to ensure work is being done (Amalberti et al., 2006; Kobayashi et al., 2005; Paletz, Bearman, Orasnu, & Holbrook, 2009). Further literature review revealed some of the reasons why healthcare workers use workarounds, however very little information was available on the consequences of workarounds for healthcare workers' occupational safety.

**Definitions of workarounds.**

The term workaround was first used in the field of information technology to refer to a temporary fix for a problem identified in software programs (Lalley & Malloch, 2010; Vestal, 2008). According to the Merriam Webster on-line dictionary, a workaround is defined as "a plan or method to circumvent a problem (as in computer software) without eliminating it" (Merriam Webster, n.d.). Vestal (2008) describes workarounds as calling "attention to things that need to be fixed that generate inefficiencies and frustrations" (p. 9).

The term workaround is not indexed in academic literature databases and very few studies offered definitive descriptions of a workaround, which resulted in challenges for searching the literature (Debono, Greenfield, Travaglia, et al., 2013). As well, Debono et al., (2013) identified that behaviours associated with workarounds are difficult to define, thus leading researchers to develop their own operational definitions. During the search, other words that were used in similar context to workaround included first order problem solving, bricolage and shortcuts. Shortcuts were perceived as a form of workaround that dealt specifically with time (Halbesleben, Wakefield, & Wakefield, 2008). For example, the worker attempts to resolve the problem of time by eliminating part of the procedure (Lalley & Malloch, 2010). Alter (2014) describes bricolage as "making do with what is at hand" (p. 55). Tucker and Edmondson (2003) defined first order problem solving as a solution to a process failure that disrupts workers' abilities to carry out a task. They further stated that the solution may not necessarily result in harm however the system block has not been improved or removed. In his commentary, Halbesleben (2011) acknowledged first order problem solving as being the same as a workaround.

Some authors separated workarounds from errors by describing errors as situations where the final outcome is not what was intended and generally resulted in harm. This notion of harm differed from the predominant conclusion that workarounds do not always lead to harmful consequences therefore should not be considered an error (Amalberti et al., 2006; Halbesleben, 2010; Lalley & Malloch, 2010). Alter (2014) theorized that workarounds are processes "driven by the interaction of key factors" (p. 1041) that in turn determine if the worker chooses to use a workaround. These key factors

involve specific processes, organizational or personal goals, obstacles, or constraints that are perceived to be overcome and the worker's ability to execute the workaround.

Many researchers agree with Alter (2014) that workarounds have a specific motive, which is to maneuver around a perceived barrier or system block in their work (Amalberti et al., 2006; Halbesleben, Wakefield, & Wakefield, 2008; Lalley & Malloch, 2010; Morrison, 2015; Tucker & Edmondson, 2003). In a scoping review, Debono, Greenfield, Travaglia et al. (2013) concurred but suggested more information was needed to measure the consequences of workarounds. Their findings suggested that workarounds had potential to be both positive and negative, not only for the client but also the staff and the organization. For example, a workaround could meet the client's needs thus decreasing stress for staff and providing acceptable organizational outcomes. The same workaround could also set the stage for a client or staff injury. Halbesleben, Rathert and Bennett (2013) developed a workaround tool that would assist administrators to capture potential sources of workarounds, but no studies were found indicating that this tool had been used to measure the impacts of workarounds on occupational safety.

**Antecedents, consequences, and characteristics of workarounds.**

Results from previous inquiries related to workarounds left authors speculating about antecedents that are predictive of workarounds. Potential antecedents identified from these studies included blocks in workflow, work demands, poorly designed work systems, organizational policies, protocols, legislation, people factors and technology (Debono, Greenfield, Black, & Braithwaite, n.d.; Halbesleben, Wakefield, & Wakefield, 2008; Lalley & Malloch, 2010; McLarney et al., 2012). For example, demands for client

centered care balanced with workplace safety legislated requirements may result in workers using a mechanical lifting device alone in order to mobilize the client because they perceive waiting for help with the lift as a barrier to good client care. Organizations may inadvertently be creating blocks in their efforts to ensure greater reliability and quality of work, if the organization fails to consider the effects of a poorly designed policy or work process (Geiger-Brown et al., 2004; Halbesleben, Savage, Wakefield, & Wakefield, 2010; Morrison, 2015). Tucker (2009) noted healthcare workers confront at least one block in workflow every hour; however the full magnitude of this issue is unknown because workers have been successful at improvising solutions to system blocks. While this resilience may have immediate benefit, the negative consequence is that little is done to remove the system barrier (Morrison, 2015; Tucker, 2009). Amalberti et al. (2006) suggested that workarounds are poorly documented because of the voluntary reporting process in healthcare that may leave the individual feeling open to accusations of misconduct in spite of no intention of harm and no harm done (Amalberti et al., 2006).

Consequences of workarounds are poorly identified. Halbesleben, Wakefield, and Wakefield (2008) proposed in their systematic review that workarounds were perceived negatively yet these researchers made little effort to "quantify the risk" in order to validate their claims (p. 7). One of the reasons that consequences of workarounds have not been quantified is the difficulty in identifying potential sources of workarounds and generally, the workaround (Halbesleben, Rathert, & Bennett, 2013). Halbesleben, Rathert, and Bennett (2013) suggest that identifying workarounds by "observing or interviewing staff [can] lead to underestimation of workarounds" (p. 54) because workers will alter their behaviors in response. Often workarounds are under-reported because

workers fear they could be subject to disciplinary action if the workaround did have negative consequences (Deforge et al., 2011; Halbesleben, Wakefield, Wakefield, & Cooper, 2008; Morrison, 2015; Tucker & Edmondson, 2003). Morrison (2015) noted that during times of resource shortages, workarounds could be subtle and difficult to pinpoint because workers adapted to ensure work was being done. As more research is being completed on workarounds, the messages provided by these researchers is that the greater amount of standardization of healthcare work practices, the greater the increase in numbers of workarounds used (Wheeler, Halbesleben, & Harris, 2012; Morrison, 2015).

In their ethnographic study, Kobayashi et al. (2005) attempted to link workarounds to consequences by suggesting that workarounds have four key characteristics. The first is that workarounds differ depending on the person's work role. For example, a manager would have more or different resources than a direct care worker and thus would deal differently with a system block. The second is that workarounds may need other workers who are willing to participate, such as another worker willing to help mobilize a patient without appropriate mobility equipment. Third, workarounds can have a cascading effect which means a system bypass in one area can have a downstream effect in another area. For example, borrowing a mechanical lifting device from another nursing unit leaves that unit short and requires those workers to potentially improvise or work around this new block. Lastly, workarounds rely on the principle of fairness and who owes whom a favor. For example, workarounds "were threaded in the sense that people who provided favors were likely to come back with their own request for a favor" therefore, potentially increasing the numbers of workarounds (Kobayashi et al., 2005, p. 1564).

The findings of Kobayashi et al. (2005) support the suggestions of other authors who have recommended that future research look at where workers are investing resources to test whether workers are diverting resources to tasks that they perceive as being more rewarded such as benefits for clients' wellbeing (Burke & Signal, 2010; DeForge et al., 2011; Halbesleben, 2011). DeForge et al. (2011) conducted a critical ethnographic study in which they found that decisions made by direct care workers to use workarounds were significantly impacted by the introduction of policies reflecting government's newly legislated changes for improving client care in supportive long term care facilities. The workers in this study described a lack of empowerment that eroded their ability to care that was directly related to having to comply with the new policies.

Workers who perceived being empowered at work were less likely to use workarounds (Halbesleben & Clark, 2009), however, Halbesleben (2011) also proposed that workers who were encouraged to make their job more efficient might be crafting their jobs to avoid blocks, thus creating potential for more workarounds. Other researchers have also questioned whether healthcare workers recognize that they are using workarounds and if they can identify the potential consequences of using workarounds (DeForge et al., 2011; Lalley & Malloch, 2010; McLarney et al., 2012; Vestal, 2008).

Tucker (2009) suggested that communications may have a role in identification and use of workarounds. Amalberti et al. (2006) discussed a similar idea by suggesting that individuals who are "pressured to cut corners in order to increase performance" (p. i69) come to believe that the workarounds are sanctioned because management is tolerating these lapses. They also suggested that there are workers who are willing to

recklessly disregard basic procedures. Uncontrolled, these individuals pose a danger to other workers and to the public served by the healthcare system, (Amalberti et al., 2006).

Cafazzo and St. Cyr (2012) suggested that dependence on human performance is impractical because of the likelihood that human errors will occur, and that systems should be designed to eliminate human error. They further advocated that healthcare workers need to voice their concerns about system problems by demanding better technologies and workflow design. This supports suggestions that a culture looking for system failures, instead of blaming individuals, may be less conducive to workarounds (Eisenberg & McDonald, 1988; Halbesleben, 2011; Halbesleben & Clark, 2009; Halbesleben, Wakefield, Wakefield, & Cooper, 2008; Lowe, 2008; Tucker, 2009). Alter (2014) suggests that workarounds are a springboard that can lead to long term planned change. In turn, Rasmussen (1997) argued that complex highly hazardous systems involve several levels of risk management and that multiple theories need to be considered to better understand safety breaches within such systems. His contention is that workers follow a process that appears to be productive. Rasmussen (1997) recommended not fighting to control workarounds, but instead developing coping skills within workers because of these complexities. This approach to risk management involves workers focusing on the identification of boundaries of safe operations that they could use to compensate for variations in a dynamic environment (Rasmussen, 1997).

**Workarounds and general systems theory**

Current literature guiding occupational health nurses' practices suggests that system failures, and not individual actions, are what result in a safety incident (Dyck,

2015; Guzik, 2013; Rogers, 2003). While there are several theories about accident causation, Reason's (1990) Swiss cheese model is frequently used (Halbesleben, Wakefield, & Wakefield, 2008; Reason, 2000). This model suggests that similarly to layering Swiss cheese on a sandwich, in an ideal workplace setting, several layers of defenses are used to protect against hazards. Holes in these defenses, like the holes in the cheese, sometimes line up thus leaving open space, or no defenses and, therefore accidents occur (Reason, 2000). These "holes" can result from active failures which are unsafe acts committed by individuals, or they can result from latent conditions, such as worker fatigue, that leads to weaknesses in the layers (Reason, 2000).

Another well-known theory widely accepted by occupational health nurses is von Bertalanffy's general systems theory (1968) that proposes systems are open, adaptive and continually seeking equilibrium (Rogers, 2003; von Bertalanffy, 1968). (See Figure 1 - General systems theory and occupational safety). Within this theory, and within the context of occupational safety, inputs are hazard identification and allocation of resources. Throughputs are the work being done, using input resources, procedures and work activities and outputs of the occupational health unit system are healthy workers, (Rogers, 2003). The feedback mechanism uses information from the outputs as a measure of the effectiveness of the system and links the outputs back to the inputs (Current Nursing.com, 2012; von Bertanlanffy, 1968). From this theoretical stance, workarounds would be the throughputs resulting from the inputs as part of the work being done. Outputs would be the results of using the workarounds. What is uncertain, is the effects of the feedback loop.

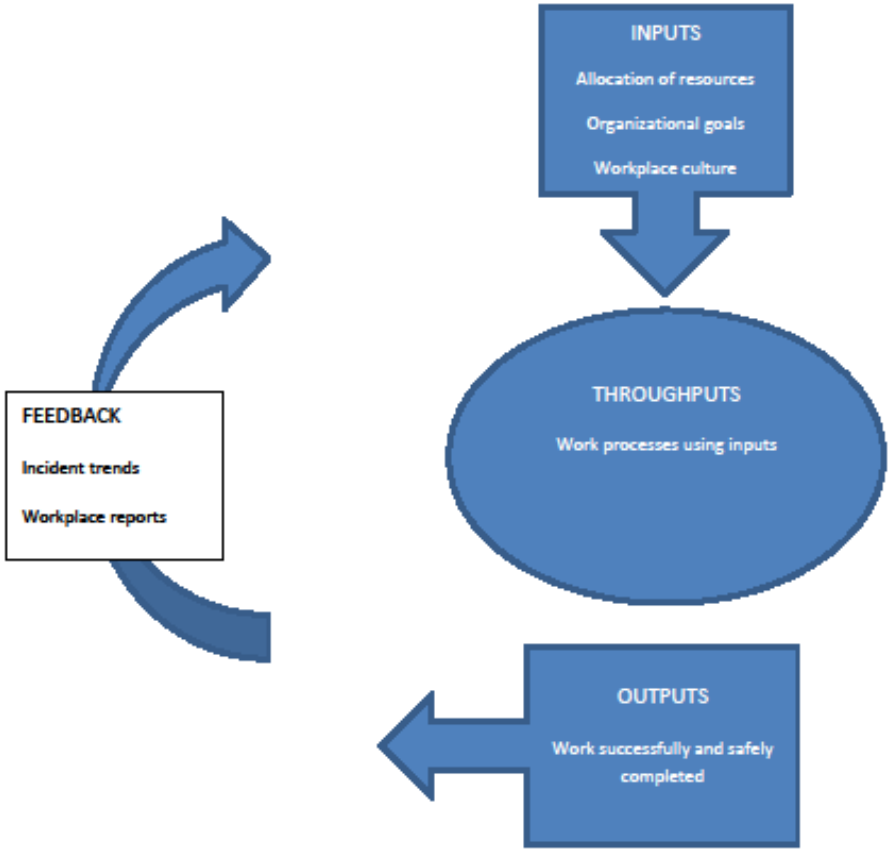


*Figure 1*. General systems theory and occupational safety. Adapted from Von Bertalanffy, L. (1968). *General systems theory: Foundations, development, applications.* New York: George Braziller.

Occupational health nursing, a specialized field of community health nursing, involves knowledge about complex work processes, related hazards, mechanisms of exposure, and the means to mitigate or control risks, (Guzik, 2013; Rogers, 2003). One aspect of occupational health nursing practice is monitoring the workplace to assess and recognize health or safety hazards that could result in illness or injuries to workers. Health hazards are those elements that can cause illness, such as an exposure to blood or body fluids, whereas safety hazards are events that may result in the worker being injured, such as the inappropriate use of lifting procedures that could lead to a back injury. These workplace hazards, once identified, are generally controlled through the workplace safety management system. Any variation or lack of compliance in using these processes or controls results in the potential for a safety incident or accident (Dyck, 2015; Reason, 1990; Rogers, 2003). Thus, workarounds, as alternate work plans or methods, including shortcuts, used to circumvent a perceived problem in work flow without eliminating the problem, are a cause for concern.

**Summary**

Without a clear understanding of workarounds, it is difficult to determine whether healthcare workers have the necessary skills to safely and effectively problem solve obstacles blocking their daily work. Not always are workers at risk; however, the potential remains for some workarounds to be harmful to workers and costly to organizations in terms of Workers' Compensation Board costs and human resources management. Because client safety has been linked to worker safety, this lack of knowledge about workarounds could have a downstream effect on client care outcomes. What is known is that the tools of effective safety management systems will assist in

keeping workers safe at work, as do organizations with a strong safety culture (Mullen & Kelloway, 2009; Zacharatos, Barling, &Iverson, 2005). What is not understood is why workarounds flourish in healthcare. The results of this literature search suggest that more information is needed to better understand workarounds and their effects on healthcare workers' occupational safety in the workplace.

# CHAPTER III

## Methods

In this chapter, rationale is provided for choosing interpretive description along with a description of the theoretical underpinnings of the interpretive description research approach. The purpose of this study, the research setting, ethical considerations, descriptions of the data collection and analysis techniques, including comparative analysis and strategies used to ensure credibility, will also be presented. From this point forward, the first person is used when relevant to the assumptions and activities undertaken by the researcher.

I chose interpretive description (Thorne, 2008), which has its roots primarily in grounded theory, to facilitate my interpretation of healthcare workers' descriptions of their experiences with workarounds because workarounds in healthcare are not well understood. Qualitative research methods are intended to be primarily exploratory and to help gain a better understanding of underlying reasons for why something occurs. Most significantly, Thorne's (2008) intention for interpretive description is to aid in answering a clinical practice question.

Many qualitative research projects are based on a conceptual or analytic framework. Thorne (2008) suggests this language is misleading and that theoretical scaffolding is a better description for the disciplinary and theoretical positioning of a study. Through scaffolding, the researcher sets up the initial position from which to build the research design. Two critical elements in effective scaffolding are the literature review and the identification of the researcher's disciplinary and theoretical allegiances.

In scaffolding this study, I had to consider my years in nursing practice, including the past 10 years as an occupational health nurse, that have given me considerable insight into what I perceive as both the art and the science of nursing and how that translates into client care. I value safety for both healthcare workers and clients. Evidence informed practice and ethical decision-making are an important part of the fabric of who I am as a nurse. I draw from many philosophical and theoretical perspectives in my practice including those of nursing theorists such as Sister Callista Roy and Martha Rogers. I believe that every person is an autonomous system within a greater set of systems. A person must be respected for who they are and how they, as a system, respond to the greater systems around them, whether that is the family, the environment, the workplace or a combination of each.

When I initially began the literature review, my focus was on why healthcare workers had a significantly high injury rate. As I continued to review journal articles and occupational health nursing textbooks, I found a patient safety article describing workarounds as a possible consequence of worker fatigue. It was at this point that I began to focus on whether workarounds might be pertinent to healthcare worker safety.

Within a research project, the researcher may bring assumptions and one assumption that I made as an occupational health nurse is that any deviation from an established work practice may have unintended consequences, including injury to the worker and /or the client. As I began my research, I viewed workarounds from a negative perspective. Several times during the data collection and analysis processes, I needed to step back and examine this particular bias and whether it was influencing my thinking. Recognizing and acknowledging this bias from the outset was important in ensuring that

it was not reflected in my research questions or my interactions with participants. It also helped me develop explanations to assure my research participants that I was conducting this study within the context of my role as a student and not that of occupational health nurse. I also had to examine my own perceptions of safety for both the worker and the client. What I learned is I assumed that safety of clients and workers were separate entities. The participants' comments in this inquiry challenged me to rethink that perception.

**Purpose of the Study and Research Question**

The purpose of this interpretive description study was to seek to understand healthcare workers' occupational safety experiences with workarounds with the aim that this information will benefit healthcare stakeholders developing workplace safety management practices. While healthcare workers' experiences may overlap with client safety concerns, the primary focus of the study was workers' occupational safety experiences, whether they were incident free or injury provoking. The question guiding this study was what are healthcare workers' occupational safety experiences with workarounds?

**Research Approach**

Qualitative research focuses on phenomena that are not well understood and generally not amenable to measurement (Creswell, 2007; Richards & Morse, 2007; Thorne, 2008). From a disciplinary standpoint, the lack of understanding about workarounds in the existing literature and the limited information about their impact on

healthcare workers' occupational safety led me to query what healthcare workers' experiences are with workarounds.

Thorne developed interpretive description based on the following stances. She states that interpretive study within the realm of qualitative research recognizes that there are multiple realities that are "complex, contextual, constructed and ultimately subjective" (Thorne, Reimer Kirkham, & O'Flynn-Magee, 2004, p. 5). Thorne (2008) differentiates description in qualitative research from quantitative research by stating that in the former, findings are "based on inductive reasoning" (p. 48) which is a form of logic that relies on the researcher exploring and observing the phenomenon of interest and then gradually shifting those observations to a more general thematic description of the phenomenon. "The product of an interpretive description [study] is a coherent conceptual description that taps thematic patterns and commonalities believed to characterize the phenomenon" (Thorne et al., 2004, p. 7).

Interpretive description is well suited to research questions asking for a description or interpretation of a phenomenon. One of its intended purposes is that it addresses a practice goal (Thorne, 2008). Healthcare worker' experiences with workarounds have not been reflected in the Canadian literature and American researchers disagree on whether workarounds have positive benefits or negative consequences. This suggested that workarounds are complex, highly individualistic and involve multiple realities. Additionally the literature review revealed that previous researchers had used other methodologies such as cross sectional surveys (Halbesleben, 2010; Halbesleben, Wakefield, Wakefield, & Cooper, 2008), qualitative studies using ethnography (DeForge et al., 2011), observation (Tucker, Heisler, & Janisse, n.d.), narrative inquiry (Lalley,

2014) and concept analysis, (Lalley & Malloch, 2010) to study workarounds; therefore, another method, such as interpretive description, would provide an alternate perspective.

**Research Setting**

This study was conducted in a western Canadian rural health region that provides acute care, supportive long term care as well as community and public health services. Initially I attempted to seek entry to a neighboring health region that shared similar characteristics. After several unsuccessful attempts to recruit participants, I sought approval to change the study location.

Within the region, there are approximately 1700 employees representing several professional categories such as nursing, as well as supportive job categories, including environmental services and nutrition support. These employees work from one or more of 18 facilities that include hospitals, nursing homes, health centers and primary health care clinics. Bed capacities within facilities range from 20 to 94.

**Study Population**

Potential participants were to be employed in a nursing role in the organization. The numbers of eligible participants was approximately 750 and included registered nurses (RN), nurse practitioners (NP), registered psychiatric nurses (RPN), licensed practical nurses (LPN), nurse managers and healthcare aides who were interested and willing to participate in the project. Their employment status could be full time, part time or casual.

**Recruitment.**

Initial recruitment of participants was carried out by sending a poster (Appendix A) via a group distribution email already in place within the health region. In light of my position within the health region, I sent this email and included a disclaimer indicating that I was seeking participants in the context of my student role and not as the occupational health nurse. Within a week, five potential participants responded. Approximately two months after the initial recruitment poster was sent, a second email was sent through the same group distribution system seeking additional participants. This second recruitment attempt provided one more participant. Two participants from the first recruitment provided names of two other individuals who might participate in the study; one of those individuals agreed to participate, the other was unable to do so because of personal circumstances.

**The participants.**

Seven female participants were recruited for this study. Five of these individuals were between the ages of 31 and 50 and two were between 51and 65 years of age. Their age ranges are comparable to the average age for regulated nurses in the province of Saskatchewan which is 44.7 years (Canadian Institute of Health Information, 2012). Table 1 provides a further description of their respective roles and the area of healthcare in which they worked. Numbers of years of experience in healthcare ranged between 3 and 25 years.

Table 1

*Participant Demographics*

| | Registered Nurse | | Registered Psychiatric Nurse | | Licensed Practical Nurse | | Healthcare Aide (unregulated) | |
|---|---|---|---|---|---|---|---|---|
| Job Status * | FT | PT–C | FT | PT-C | FT | PT-C | FT | PT-C |
| Acute care | | 2 | | | | | | |
| Supportive Long Term Care | | | | | | | | 1 |
| Community Health ** | 2 | | 1 | | | | 1 | |
| Nurse Manager | | | | | | | | |

* Employment status separated into full time hours (FT) or part time /casual (PT-C).

** Community health includes home healthcare, Public Health, and Mental Health / Rehab nursing

**Ethical Considerations**

The study proposal was submitted to the Athabasca University Research Ethics Board for ethics approval (Appendix B). Once approval was granted, the proposal was then forwarded to the health region's ethics committee. The health region's ethics committee granted ethics approval based on potential impact to the organization, and its staff, and granted permission to seek participants (Appendix C).

Participants were provided an information letter (Appendix D) and signed a consent form (Appendix E), which included an explanation of the proposed research study. Participants were advised they could withdraw at any time as well as decline answering any questions included in the interview. I explained my role as researcher and that I would make every effort to ensure that their identity remained confidential and not linked to any information they provided. I explained I would be using a letter and number

identifier known only to myself. The participants were made aware that during the data analysis process, some information would be shared with my thesis supervisor however this would not include their names or any other identifying information. Participants were also made aware that information would be stored on my own password secure computer and in a locked file cabinet to maintain privacy and security of their information. Digital files were backed-up on an encrypted memory stick that is stored in the locked cabinet.

**Data Collection**

Data collection consisted of using open-ended questions in face-to-face semi-structured interviews with participants. (See Appendix F – Interview questions.) These questions, which were specifically designed to elicit participants' descriptions of their experiences with workarounds, were developed in consultation with my thesis supervisor. Within qualitative research methodology, it is not common to test questions for construct validity; however, content validity was evident in participants' abilities to understand the questions and to describe their experiences with workarounds (i.e. consistency of their responses to them.) The questions were representative of the interpretive description methodology in that they were designed to ask about "described experiences" (Thorne, 2008, p. 99). By making the questions open-ended, participants were not limited in their responses and the questions could be modified during the interview in order for the researcher to gain a deeper understanding of what the participant was describing.

After the participants approached me, they were invited to meet at a location of their preference. In all except two interviews, participants agreed to meet in an office in a facility where community health services were provided. Because this site was multi-

purpose, there were minimal concerns from participants about their confidentiality being breached. The remaining participants chose sites in their respective communities.

The open-ended interview questions used focused on the participants' descriptions of their experiences with, and what they might have witnessed about workarounds being used. They were also asked to describe their perceptions of occupational safety related to these experiences. The interviews were planned to last no longer than 45 to 60 minutes and the average duration was between 30 and 45 minutes. All interviews were audio recorded and the transcriptions were subsequently saved on my password protected computer.

During and following the interviews, I made notes in a research journal. The purpose of this journal was to document my reflective thinking. Authors of qualitative research references recommend the use of such a document during qualitative research to ensure that the researcher does not lose this information (Creswell, 2007; Thorne, 2008). Thorne (2008) suggests that the information in this journal has a valuable role, not as a source of data, but to aid the researcher in "[understanding] the implications of [her] own role in data collection" (p. 109). By using a journal, I was better able to challenge my own assumptions about not only what was happening in the workplace, but also my previous thoughts on workarounds.

Another purpose of this journal was to document analytic thinking during data collection and analysis. This analytic thinking is an integral component of interpretive description requiring the researcher to ask "increasingly complex questions about what it all might mean" (Thorne, 2008, p.153). An example taken from my journal following

one of the interviews was "Would an inexperienced or new staff react differently [than an experienced staff member] when confronted with an obstacle in workflow?" This particular question spurred further thinking that assisted in the development of a workaround framework.

**Data Analysis**

Drawing on the work of Morse (1994), Thorne (2008) describes four sequential cognitive processes that lead to the type of conceptualization required by interpretive description, including *comprehending*, *synthesizing, theorizing,* and *re-contextualizing.* In comprehending, "one learns everything one can about the setting or the experiences of the study participants" (Thorne, 2008, p. 165). While this process starts during data collection, Thorne (2008) notes that it is important for the researcher to take notes and ask questions about the data during the data analysis phase in an effort to delve deeper into understanding the subject being studied, in this case, workarounds. One of the challenges of coding data as sole coder was ensuring I was eliminating bias. By using these notes and reflexive thinking, as well as through ongoing discussions with my thesis supervisor, I was able to identify when bias might be affecting the coding. In the process, I reviewed the coding, and occasionally, re-coded the data accordingly.

I began data analysis by listening to and transcribing the digital recordings of my open-ended interviews with participants in an effort to *comprehend* what they were conveying. Initially, I had planned to listen to brief sections of the recorded interviews, then to speak the passage into DragonSpeak® and allow the software to transcribe it to a MS Word® document. This proved cumbersome and time consuming, so I resorted to a

more traditional transcription method. During the process, I tried to include pauses and other verbal communication, such as laughter, to capture the essence and flow of the conversation. After each interview was transcribed, I checked the transcription against the recorded interview to ensure that I had correctly transcribed the data. I also kept a research journal with detailed memos and analytic notes about initial and subsequent thoughts in order to recall what I had learned from the participants.

The second cognitive process in data analysis is *synthesizing.* This process involves extracting common features from the data and sorting this information into similar patterns. Coding within inductive research becomes an active process and allows experimentation with "different angles of vision" (Thorne, 2008, p. 147). This constant iterative comparison is essential for seeking similarities and differences between and among the data.

Listening to the interviews and reviewing the transcripts multiple times provided an opportunity for me to begin to familiarize myself with the content. The next stage of my analysis was to begin noting words and phrases in the transcriptions that both reflected notions from the literature as well as words and ideas that occurred frequently within and between interviews. I used highlighter tools in MS Word® and One Note® as well as MS Sticky® notes to sort these words and phrases into preliminary coding categories. Thorne's (2008) suggestion to consider coding as being similar to sorting "laundry into baskets" (p. 144) helped greatly with the preliminary identification of words and phrases used by participants in describing their experiences with workarounds.

Although I did not initially label all of my coding categories, each one was eventually named and, in some cases, renamed to better express what I thought the category conveyed. The final category labels included: types of workarounds, definitions and phrases participants used in speaking about workarounds, communication, feelings, client implications, accountability, occupational health and safety, and rules. I used OneNote® tags and MS Word® tools to compare and sometimes move words and phrases into different categories based on their context within the participants' interviews. During this process, I wrote many memos in a research journal, as my thinking was being stimulated by the data.

As data collection progressed, the next cognitive process is *theorizing* which involves making suggestions or developing ideas about what the data are saying. Thorne (2008) suggests this is where the researcher sorts significant from insignificant information. Common features are sorted and verified through constant comparison and as the analysis progresses, the findings should begin to suggest a thematic summary or conceptual description of the phenomenon in a form that provides implications for use in the practice setting (Thorne, 2008).

Once, the initial coding was complete, I began looking for patterns within the codes. Each coding category was reviewed based on the patterns of words and phrases and what I ascertained they meant. Within that process, broader "pictures" began to emerge. These "pictures" were then compared to "pictures" in the other codes. Combinations of highlighter and copy and paste functions in MS Word® were again used to sort the "pictures" that appeared to fit with one another. I continued to recode and this led me to the identification of four themes. I named these themes as "being heard",

"meeting expectations", "upholding values" and "finding a balance." Thorne (2008) suggested that linguistics used to name themes is less important than clarifying how these themes were linked within the phenomenon being studied. In my work, embedded within these themes, was workers' feelings of tension, both when deciding to use and using a workaround. This term, tension, reflects an abstract conceptual description of many feelings described by the participants. (This concept will be further described in subsequent chapters.)

The final cognitive process is *re-contextualizing* wherein the researcher shares what has been learned in a form that others can take to the practice setting. Thorne (2008) suggests "excellent description is sufficient" for many interpretive description projects but that interpretive description is always a "meaning making activity, directed at a particular audience" (p. 175). Recognizing that the audience most affected by this project will be those who have an interest in workplace safety initiatives, I drew on von Bertalanffy's general systems theory (1968), which is used extensively in the occupational health and safety literature, as a guide for interpretation of the data. The next chapter describes in more detail the themes and subsequent development of an explanatory framework for understanding workarounds.

**Credibility Strategies**

Authors of qualitative research texts have used words such as trustworthiness and credibility to describe the notion of validity and truthfulness in qualitative research (Creswell, 2007; Thorne, 2008). Credibility indicators built into the research process are

mechanisms for checking and confirming accuracy and consistency at each step of the research process.

Four strategies that Thorne (2008) recommended as credibility indicators were used. She stated these were generally "accepted across the qualitative research spectrum" (p. 223). The first was ensuring *epistemological integrity*, which means there is consistency between the research question, methodological process, and the interpretive strategies (Thorne, 2008). One epistemological assumption made of qualitative research is that the researcher develops a relationship with the participants. Generally this assumption is based on the researcher entering the practice setting where the participants are experiencing the phenomenon being studied. Following Thorne's (2008) principles for interpretive description, participants were interviewed face-to-face to learn about their first hand experiences with workarounds. Before the interviews started, and during the process of obtaining consent, I explained to potential participants that my role was that of a student in a Master of Nursing program and that these interviews were not a requirement of my work within the region.

A second credibility strategy was to have *representative credibility* by ensuring there was an appropriate sample and sufficient data was collected. Thorne (2008) cautions against using the term data saturation within interpretive description. Her premise is that the researcher should continue to question if there is more to learn. She recommends that the researcher be confident that both quality and quantity of data accounts for the various aspects of the phenomenon, including contrasting (or negative case) analysis. Negative cases are those instances or examples that do not appear to fit with the data already collected. Within my data collection, I challenged myself by asking

whether more participants would lead me to discover a negative case and how many more participants would be needed. Major deciding factors for me in concluding data collection following seven interviews (as opposed to the 10 – 15 interviews originally planned) were the dearth of individuals who expressed an interest and willingness to participate in my study and time constraints. Thorne (2008) states that "it is not uncommon or inappropriate for time and resources to become a reasonable element in the decision to constrain sampling" (p. 96).

For a third strategy, I used *analytic logic* which Thorne (2008) describes as making explicit how the researcher arrived at "interpretations and knowledge claims made on the basis of what was learned in the research" (p. 22). Analytic logic is achieved by collecting and comparing data concurrently and involves an iterative process between data collection and analysis, leading to inductive reasoning. In this study, I had fewer numbers than originally planned; however, as I reviewed and compared the transcribed interviews, I was able to see similarities within and between the data. As I progressed with the interviews, I compared new data with notes in my research journal to determine if I had any new information or any contrasting data that needed further study. As I transcribed the interviews I would frequently compare between transcriptions and used a similar technique during the coding process and subsequent development of the themes.

The fourth indicator of credibility that I used was *interpretive authority*, which is described as maintaining transparency on how knowledge was constructed, and includes both a description of the participants and the analytic process (Thorne, 2008; Thorne et al., 2004). In describing how knowledge was constructed, it is important for the reader to understand the researcher's intentions and the scaffolding of the study. In this chapter, I

have shared insights into my own practice and my initial assumptions, my reasons for choosing interpretive description methodology and the strategies used to eliminate bias in order to ensure trustworthiness of the results.

## Summary

In this chapter, I described the various aspects of the research project including the setting where the project was conducted and the participants. Ethical considerations affecting this project were also discussed, as well as data collection and analysis processes and the credibility strategies used. I also discussed that by using interpretive description, I planned to answer a practice question pertaining to whether workarounds might have a role in healthcare workers being injured at work. In the next chapter, I will present the findings of the inquiry.

# CHAPTER IV

# RESULTS

The following chapter is intended to provide the reader with more information on my interpretation of the data provided in participants' descriptions of their experiences with workarounds. Four themes were identified in the data analysis, including "being heard", "meeting expectations", "upholding values" and "finding a balance" with "tension" being embedded within these four themes.

## Findings

Analysis of data from the seven participant interviews provided valuable insight into their experiences with workarounds. They described being confronted with an obstacle that led to a decision to use a workaround and then the subsequent tension they experienced related to using workarounds.

## Tension and Workarounds

Embedded within each of the four themes, was the concept of tension. Merriam Webster online dictionary (n.d.) defines tension as an "inner striving, unrest or imbalance." The following statements made by some of the participants give insight into this tension.

> I get gratification with working on Chinese puzzles so the idea of coming up with the solutions [to workarounds is fun]. … but there's still the stress. (P6)

> We kind of numb out the changes. (P5)

> It's a matter of listening to each other. [If] we lose our team work, that is difficult to work around. (P1)

Although the term stress was used by several participants, in some cases, I sensed frustration and anxiety, as was expressed by the following.

> [I am] not even sure if they are interested in my problem. (P4)

> I don't think a lot of nurses feel they can safely voice what they see. I struggled with how safe do I [do my work]. (P7)

This tension was sometimes apparent in participants' descriptions about problem solving preceding the workaround, but it was most apparent after the workaround occurred. The following findings within the themes will provide a more in-depth description.

**Being heard.**

The first theme, "being heard" was a common thread among the participants and reflected a tension between both "being heard" and not "being heard". In being heard, participants wanted not just to be able to report their concerns, but also to be able to share their suggestions for improving work processes that hindered their abilities as caregivers. For example, one participant spoke about the alarms on clients' beds in a supportive long-term care facility. These alarms, which were intended to prevent falls among the elderly clients, were constantly sounding when clients were moving to and from their beds and were often not being reset by staff. The participant questioned why this was the case.

> [The] bottom line is falls of a resident. So how could that be prevented? So finding out why the bed alarm wasn't on, identifying reminders for different areas of how care aides can remember to turn on these alarms. How they are reset? (P1)

This participant perceived that management thought that staff was rushed and therefore left the alarms off to avoid having to deal with this additional interruption. The participant however wanted the manager to hear her concerns about why workers felt so rushed and not just receive another reminder to keep the bed alarms turned on.

> So how then do we communicate that as a team? We want to be positive about this; we don't want this to be negative. (P1)

She acknowledged the manager's busy schedule, but also believed that more managerial presence was needed on the unit in order for the workers and the manager to discuss and mutually agree upon solutions to this workaround that had the potential to affect client safety.

> I would recommend [managers] …have more communication meetings, have more of an open door so that we are free to discuss tasks and duties and assignments for our residents. (P1)

Another participant expressed frustration with learning a computer software program. Part of the rationale for implementing this software program was to eliminate duplicate charting of client care and to improve communications between care providers. This participant explained that some of the fields in the software limited the number of characters that could be entered and, as a result, certain data were missed or never

captured in the electronic record. To deal with this issue, the healthcare workers made notes in a communication notebook they kept at the nurses' station.

> We're actually missing data when it comes to report time because when you write in let's say the learning needs or appointments or follow-ups, you can put all that in but if there's too many cursors it shuts you down, so then you have to pick and choose what's more important to have in the care plan. (P7)

This participant indicated that there were occasions when this practice led to client safety concerns, such as caregivers being unaware of changes in client status. When this concern was presented to management, the participant perceived a lack of interest and stated:

> The manager or the director, they have to appreciate or be part of that problem solving. Sometimes it's you guys, just solve it. [We] don't have the ability to implement what we think the solution is, so I think that's one of the things when we are looking at trying to solve something. It's not just the frontline workers, it's a team thing. (P7)

Although the participant perceived a lack of interest on the manager's part, the statement "you guys, just solve it" (P7) suggests that the manager also may not have the necessary resources or authority to engage in resolving the issue. Consequently, the workaround was perpetuated because these workers continued to use shadow files, along with an electronic charting system that did not fit with their daily work needs.

In contrast, there were other examples where participants perceived that they were "being heard." One participant told about how she and her colleagues managed an

immunization clinic in a space without sinks for hand washing and with a poorly laid out work area. She reported they had used alcohol based hand sanitizer to accommodate the lack of sinks, and created ways to make the work area function more effectively to meet ergonomic and infection control standards.

> You run back and forth from bathrooms that are far away. Or like at flu clinic, [you] do so many that you just change gloves in between. And when your hands have so much [Isogel$^{TM}$ built up], after a while you can't get gloves on because your hands are so sticky. (P2)

Following this clinic, the nurses voiced concerns at a staff meeting about how it was "sheer luck" (P2) that no one was injured or became ill. This nurse explained that with their manager, they generated solutions to eliminate some of the risks embedded in this workaround. She concluded by saying these were "… great changes and everyone has great ideas. It has been the best thing ever." (P2)

Another interview participant who spoke positively about "being heard" described the call-in process used by home healthcare aides. This program was designed to meet occupational health and safety regulations for workers who work alone. The workers were to phone their facility at a designated time to state they had arrived or were leaving their destination thus indicating they were safe.

> How I understand it works [is] one person is designated as the person who will be responsible for these calls during the night and there is a form that you have to check off every time that they call. So that person is given a pager phone so they

> can be walking around doing their job. Beep, beep, they pick up and say yes this is the check and that's good. Okay. And it works beautifully. (P6)

This participant shared that while the process was successful at one site, it was not perceived as being effective in another site. Problems arose in the second site when the charge nurse on the nursing unit designated to take calls was busy or away from the desk. Instead, the call was being taken by whoever was closest to the telephone. This led to inconsistencies in follow-up telephone calls to trace the location of the home healthcare aide, if her calls were not being received. Although the participant did not offer a definitive reason for why this workaround was occurring, she thought it was partly due to a lack of adequate communication between the Home Care department manager and the manager of the nursing unit designated to take the calls. She also suggested that it could possibly be because workers on the designated nursing unit thought this was not their responsibility. This participant believed that where the process was effective, it was due to problem solving between workers and their managers about their concerns for potential risk to their colleagues, whereas in the second situation, workers questioned why they needed to take and in turn, follow-up on these phone calls. As a result of this delegation of responsibility for taking calls continued at the second site, the workers perceived they were not "being heard".

There were reports of other types of formal and informal communications between staff, as well as with managers, that exemplified "being heard." These communications played a role in whether workarounds continued or not and had both positive and negative implications for outcomes of workarounds. Staff meetings, as well as morning huddles, were seen as positive opportunities to share concerns and offer

suggestions for improvements. However, several participants expressed that being given a document to read, or a web site to review, was not effective in addressing their concerns about both actual and potential workarounds. One participant summed it up as follows:

> That is something I just always feel is lacking in that we are always given something to read. It's not the same as visually seeing it or hearing it. (P3)

Many times, participants expressed feelings of powerlessness in dealing with concerns about using workarounds, depending on the type of communication. If they perceived a lack of options to resolve the issue leading to a workaround, they also shared concerns about trying to engage in meaningful discussion with both co-workers and their managers. One participant suggested:

> [Communications] would probably reflect on the relationship you have with the organization, or your supervisor, you know. It's like does that person have my back? (P5)

On units where effective communications between managers and healthcare workers appeared to be occurring, participants expressed positive examples of how they resolved obstacles leading to workarounds, such as the following:

> It's our meetings every month. It's like does anyone have a better way of doing this? You know, just all this round table discussion that we do have. [A] lot of these are good suggestions that do get implemented. (P2)

**Meeting expectations.**

Another theme that emerged was "meeting expectations." Because participants believed their work with clients must continue in spite of barriers within the workflow, they would consider using workarounds in "meeting expectations." This theme reflected the healthcare workers' perceptions of both employers' and clients' expectations of their performance. It was also reflected in their comments about themselves and of other workers. Several participants noted that they wanted the employer to perceive them as "good care providers" meaning that they provided client care efficiently and in a caring manner. They also wanted to endorse that they needed to be accountable for their own actions. "We have to remember that we are accountable and I think we kind of lose sight of that accountability as an employee for the safety factor." (P1)

Within this theme, participants were aware of expectations embedded in the health region's policies, their collective bargaining agreements, applicable legislation, and professional practice standards, as well as the potential consequences of not meeting these requirements in accommodating client needs and expectations. They expressed concerns about the impact on their jobs, if outcomes were negative. Medication errors and staff injuries were suggested by some participants as potential negative outcomes.

> Immunizing kids in all these really "bad for your back" positions [puts you at] risk for injury [or even] a needlestick injury. (P2)

> We've had a huge population of people who are on insulin and sliding scale and we have only one nurse on nights and you need a second check. (P7)

One participant asked, “Who has my back?” (P5) This same participant spoke to concerns about dealing with barriers in the admission process. Certain documentation would be bypassed, if that action was perceived to be in the interests of the client. In doing this, clients who were assessed to be at a greater risk were moved forward in the admission queue. The participant expressed that it wasn’t always a fair process; however, she supposed it to be the only option to ensure higher risk clients received timely care.

> You know when you bend the rules, other staff think you are [doing it wrong]. There’s a bit of an attitude there. That you are, you shouldn’t be doing something. They’re judging you. (P5)

She continued by suggesting, “We need to create the system that is flexible, to be able to, on the spot, become the workaround.” (P5)

This expressed tension between “meeting expectations” and using workarounds was evident in a number of other situations. One participant described the tension she felt about using a medication related workaround that was ongoing in her work setting. In this case, when no other licensed nurse was present on a shift, an unregulated care provider would be the second person checking a specific drug dosage.

> We’ve had a huge population of people who are on insulin and sliding scale and we have only one nurse on nights and you need a second check. Now a policy has come out and ...they are saying an aide can now check our insulins and I said [the aides] don’t even know how to read a MAR and they don’t even know insulins. When you co-sign you’re not just co-signing that you’re shown something. (P7)

This participant was concerned about what the consequences would be, if she were to make a medication error. She acknowledged the medication needed to be given in accordance with the physician's order, yet expressed fear of disciplinary action, if the client was harmed as a result of a medication error. Yet, no other option for confirming that the dosage was correct was available to her. She also believed that she was accountable to uphold professional standards regarding her scope of nursing practice but this led to a tension between her obligation to provide treatment to the client and to meet the expectations of her employer.

Another participant talked about scheduling to accommodate shortages of staff. In this instance, the scheduling technology selected was not a good fit with the client situation. Rather than reworking the technology, alternative scheduling arrangements were developed within the system to accommodate staff shortages and the required number of hours of work that needed to be offered to staff in accordance with their collective bargaining agreement. The main problem with this workaround was that while it ensured clients were receiving care, it did not address the issue of the vacant staff positions within the department.

> We have extreme shortages of staff and because we have these positions that don't get filled, we have a whole system of workarounds in that we combine positions, [and] we will move services, or cancel services. It's a constant workaround. (P6)

Thus, staff often worked overtime or worked more hours than they wanted to work as a casual worker because they knew if they did not work, there were no other workers

available to cover that client caseload. The participant thought this was a managerial issue that needed to be fixed and she continued to say that this workaround created a lot of stress for both the scheduler and the staff because they wanted to meet both clients' and the employer's expectations for providing appropriate, timely care but they struggled with the issue of working more or overtime hours.

### Upholding values.

The third theme, "upholding values" was related to safeguarding values that are embedded within the workplace culture. Values mentioned by participants included safety, teamwork, and learning. Almost every participant wove one or more of these values into their descriptions of their experiences with workarounds, explaining that these values influenced their decisions to use, or not to use, a workaround.

#### *Safety.*

Safety concerns were evident in many situations where either the client's safety, or that of the worker, became the provocation for using a workaround. One participant described a situation wherein there was a shortage of isolation gowns on the nursing unit. The workaround was to borrow from another nursing unit until the supplies were re-stocked. "I do remember us being low on gowns and [Materials Management] telling us we have them on backorder." (P3) Although, there were no negative outcomes, such as an infectious disease outbreak on either unit, the participant noted they did what they needed to do "in the moment" (P3) to ensure their safety and that of their clients. The participant described this as a temporary solution but indicated that it could have been

more of an issue on a weekend when a product was on backorder from the supplier. In keeping with this, she stated, “We need to be careful of usage.” (P3)

***Teamwork.***

Teamwork, and its importance in the workplace, was described by a home healthcare aide, who stated she would assist facility based healthcare aides before her own shift began, even though this was not considered as part of her job description, and was contraindicated by the collective bargaining agreement under which she worked. She described the situation as follows:

> They’ve been very short staffed in the nursing home some days and I’m a [home healthcare aide], right? And there’s been a couple of days where I know they’re short staffed or very short staff so I arrive about 7:30 and I help with [mobilizing clients] because it just helps everybody out so, which isn’t good or right but it’s just the way you do it. [W]orking [within] the unionized environment, actually it’s not illegal, and illegal is the wrong word, but very frowned upon to pull someone from [a home healthcare aide position] to put them in [a facility based healthcare aide] position. (P6)

She expressed that because she was an active member in the collective bargaining unit, this created tension for her and that using the workaround challenged what she believed about workers’ rights in the workplace. While she was hired as a home healthcare aide, by using this workaround, she was carrying out facility-based healthcare aide duties that, according to the collective bargaining agreement, meant she was doing someone else’s work. In her description of this workaround, this worker’s empathy for her peers was

obvious, yet she had many concerns about the shortage of staff and felt obliged to assist these facility-based healthcare aides. Doing so however did not resolve the problem of being short staffed in the facility.

### *Learning.*

Other participants suggested that workarounds presented opportunities to learn and to make improvements in the workplace. Yet, there was an underlying assumption among participants that not all learning opportunities were of equal value. For example, some participants perceived that face-to-face learning opportunities would reduce the need for workarounds because the learning session would provide them with the necessary information, whereas just reading information did not allow for questions and interactive learning. One participant shared how they had organized their unit to accommodate cases of influenza, without knowing if they were using the correct process.

> I know the one day, and it was a big issue, and we didn't know what we should be doing or not. If you [had] flu like symptoms, you went to this end of the department and if you were everyone else, you went to that end, and then I know we had asked, "How much isolation do we need? Is it full contact and droplet?" Some days we are asking the question because we don't have time to get the answer on our own, and those days we didn't get the answers, and you [are] just doing the best you can because you [are] swamped. (P3)

This nurse valued learning and believed that if they regularly had brief educational sessions before unusual circumstances were predicted to occur, such as an

influenza outbreak, an activity could be confirmed as being appropriate or not, and inappropriate workarounds could in turn be prevented.

> In the meantime at the end of our day, [should] we call housekeeping and do isolation cleans where we had everybody? (P3)

Although the participant did not judge the effectiveness of the workaround, and may not have been aware of adverse consequences at the time, she expressed feelings of relief that the workers that day had made the correct decisions about the type of cleaning needed.

Each of these values (i.e., safety, teamwork and learning) was embedded in the workplace culture and was an important determinant in deeming a workaround as acceptable or not. In certain cases, such as the previously described situation where nurses were uncertain about isolation protocols for influenza, the participant indicated some relief that the workaround was acceptable, yet she shared that she would prefer to see a "staff readiness event [because] we know flu season comes every year." (P3) This tension related to "upholding values" was also noted in other participants' comments about whether or not a workaround became a regular work practice for that nursing unit. Usually the effectiveness, or outcomes, of the workaround determined if the workaround became common practice, such as using a shadow chart. However, if the workaround was effective, but appeared to violate one of the values of safety, teamwork or learning, it became questionable.

**Finding a balance.**

The fourth theme relates to "finding a balance" between the ideal level of client care and the realities of current practice. This theme was an underlying thread in

participants' discussions about the reasons they used workarounds and the outcomes of the workarounds.

> You try to work [toward] an ideal world, work around with what you have, to the best you can. Really, home care is the hardest. It's really tough in some of these houses, whereas the more controlled your environment is, the more control that you [have over your work and its outcomes]. The minute we leave this building you lose control, you know. If somebody had an anaphylactic reaction, what would I rather have? A crash cart right there that I'm used to or a little epinephrine kit? (P2)

Participants reiterated the need to provide safe client care, but they also described obstacles that required them to make decisions about how to circumvent an obstacle in order to achieve a favorable outcome, namely safe and timely client care.

> In my particular area anyways, where because you don't know what's going to be coming through, [you need] to move with the needs of the client and get them to where they need to be. I don't know if we can define the workaround all the time but we need to create the system that is flexible, to be able to, on the spot become the workaround, and make that a positive thing rather than "oh you're not following the rules." That's a bad thing. (P5)

Another participant spoke of using workarounds because of a shortage of equipment needed for enhanced security on her unit.

> We have a lot of safety and legal issues and that becomes quite a big thing, especially when we have patients that abscond off the unit. How do we make our

> unit safer [so] that they can't abscond? And that kind of upsets the RCMP [who need] to come and they look for one of our patients. Again the safety, it goes beyond us. (P7)

This participant understood from her manager that a specific piece of equipment that would assist in providing security was in the procurement process; however, there was no indication as to its anticipated arrival. This participant explained that if the security equipment was in place, then clients could move freely around the unit, but without it, those clients at risk of elopement either had to have constant staff supervision or be placed in a secure room on the unit. For the participant, the continuing use of these workarounds, in trying to find an appropriate balance between effective client supervision, supporting client dignity and maintaining capabilities of staff to observe these clients, was creating frustration and fears for the safety of both clients and workers.

In another case, a participant described her attempts to balance her clients' needs with her need to learn new software. Ideally, the software offered additional security features for client information as compared to the database that was being decommissioned.

> It will not deal with serology results follow-up and I can see that being a big potential problem right now and I have to figure out how I work around this problem. How do I communicate those results to [clients] who may be affected? And now I'm in a personal dilemma. I am not supposed to be using the old system, where I could get the information from there probably twenty times faster than I could [in] this new system. (P4)

In order to deal with this obstacle, she created shadow files for clients' serology results. By doing this, she knew she could quickly access the results, however, she also acknowledged that she was defeating one of the purposes of the new software that was intended to protect confidentiality of client information. She continued by stating that this caused her "high anxiety." (P4)

**A Proposed Explanatory Framework for Tension and Workarounds**

To better explain these themes and the tension within them, the following explanatory framework shown in Figure 2 was developed. This explanatory framework incorporates the major elements of general systems theory – inputs, throughputs, outputs and feedback – in the context of workarounds and the findings of this study. Within the workplace, inputs include the culture of the workplace, allocation of resources and identification and mitigation of hazards, which may also entail the implementation of policies or different types of supervision. Throughputs are the work being done and in this case, the workaround being used. The output is the result, or outcome of the throughput. Embedded in this figure, as part of the outputs, are the four themes identified in my data analysis: "being heard", "meeting expectations", "upholding values", and "finding a balance". These themes reflect the tension experienced by workers as part of that output. Although tension was present in all elements of the system, it was most obvious in the outputs. Included also in the output is the outcome of the workarounds itself. For example, the output is that charting was completed on the electronic health record as per protocol. The workaround was the shadow chart. Feedback in general systems theory is the loop from the output back to the input and is intended to "feed" or provide information on the effectiveness of the input in achieving the desired goal for the

output. Because von Bertanlanffy (1972) describes systems as open, adaptive and constantly seeking equilibrium, this feedback loop has an important role in effecting change in inputs.

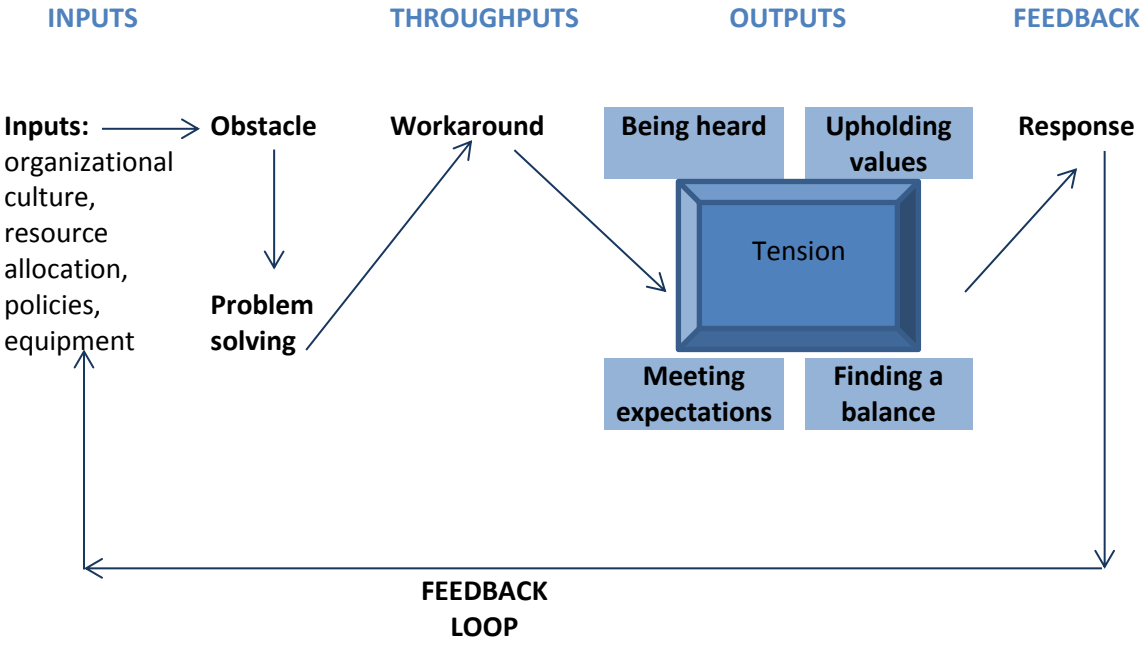


*Figure 2.* Proposed Workaround framework based on general systems theory.

A visual for understanding healthcare workers' experiences with workarounds based on general systems theory. Healthcare workers may perceive obstacles within inputs that, in turn, they problem solve and create workarounds (the throughput). Outputs occurring from using workarounds include tension that is embedded within the four themes identified in this study. Responses to outputs become part of the feedback loop. Adapted from Von Bertalanffy, L. (1968). *General systems theory: Foundations, development, applications.* New York: George Braziller.

## Summary

Although my purpose was to learn more about healthcare workers' occupational safety experiences with workarounds, the participants described their experiences from the broader context of both client and worker safety. From their descriptions, I obtained valuable insight into the work life of these participants and the barriers they encounter in their day-to-day work. What was unique in this study was the tension that participants described in relation to their experiences with workarounds. The explanatory framework in Figure 2 provides an explanation based on general systems theory as to how this tension relates to workarounds and will be discussed in more depth in the next chapter.

# CHAPTER V

# DISCUSSION

## Introduction

This study is unique from several perspectives. Within the literature search, I was able to identify only two other Canadian inquiries related to the use of workarounds in nursing. One of these focused on constraints of providing care in a nursing home following legislative changes and the other was about the practice of medication stockpiling on nursing units (DeForge et al., 2011; McLarney et al., 2012). As outlined in the literature review, workarounds most commonly discussed by other writers and researchers were related to client medication concerns or health information technology issues. Participants in this inquiry provided similar examples but also many more, such as obstacles created by policies, lack of infection control resources and implementation of (or lack of) equipment.

Their descriptions of their experiences with workarounds, as well as the tensions that resulted, provided insight into why these healthcare workers choose to use workarounds. In the other research that has been completed to date, researchers have elaborated on types of workarounds and have alluded to why workarounds are used. In this study, by using interpretive description, I was able to elicit a better understanding of these experiences. By using their experiences, in conjunction with general systems theory, I was also able to offer an explanatory framework to add to the growing body of knowledge about workarounds. This framework will serve as a means to describe the tension that healthcare workers associate with workarounds.

**Defining Workarounds**

The aim of this study was to explore healthcare workers' occupational safety experiences with workarounds. When asked to define a workaround, one participant surmised that it is "work that needs to be done, but you realize there's a problem and [you] problem solve to get that work done." (P4) Most of the participants expressed a lack of familiarity with the term, workaround, but during interviews, when given the researcher's working definition that workarounds were "any alternate method, including shortcuts, used to carry out a task because of a block in workflow or a system barrier, without eliminating the problem," they were able to provide examples consistent with that definition. During the interviews, the participants suggested that a workaround was a "problem", "barrier" or "issue" that needs "solving" or "manipulating" in order to complete a task in a manner as close to the ideal as possible. Although the words and ideas voiced by participants were similar to those in the literature, participation in this study provided them with the opportunity to describe their own experiences with workarounds and the tensions they struggled with in those experiences.

In conducting this study, I wanted to better understand the participants' experiences with occupational safety in relation to their workaround experiences. Participants were conscious of the safety hazards they could encounter in their work, such as working alone, and exposure to infectious diseases. When discussing safety, they described concerns not only for themselves but also for their clients. It was apparent to me that these participants perceived safety as a concept that cannot be compartmentalized to just one group or the other (i.e., only healthcare worker safety or only client safety). One nurse stated, "Safe nurse is a safe patient." (P7) This notion that healthcare workers'

safety is tied to clients' safety has been noted in the literature and has a bearing on workers' experiences with workarounds. Yassi and Hancock (2005) state:

> Our work to date suggests that a comprehensive systems approach to promoting a climate of safety, which includes taking into account workplace organizational factors and physical and psychological hazards for workers, is the best way to improve the healthcare workplace and thereby patient safety. (p. 32)

Rathert, Williams, Lawrence, and Halbesleben (2012) echoed a similar notion in their work by suggesting that the work environment influences not only the well-being of healthcare workers but also creates potential for workaround behaviours, which in turn may affect client safety. Other authors argued that the healthcare system needs to be designed to reduce hazards and support the performance of the healthcare worker, which in turn benefits client safety (Emanuel et al., 2008; Karsh, Holden, Alper, & Or, 2006). However, Halbesleben et al., (2010) suggested that these redesigned processes, which are intended to improve safety, may lead to perceived blocks in workflow, thus perpetuating or increasing the use of workarounds. His notion is supported by several examples of workarounds provided by participants in this study, including the electronic charting which was intended to improve client care but resulted in shadow files being used, and bed alarms that were implemented to reduce client falls but were not being reset by workers. As suggested by Yassi and Hancock (2005), using a comprehensive systems approach, may in turn assist healthcare workers' understanding and alter their experiences with workarounds.

## General systems theory and Workarounds

Many theoretical frameworks have been used to attempt to understand workarounds, even though these theories were not originally developed within the context of workarounds. The literature reveals that loose coupling theory (cited in Alter, 2014), Ajzen's theory of planned behavior (cited in Amalberti, et al., 2006) and conservation of resources (cited in Halbesleben, et al., 2008) are just a few perspectives used. Based on the findings of this study, I chose to use general systems theory because of its applicability in exploring workarounds within the context of occupational health and safety. (Refer to Figure 2 in the previous chapter).

### Inputs

In this inquiry, participants described how inputs, including a lack of resources, resulted in a block in workflow, such as a shortage of isolation gowns on one nursing unit and the routine of borrowing from another unit. Other examples of inputs participants described as creating a potential barrier to the workflow were policies and technology. Although participants mentioned these inputs, they also described how their own values and beliefs affected their abilities to problem solve perceived barriers in workflow. This led me to consider the inputs in the framework as either external, such as workplace policies, or internal, which would include the worker's personal values and beliefs.

Many external inputs that were described by participants as creating obstacles to workflow were similar to those items in the literature that authors described as antecedents to workarounds. In attempts to standardize and mistake-proof healthcare policies and procedures, similar to what is done in high reliability organizations

healthcare stakeholders may inadvertently be creating the potential for more workarounds (Morrison, 2015; Wheeler, Halbesleben & Harris, 2012). Langton and Robbins (2007) suggest that large organizations rely on standardization, which requires "consistent application of policies and practices for ensuring accountability, [however] when cases arise that don't precisely fit the rules, there is no room for modification" (p. 490). From an organizational theory perspective, this suggests that the employer's governance model and management practices may also have a role as an input in the use of workarounds.

Inputs that create barriers or obstacles to workflow usually result from a misalignment of the ends of the worker, the employer, and sometimes the client (Alter, 2014). This misalignment supports the idea that workers provide internal inputs when choosing to use workarounds. For example, one participant recognized that her client required immediate assessment. By altering the admission queue, she was able to ensure the client was seen quickly in spite of this not following the organization's processes. In this situation, her internal professional values and beliefs were at odds with the organization's expectations for its admission protocol.

When the worker is confronted with a workflow dilemma, they are forced to problem solve this obstacle. Tucker and Edmondson (2003) described first order problem solving, which is intended to be short term to "do what it takes to continue the patient care task," (p. 60). For example, one participant created a shadow file to store serology results because she had problems accessing this information in a newly introduced electronic charting database. Other reasons participants gave for using workarounds were consistent with those found in the literature review, including technology mismatched to the work, lack of available resources and inflexible workplace policies (Alter, 2014;

Halbesleben, Wakefield & Wakefield, 2008). Halbesleben (2010) and Rathert et al., (2012) have suggested fatigue as a contributing factor; however, the participants in this study did not mention fatigue as a reason for using workarounds.

### Throughputs and outputs

The throughput, from the perspective of this framework, is the workaround. A theoretical reasoning within the general systems theory is that outcomes result from the inputs giving direction to the throughputs. In this study, what became evident, as part of the outcomes, was the tension participants experienced as a result of using workarounds. This tension was reflected in the four themes identified in the data. One participant described bypassing the admission process to ensure higher risk clients were seen sooner, which created tension within that participant, despite a positive outcome for the client. Although various personal influences, such as psychological safety related to the use of workarounds, have been studied by Halbesleben and his colleagues, (Halbesleben 2010; Halbesleben et al., 2008; Halbesleben & Rathert, 2008), the descriptions of the tensions experienced by participants in this study are unique.

Participants described experiencing tension related to "being heard". Minimal discussion was found in the literature about "being heard" (or not) in relation to workarounds. When communication was discussed, it was generally in the context of how communication, or lack thereof, contributed to an outcome, which was generally perceived as negative, such as a medication error (Alter, 2014; Debono, et al., 2013; McLarney, et al., 2012). Tucker and Edmondson (2003) suggest that workarounds keep "communication of problems isolated so that they do not surface as learning

opportunities" (p. 60). They continue on to say that when nurses do take action by reporting the issue to a manager, changes can be made; however, this involves time that nurses may not believe they have. Participants in this study did not suggest that a lack of time was a problem contributing to the use of workarounds, but they may have unconsciously been crafting their jobs to cope with issues of time. Halbesleleben (2011) states that workarounds are not job crafting, "but over the long term they can lead to crafting the job so as to avoid the blocks" (p. 71).

"Being heard" was a broader theme than just communications with managers. Participants implied that workers who thought they were not "being heard" also believed that they were not receiving consideration for what they might offer in terms of quality improvements within the workplace. Halbesleben and Rathert (2008) suggest that workarounds can be a valuable tool for continuous quality improvement but without adequate discussion at all staffing levels, there is a significant risk for errors and inefficiencies. Rasmussen's (1997) recommendation to involve workers in identification of safe operating practices supports this notion.

Tension in "meeting expectations" was also observed when participants were describing their desire to provide safe effective client care, because they believed that clients want and deserve this. Within this desire though were underlying concerns. The participants needed to decide whether they required assistance, and if they did, who they would seek out to help them. Although their goals for creating workarounds were to provide safe, expedient client care, in a caring compassionate manner, the participants recognized the possibilities for negative outcomes, such as medication errors or injuries.

"Upholding values" also resulted in tension for the participants. Although the participants did not specifically state it, their own values and beliefs, specifically about safety, teamwork and learning, had a role in how they responded to using workarounds. If the workaround was perceived to be at odds with one of the specific values, then the workaround would be questioned by the worker. In turn, if these values were not seen as being affected by the workaround, the workaround had the potential to become a routine work practice, such as borrowing isolation gowns or other items from another nursing unit.

Participants made reference to the importance of teamwork, particularly if they were short-staffed. While the workarounds they used were effective in ensuring that clients received care, Morrison (2015) suggests that organizations may not be aware that it is not necessarily their processes that are maintaining operations, but, rather the workarounds that are being used. He contends that this erodes organizational capability by giving organizations a false sense of security that operational practices are functioning as planned. Other researchers propose that normalizing workarounds erodes the safety culture in the workplace (Amalberti et al., 2006; Halbesleben, 2010). This may result in situations where workers have used the workaround knowing that negative consequences are possible, or situations where the workaround continues as the new norm but workers are not satisfied it is the best solution. This brings forward questions, such as whether workers need skills to recognize workarounds and what workers need to know in order to problem-solve a barrier in a process without violating the basic principles involved in that process (Amalberti et al., 2006; Halbesleben, Wakefield, & Wakefield, 2008; Tucker & Edmondson, 2003).

In attempting to find a balance, the participants talked about "doing the best you can" (P7) but also being "accountable" (P1) for their actions. They wanted what was best for their clients but recognized there were many factors to consider when using a workaround. In "finding a balance", these participants had to assess whether the risk of carrying out the workaround outweighed the potential benefits. For example, one participant described dealing with new software and accessing serology results. Although she used shadow files to cope with this technological obstacle, she assessed the privacy risk to clients' confidentiality as being low. In another example, a participant described the tension involved in finding a balance between client safety and the lack of security equipment that prevented clients from moving freely on the unit. In this case, the risk was higher because of the potential for harm for both clients and nurses. In either case, risk assessment, which is a critical thinking process, would assist in problem solving solutions to these work barriers.

### Feedback

Whether a workaround is deemed to be effective by the workers depends on the level of risk workers perceive. This judgment becomes part of the feedback loop. This feedback is the loop from the output back to the input and aids the system in seeking equilibrium.

Within the proposed framework in Figure 2, the output of the workaround is judged by the worker to be effective or ineffective according to the worker's perception of how successful (or not) the workaround was in solving the task at hand. Participants described assessing success, or lack of, within their descriptions of outcomes of the

workarounds. An effective response was generally perceived by participants as a situation where changes were made that were acceptable to the workers. In other situations, where the response to the workarounds was perceived as ineffective, participants described feelings of increasing tension. This increasing tension within these individuals would be reflective of a system attempting to seek equilibrium and stability.

**Tension within the Themes**

As participants described their experiences they also used terms such as "makes me feel awful" (P6), "that's a bad thing" (P5), and "there's still the stress" (P6). I noted that these participants had an emotional investment in whether the workarounds being utilized were in the best interests of their own or their clients' safety. Recent American literature on workarounds has suggested that nurses experience "moral distress" when using workarounds, (Berlinger, 2015; Seaman & Erlen, 2015). The Canadian Nurses' Association Code of Ethics (2008) describes ethical or moral distress as:

> Situations where nurses know or believe they know the right thing to do, but for various reasons (including fear or circumstances beyond their control) do not or cannot take the right action or prevent a particular harm. When values and commitments are compromised in this way, nurses' identity and integrity as moral agents are affected and they feel moral distress. (p. 6)

When considering the definition of moral distress offered by the Canadian Nurses Association (2008), I contend that tension described by participants in this study is not the same. The Canadian Nurses' Association definition is specific to the nurse's inner belief system and does not reflect the context of either the client or the organization.

Although participants included comments about their own feelings, their comments also reflected concerns for clients and their own relationships with the organization.

While the concept of tension in this inquiry could arguably involve moral distress, it includes other emotional contexts, such as feelings of frustration, pressure and powerlessness to ensure clients are receiving appropriate care and that workers are meeting expectations of the employer, the clients, and themselves. In some situations, this emotional state included positive feelings such as "being heard" and seeing change in the workplace as a result. In some circumstances, workarounds, such as borrowing isolation gowns from another unit, were neither perceived as right or wrong but as what needed to be done "in the moment" (P3). The emotional investment in the previous workaround was minimal, whereas, in other workarounds, there seemed to be more emotional connection particularly when examples affected client safety, such as the bed alarms not being reset.

The Merriam Webster Dictionary (n.d.), which defines tension as an "inner striving, unrest or imbalance", provides an appropriate description of the tension described by participants in this study. It is reasonable to suggest that workers experience a sense of unrest when not "being heard". Do they continue to strive to "meet expectations" and "uphold values"? Are they seeking to "find the balance" between what is real and what is ideal in their day to day work? Where does nurses' capacity for critical thinking and problem solving fit within this definition? These questions suggest that the concept of tension is embedded within each of the four themes and that there continues to be more to learn about tension and workarounds.

**Practice Implications**

Collaboration between managers and workers in using quality improvement processes has potential for more effective outcomes when dealing with workarounds (Halbesleben & Rathert, 2008; Wheeler, Halbesleben, & Harris, 2012). In addition to quality improvement processes, managers may find that using a risk assessment model has benefits when discussing and following up with staff in dealing with workarounds. While some workarounds are less risky than others, considering factors such as frequency, severity and probability of risk will help in determining future actions in identifying and resolving issues leading to the use of workarounds. These risk assessment models use a mathematical formula to examine the probability of occurrence of an incident, the degree of severity of that event, as well as how frequently the event could occur, which is sometimes described as the number of people exposed to the event (Bird, Germain, & Clark, 2003; Petersen, 2003). By using this formula, a manager could prioritize which workarounds are most urgent to address. Various risk assessment models have been used for many years by occupational health and safety practitioners, and more recently, by patient safety managers to mitigate risks (Battles, Dixon, Borotkanics, Rabin-Fastmen, & Kaplan, 2006; Bird, Germain, & Clark, 2003; Petersen, 2003; Wreathall & Nemeth, 2004).

Although using risk assessment tools in connection with workarounds is not well documented in the literature, it is an idea worth considering. By using one of these tools, employees, be they direct care providers, educators, or administrators, could provide feedback on the usefulness, or ineffectiveness of a workaround and in turn, initiate

necessary changes to remove a system block. Dealing with system blocks may in turn reduce the tension that healthcare workers experience related to using workarounds.

**Limitations and Future Research**

Limitations of this study include the small participant numbers. Thorne (2008) suggests that smaller interpretive description studies may justify small sample sizes, as long as the researcher recognizes there will always be more to learn. Other categories of workers from the same organization who did not participate in this study may have different experiences with workarounds. Such information would be beneficial to compare with the findings of this study, as well as the work of other researchers, to better understand workarounds and the tensions that workers experience in using them.

A second limitation of this study is that no nursing managers were interviewed. Kobayashi et al. (2005) maintain that managers have more or different resources than direct care workers, thus allowing managers to deal differently with a system block. This notion coincides with information in other literature which suggests there is an underlying assumption by direct care workers that managers can "fix" system blocks (Tucker & Edmondson, 2003). This assumption is however contrary to comments made by some of the participants in this study. One had talked to her manager about a problem that was causing nurses to resort to workarounds, and her manager's response was "just do your best." (P7) Another participant expressed frustration that managers were allowing vacant positions to remain open "because someone's covering the clients and that's all that matters." (P6) Yet another participant stated, "Sometimes we feel that the management doesn't hear us." (P1) In each case, there was a perception that the manager

was not dealing with the issue; however, the particular issues were complex, involving staff shortages and inadequately designed but expensive technology. Because managers may not perceive themselves as having the authority or the resources to deal with these system blocks, the workers' tensions resulting from using the workaround continue because workers do not see changes forthcoming. In future research, managers are a group that could confirm whether they have more or different resources than workers and whether they also use workarounds and, in turn, experience tension.

There also were no male participants in this study and the question of whether or not gender has a role in workers' decisions to use workarounds has not been previously studied. Similarly, this study did not include any licensed practical nurses, although this group of nurses was also invited to participate. Whether or not their experiences in using workarounds differ from those of other regulated nurses is not known.

Student nurses were also excluded from participation in this study. The original decision for this was based on how students approach their work because they are being directly supervised by an instructor. Westphal et al., (2014) contend that workarounds can be confusing to students in the process of learning because of "the dissonance between prior learning and observed practice" (p. 1014). In this study, it was assumed that they would also be much less likely to participate in a workaround because a workaround would be perceived as not following procedures and would be perceived as wrong; thus, the student may fear repercussions, such as disciplinary action.

The explanatory workaround framework proposed in this study should be tested in various contexts of workarounds. More specifically, using it to examine how

healthcare workers problem-solve obstacles leading to workarounds may yield insight into both its effectiveness as a tool for understanding workarounds and how tension fits into the problem solving process. The workaround tool developed by Halbesleben, Rathert, and Bennett (2013), which is a quantitative survey tool developed to measure nursing workarounds, job crafting and deviance, was tested in a pilot study surveying more than 1000 registered nurses. It could potentially be used in conjunction with this proposed framework to offer further insight into the tension healthcare workers experience in using workarounds and to quantify that impact. A systematic review of incident reports within healthcare organizations may also provide a measure of the frequency with which workarounds contribute to workplace injuries.

As well as testing the proposed framework, future researchers could also give consideration to using other research methodologies to study tension and workarounds. These researchers may also wish to study alternate terminology, such as shortcuts, and whether those terms would change the nature of the tension that healthcare workers describe. Future researchers may wish to consider the proposed framework, in conjunction with the application of risk assessment models, to determine whether or not their combination would be of benefit to risk managers who have concerns about the impact of workarounds in the workplace.

**Summary**

There were four themes, being heard, meeting expectations, upholding values and finding a balance identified in this study and embedded in these themes was the concept of tension. The sample size was small and did not include managers, nursing students nor

male healthcare workers, therefore it is unknown if these or other groups of healthcare workers experience similar tensions within their experiences with workarounds. The concept of tension merits further exploration as this has not been documented elsewhere in the literature to date.

# CHAPTER VI

# CONCLUSION

Much was learned about workarounds from the seven participants involved in this study. They talked about their occupational safety experiences and their decisions to use, or not to use workarounds. Their descriptions gave voice to the tension they experienced in doing so, which contributes to the growing body of knowledge related to the use of workarounds in healthcare. This has practice implications for several groups of stakeholders, including nurse administrators, nurse educators, occupational health nurses, and client safety advocates.

The research question in this study was, "What are healthcare workers' occupational safety experiences with workarounds?" The results provide a description from the participants' viewpoint and give insight into the problem solving processes of healthcare workers using workarounds. When considering process improvements, and risk mitigation for dealing with workarounds, healthcare stakeholders may wish to consider the following:

1. Working collaboratively with direct care workers by actively listening to them which may, in turn, reduce the tension experienced as a result of not "being heard."
2. Clearly communicating the organization's expectations of workers, particularly about what is an acceptable risk in "meeting expectations". The organization may be able to alleviate some of the workers' tensions in "meeting expectations" by

addressing this with clients and their families, as well as by how expectations are articulated in organizational policies and practices.

3. Regularly reviewing the culture of the workplace and how it impacts practices. Having an understanding that workers believe that "upholding values" is important can impact the introduction of new technology, equipment and policies. For example, if workers understand that a change will improve safety for clients and themselves, they may be more responsive to that change and less likely to attempt to work around the change.
4. Recognizing and understanding that "finding a balance" is a reality that workers confront daily as they attempt to balance the "real" and the "ideal". For example, the physical environment may not always lend to immediately adopting some best practices, such as having adequate sinks for hand washing, therefore, stakeholders may want to engage in dialogue with those workers affected.

By combining this knowledge, along with other knowledge of workarounds, healthcare stakeholders can plan for process improvements and risk mitigation in relation to workarounds involving both clients and healthcare workers.

**Concluding thoughts**

Should we embrace workarounds or should we shun them? Because outcomes of workarounds have the potential to be either positive or negative, open communication about workarounds is essential at all levels in the organization in order to better understand why they occur. Whether we can mistake-proof work processes in healthcare, as do high-reliability organizations (HROs), is open for debate. In healthcare, some work

is standard work that can be consistently carried out regardless of the setting or the worker and thus can be standardized. Other work may need to be adaptable, such as a client care process in an acute versus a community setting, and may be more prone to workarounds or errors. Similarly to Rasmussen's (1997) contention, we may need several levels of interventions that identify coping skills and boundaries that define when workarounds are acceptable and when they are not.

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**Appendix A - Recruitment Poster**

Athabasca University

# Faculty of Health Disciplines

## Recruitment for Research Project on Workarounds

Are you interested in participating in a research project? Would you like to talk about your experiences with workarounds? (Workarounds are any alternate method, including shortcuts, used to carry out a task because of a block in workflow or a system barrier, without eliminating the problem.)

Any nursing staff, including RNs, RPNs, RN (NP), LPNs, CCAs, and nurse-managers currently employed by the health region, in any site, department or position is invited to participate in this study. Participants should be willing to contribute 45 to 60 minutes for an audio-taped interview. (The interview location is negotiable with the researcher.)

Participation is completely voluntary. All information provided is confidential and confidentiality will be maintained according to privacy standards outlined by Athabasca University and legislation in the province of Saskatchewan. These processes will be further explained prior to commencing the interview process.

Please contact the investigator if you would like more information or you would like to consider participating in this project.

**Investigator**: Mary Anderson, BSN COHN(C) RN
MN Generalist Student
Athabasca University
Athabasca, AB
Cell Ph: 306.741.6632
Email: little6@yourlink.ca

**Supervisor**: Donna Romyn, PhD RN
Faculty of Health Disciplines
Athabasca University
Athabasca, AB
Ph: 1.888.228.2180
Email: dromyn@athabascau.ca

## Appendix B - Athabasca University REB Approval

**From:** gleicht@athabascau.ca
**Date:** September 18, 2014 at 3:17:36 AM CST
**To:** "Mary Anderson (Principal Investigator)" <Little6@yourlink.ca>
**Cc:** dromyn@athabascau.ca, gleicht@athabascau.ca
**Subject: Renewal of Ethics Approval**

Athabasca University
RESEARCH CENTRE

September 18, 2014

Mary Anderson
Faculty of Health Disciplines\Centre for Nursing & Health Studies

File No: 21087

Approval Date: October 15, 2013

New Renewal Date: September 16, 2015

Dear Mary Anderson,

As your request for modifications to your research proposal entitled "Exploring Healthcare Workers' Occupational Safety Experiences with Workarounds" has been approved, ethics approval has been renewed for a further one year period, to September 16, 2015.

To continue your proposed research beyond September 16, 2015, you must submit a Renewal Report before August 15, 2015.

**When your research ends,** you must submit a Final Report to close our REB approval monitoring efforts.

If you encounter any issue with the Research Portal's online submission process, please contact the system administrator via research_portal@athabascau.c.

If you have any questions about the REB review & approval process, please contact the AUREB Office at (780) 675-6718 or rebsec@athabascau.ca.

Sincerely,

Office of Research Ethics

## Appendix C - Cypress Health Region Ethics Approval


October 21, 2014

Mary Anderson
Occupational Health Nurse
Community Health
350 Cheadle Street West
Swift Current, SK S9H 4G3

**RE:** "Exploring Healthcare Workers' Occupational Safety Experiences with Workarounds"

Dear Mary,

The Cypress Health Region's Ethics Committee has reviewed the above named research project. The Committee has found your application to be acceptable on ethical grounds. Please ensure that any changes are reported to the Ethics Committee in advance of their implementation. We also ask that you share with us a summary of your findings upon completion of your work.

Best of luck with your research!

Sincerely,

Brandy Winquist, MSc, PhD
Chair, Regional Ethics Committee
Decision Support Consultant/ Epidemiologist

BW/mb

**Appendix D: Letter of Information for Participants**

Athabasca University

## Faculty of Health Disciplines

Dear Potential Participant,

My name is Mary Anderson and I am a Masters' of Nursing student with the Faculty of Health Disciplines at Athabasca University. I would like to invite you to take part in a research study exploring healthcare workers' occupational safety experiences with workarounds, being conducted as part fulfillment of a Masters' of Nursing.

Purpose of study:

The purpose of this study is to seek to understand healthcare workers' occupational safety experiences with workarounds with the aim that this information will benefit healthcare stakeholders assessing and improving workplace safety management practices

What you can expect as participant:

Should you agree to participate in this study, you will be asked to meet with for a 1:1 interview lasting about one hour, held at a time and location convenient to you. I will be asking you questions about your experiences with workarounds. It is intended that this will be an informal conversation where you are comfortable in sharing your story. The interview will be digitally audio-recorded and I may take a few notes.

If at any time you are uncomfortable with a question or with the interview process, you may decline to respond to the question or you may request a change in topic without explanation. You may withdraw at any time during the study without consequences. Should you choose to withdraw, any information you have provided up until it has been include in data analysis will be removed at your request.

Measures to protect your identity:

Every effort will be made to maintain your confidentiality. Your name will be replaced with a series of letter and number identifiers known only to myself. Your identity will not be linked to any information you provide. Interviews will be digitally audio-recorded and stored on a password protected computer that I am the sole owner with sole access to the password. As the project proceeds, I may need to share some confidential information with Dr. Donna Romyn, my thesis supervisor (contact information below), however this would not include your name. Your employer or any parties associated with your

employment will not be aware of your participation in this project nor will they have access to interview notes or audiotapes. .

A written summary of this report in the form of a Masters' thesis will be available through Athabasca University's digital archives. As well, results will be presented in journal publications and conference presentations. In none of these circumstances will there be any identifying information provided. Demographic and interview data will be presented in aggregate form with the exception of quotes from participants that will be identified by a system of letters and numbers and sufficiently worded to deter identification.

Should you wish a copy of the summary of the findings I will provide you with these.

In closing:

If you would like more information before participating in this study, please use the contact information below. Also, feel free to share this letter and the poster with other nursing colleagues.

I appreciate you considering participating in the study and hope you will share your story with me.

*Mary Anderson*

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**Appendix E: Consent**

Athabasca University

## Faculty of Health Disciplines

**Informed consent**

**Name of Research Project**: Exploring healthcare workers' occupational safety experiences with workarounds

This project was approved by Athabasca University's Ethics Review Board on _____ **Please initial one**

Do you understand that you have been asked to take part in a research study? Yes_ No__

Have you had an opportunity to ask questions about the study? Yes_No__

Do you understand that you do can withdraw or not participate at any time? Yes_No__

Do you understand who will have access to the information you provide? Yes_No__

Has confidentiality and the process for storage of data been explained to you? Yes_No__

Has the researcher explained her role as investigator? Yes_No__

I understand by signing this document that I agree to take part in this study:

_____ _____

Signature of research participant Printed name of participant

_____ _____

Signature of Investigator Date

**Investigator**: Mary Anderson, BSN COHN(C) RN
MN Generalist Student
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## Appendix F: Interview questions

Demographic Questions: Male ☐ Female ☐

Age group: 18 – 30 ☐ 31-50 ☐ 51 plus ☐

Job category / position:_____ Years' experience in healthcare:_____ FT / PT/ Casual

Type of facility: Hospital ☐ Long Term Care site ☐ Health Centre ☐ Community ☐

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1. Would you describe to me in your own words what you believe the word workaround means?
2. Can you provide examples of a workaround that you may have used or you have seen used by another worker?
3. Please tell me about some of the reasons why you or another worker may have used this workaround?
4. What were the results of using the workaround?
5. Can you describe a situation where a workaround may have resulted because of a change made within your department or the organization?
6. Problem solving to complete a task sometimes results in a workaround. What strategy or strategies do you think could be used to capitalize on this type of problem solving?
7. If you could make recommendations about any aspects of workarounds that you have used or seen in the workplace, what would they be?
8. What does occupational safety mean to you?
9. What experience have you had with workplace safety policies, training or processes?
10. Any additional thoughts you would like to offer?