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**Bounded by Repertoires and Roles: Communication through Multiple
ICTs in a Health Care Organization**

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**Bounded by Repertoires and Roles: Communication through Multiple
ICTs in a Health Care Organization**

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Millie Archer Harrison

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“Learning is not attained by chance; it must be sought for with ardor and diligence.” –Abigail Adams

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Abstract

Bounded by Repertoires and Roles: Communication through Multiple ICTs in a Health Care Organization

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Health care has become the largest employer in the United States, and health care organizations are looking to ICTs as a solution to facilitate interprofessional communication and patient care. Yet extant findings show mixed results on the efficacy of ICT use for coordination, and little is known about how health care professionals use their *collection of ICTs*, as opposed to a singular device, to communicate. Inspired by the theoretical underpinnings of *communication media repertoires* and *boundary theory*, this dissertation provides an empirical link between the use of multiple ICTs, that are both organizationally-issued and personally-owned, and the complexities of coordinating patient care.

Drawing on qualitative data collected from observations, interviews, and focus groups at a pediatric hospital in the Southern U.S., this research investigates the communicative practices of different teams of allied health professionals—an underexplored population making up approximately 60% of the health care workforce. Differences in technological access, managerial expectations, and workflows emerged within and across the professional groups in the health care organization studied. The findings reveal how allied health professionals experienced *repertoire misalignment*, a

situation where ICTs and routines of use clashed. Furthermore, many people were overloaded by learning which ICTs their colleagues used and how they used them—defined as *communication load* issues—which impeded the efficiency and quality of their work.

This dissertation further shows how ICT repertoires are situated at the crossroad of *multiple role boundaries*, complicated by organizational rules and norms that were inconsistent across teams. These allied health professionals held strong professional identities, and they were asked—or required—to use personal mobile phones for work purposes. When organizational, professional, and personal boundaries were at odds, employees did not feel empowered to enact their ICTs in ways that privileged professionalism or personal preferences. Thus, although the use of ICT repertoires *can* facilitate communication within and across professional teams, this dissertation exposes how health care professionals’ work practices are being challenged and constrained by organizational demands for ICT repertoire use.

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Chapter 1: Introduction

“We use a lot of technology to communicate, like SecureText [a HIPAA compliant texting application used on a personal mobile phone], HospiPhones [hospital-issued mobile phones with call-only function], and the EHR [Electronic Health Record] on our office computers. We also carry tablets to use for patient education... SecureText is how we communicate as a [professional] group, but then how we interact with our units depends on each child life specialist. Like I use my personal phone a lot [for interprofessional communication], but some people rely on HospiPhones. So yeah, there’s a lot we have to keep up with technology-wise here at the hospital.” –Jiminy, child life specialist

“I mostly use SecureText to communicate. But some people in our [rehabilitation services] group don’t use SecureText at all, so I have to reach them other ways, like have the therapist who carries one of the HospiPhones call them [for me], or I go track them down in the hospital myself. And some people in other groups, like physicians, may not use SecureText, so I have to find other ways to reach them, like use a desktop phone.” –Bonnie, occupational therapist

STUDY RATIONALE

Modern organizations increasingly depend on information and communication technologies (ICTs) for processes of work and organizing (Barley, 2017; Rice & Leonardi, 2014; Stephens & Kee, 2019). ICTs such as mobile phones, computers, and tablets have blurred temporal and spatial boundaries that hindered communication in previous decades, thus enabling individuals to have access, and respond more quickly, to colleagues near and far (Leonardi, Treem, & Jackson, 2010; Rennecker & Godwin, 2005; Stephens, 2018; ter Hoeven, van Zoonen, & Fonner, 2016). Additionally, employees in today’s workforce typically use not one, but *many*, ICTs to communicate at work (Watson-Manheim & Belanger, 2007; Sayah, 2013; Stephens, 2012; Stephens, Harrison, Zhu, Iyer, Hairston, & Luk, 2016), and use of these ICTs can vary greatly across individuals, teams, and

organizations (Rice & Leonardi, 2014; Mazmanian, 2013; Stephens, Zhu, Harrison, Iyer, Hairston, & Luk, 2017b). Furthermore, as Watson-Manheim and Belanger (2007) argue, “Use of these multiple media in complex work environments can have significant impact for productivity and efficiency of individuals and organizations” (p. 268).

One complex work environment that uses multiple ICTs to communicate is hospitals. As the opening quotes demonstrate, hospital professionals use a variety of ICTs to do their work, and they use their devices to communicate across multiple teams and professional groups. Indeed, interprofessional communication, or communication among individuals who are trained in different professional disciplines, is an essential component of health care organizing (Baker, Day, & Salas, 2006; Bridges, Davidson, Odegard, Maki, & Tomkowiak, 2011; Mitchell, Parker, & Giles, 2011; Molyneux, 2001; Quan et al., 2013). Scholars and practitioners have searched for ways to make interprofessional communication more efficient (Hall, 2005; Mitchell et al., 2011; Rosen et al., 2018; Weller, Boyd, & Cumin, 2014), given the majority of communication exchanges in health care occur across professional groups coordinating care (Edwards, Fitzpatrick, & Augustine, 2009; O’Daniel & Rosenstein, 2008; Quan et al., 2012) and communication failures are listed as one of the most prevalent contributors to medical errors and poor patient outcomes (Makary, 2016; Moore, Wisnivesky, Williams, & McGinn, 2005; Sutcliffe, Lewton, & Rosenthal, 2004; The Joint Commission, 2015).

Research has generated mixed results over the effectiveness of individual ICTs, such as pagers (e.g., Reddy, Pratt, McDonald, & Shabot, 2003; Rivera-Rodriguez & Karsh, 2010), mobile phones (e.g., Lo et al., 2012; Martin et al., 2019; O’Connor et al., 2009;

Ventola, 2014; Wu et al., 2011), instant messaging applications (e.g., Drake, Claireaux, Khatri, & Chapman, 2016; Johnston et al., 2015), and the EHR (e.g., Berger, Curtis, Smith, Harnett, & Abernethy, 2016; Rathert et al., 2019), with some researchers questioning the efficacy of ICTs for interprofessional communication (Barr, Vania, Randall, & Mulvale, 2017; Graves, Doucet, Dubé, & Johnson, 2018; Quan et al., 2012). One possible contributor to the mixed results of these studies could be their approach to studying ICTs individually: recent organizational scholarship has argued that ICTs cannot be studied in isolation when seeking a complete picture of technology use in organizations, as employees seldom use only one ICT to share information and communicate at work (Bélanger & Watson-Manheim, 2006; Cameron, Barki, de Guinea, Coulon, & Moshki, 2018; Stephens et al., 2016; Watson-Manheim & Bélanger, 2007). Yet little is known about how the *collective* use of ICTs enables and/or constrains interprofessional communication practices in health care organizations.

Additionally, research is limited by the *types of professionals* studied, as scholarship has focused primarily on how physicians and nurses use ICTs without giving attention to other professionals integral to patient care (Harrison, Smith, Greenwell, & Stephens, 2018; Sokas et al., 2013; Stephens et al., 2016), such as child life specialists, occupational therapists, and social workers. As health care has become the largest employer in America (Thompson, 2018), approximately 60% of the U.S. health care workforce is classified as belonging to an allied health profession (Association of Schools of Allied Health Professions, 2018), and these professionals are integral to interdisciplinary

teamwork (Pajalich, 2019), scholars must learn more about how this underexplored health care discipline uses ICTs to coordinate patient care.

Finally, research has not fully explored the *role demands experienced* by health care professionals when using multiple ICTs for work. As individuals can partake in work activities outside of organizational time and space through communication technologies (such as checking work email at home while “off duty”; Golden, 2013; Mazmanian, 2013), and many workplaces, like hospitals, are now asking employees to bring their personal devices to the organization to use for work purposes (Stephens, 2018; Stephens et al., 2017b), ICTs can fall at the intersection of multiple role identities and demands.

The present study addresses these limitations and extends scholarship by examining how an underexplored population of hospital professionals—*allied health professionals*—use multiple ICTs to coordinate patient care. Using the theoretical lenses of *communication media repertoires* (Watson-Manheim & Belanger, 2007) and *boundary theory* (Ashforth, Kreiner, & Fugate, 2000; Clark, 2000; Nippert-Eng, 1996), this dissertation contributes to theory and practice by showing how allied health professionals’ communication practices were bounded by their repertoires and roles. In other words, how these professional used their ICTs, and the communicative outcomes of their use, were wrapped up in their access to ICTs, the formal and informal expectations of ICT use, and the different ways they identified with their organizational, professional, and personal roles.

PREVIEW OF DISSERTATION

This dissertation presents data from a 10-month study of the multiple ICT use of allied health professionals at a pediatric hospital. In the next chapter, Chapter 2, I present the literature relevant to the context and theorization of this study. Specifically, I provide an overview of research on multiple ICT use in organizations, boundary theory, and how organizational members work through boundary (in)congruence when using ICTs. Based on this prior literature, I offer six research questions.

In Chapter 3, I describe my methodological approach to this dissertation. I provide a detailed explanation of my research site, how I gained site access, and how I recruited participants. I then give an overview of my three participant groups: child life specialists, rehabilitation services, and social work/case management. I describe how I collected data through observational, interview, and artifact techniques, and I conclude the chapter by describing my grounded, constructivist approach (Charmaz, 2014) for analyzing the data.

I present the results of my dissertation in Chapters 4 through 6. In Chapter 4, I answer my first two research questions by describing allied health professionals' ICT repertoires and presenting the organizational factors that impacted ICT use for each professional group. In Chapter 5, I answer RQ2a and RQ2b by exploring three role boundaries allied health professionals encountered through their ICT repertoires—organizational, professional, and personal roles—and I explore how roles were enabled and constrained through multiple ICT use. In Chapter 6, I answer RQs 3a and 3b by elaborating on how organizational, professional, and personal roles clashed for allied health

professionals when using ICT repertoires, as well as how participants addressed these perceived role incongruences through boundary work.

In the final chapter of this dissertation, Chapter 7, I discuss the implications of the present study. I offer three theoretical contributions to ICT repertoire and boundary research: namely, I (1) show how ICT repertoires, and the organizational structures in which they are grounded, impact communication *within and across professional groups* for allied health professionals; (2) link ICT repertoire use to *multiple* role boundaries; and (3) question whether individuals have *choice* in ICT repertoire use and the boundary management strategies for allied health professionals. I also present the practical implications of this work by offering suggestions for interprofessional and managerial communication when using ICT repertoires in health care contexts. I conclude this dissertation by presenting study limitations and offering three directions for future research: expanding boundary perspectives, exploring the affordances of ICT repertoires, and examining ICT repertoires in relation to stress and burnout.

Chapter 2: Literature Review

In this chapter, I review literature relevant to this dissertation and develop research questions. First, I outline extant literature on multiple ICT use in organizations, including scholarship on multiple ICT use over time and the relationship between the organizational environment and ICT use, followed by a presentation of RQ1a and RQ1b. I then offer boundary theory as a useful framework for expanding understanding of ICT repertoires in organizational contexts, and I include concepts such as boundary theory, boundary incongruence, and boundary work. I present RQ2a, RQ2b, RQ3a, and RQ3b in the boundary section. I conclude this chapter by presenting a table summarizing the research questions.

MULTIPLE ICT USE IN ORGANIZATIONS AND ICT REPERTOIRES

Walk into almost any organization today, and you will see people using many information and communication technologies (ICTs) when working, such as texting on a smartphone, typing an email on a desktop computer, or placing a call on a landline or mobile device, to name a few examples. According to Rice and Leonardi (2014), *information and communication technologies* (ICTs) refer to “devices, applications, media, and associated hardware and software that receive and distribute, process and store, and retrieve and analyze digital information between people and machines (as information) or among people (as communication)” (p. 426). Given that people seldom use only one ICT to share information and to communicate (Bélanger & Watson-Manheim, 2006; Stephens et al., 2016), over the past two decades organizational scholars have argued ICTs cannot

be studied in isolation when seeking a complete picture of technology use in organizations. Rather, to capture the complexity of the modern communication technology environment, focus instead must be shifted to how people select from and use several ICTs, either in succession or in combination, to do their work (Stephens, 2007; Stephens, Sørnes, Rice, Browning, & Sætre, 2008; Reich, Turner, & Tinsley, 2008). The practice of using multiple communication technologies is found in several related bodies of literature, with two major camps of research emerging: how multiple ICTs are used over time, and the impact of the organizational environment on multiple ICT use.

Multiple ICT Use over Time

First, scholarship has examined how multiple ICTs are used over time. For example, Bélanger and Watson-Manheim (2006), Stephens (2007), Stephens and Davis (2009), and Stephens and colleagues (2008) have studied *combinatorial* (Stephens et al., 2008) or *sequential ICT use*, in which people choose one ICT at one time and, after a time lapse, use a second ICT to accomplish a communication goal. ICT succession theory (Stephens, 2007) proposes that people use ICTs sequentially to help them complete goals, such as gathering information and problem solving (see also Stephens & Rains, 2011; Westerman, Van Der Heide, Klein, & Walther, 2008, for empirical interpersonal analyses).

Within organizational contexts, many scholars have focused on the purpose of sequential use. For example, Stephens and colleagues (2008) found employees use sequential combinations of ICTs to help prepare for face-to-face meetings, accomplish daily tasks, and follow up with a persuasive message. Watson-Manheim and Bélanger

(2007) demonstrated that sequential media use assisted in knowledge sharing and resolving conflicts, but single media use was preferred for relationship development, coordination, and information gathering. In a similar vein of research, scholars have explored *serial* (Bélanger & Watson-Manheim, 2006) or *redundant ICT use* (Leonardi, Neely, & Gerber, 2012; Stephens, Barrett, & Mahometa, 2013), in which the same message is repeated through two or more ICT channels. These scholars examining message redundancy have argued that following up with a message through a different communication channel (such as instant message → email) can increase perceptions of urgency (Stephens, Barrett, & Mahometa, 2013), mitigate threats, and assist in sensemaking (Leonardi, Neely, & Gerber, 2012).

Others have studied *simultaneous ICT use*, also referred to as *concurrent ICT use* (Bélanger & Watson-Manheim, 2006) or *multicommunicating* (Cameron et al., 2018; Reinsch, Turner, & Tinsley, 2008; Stephens, 2012, 2017; Turner & Reinsch, 2007). Research has shown that simultaneous ICT use in organizations increases perceptions of availability to others (Cameron & Webster, 2011; Cardon & Dai, 2014; Dennis, Rennecker, & Hansen, 2010) and helps people access information (Rennecker et al., 2010; Stephens et al., 2012; Turner & Reinsch, 2010). On the other hand, simultaneous ICT use can increase errors (Turner & Reinsch, 2010) and foster perceptions of inattentiveness (Cameron & Webster, 2011; Stephens & Davis, 2009). Researchers have also explored dialectical tensions related to multicommunicating. For example, Erhardt and Gibbs' (2014) findings highlighted employees multicommunicating during meetings to accomplish more tasks.

Management, however, discouraged multicomputing, as they wanted employees to focus on the singular task at hand.

Multiple ICT Use and the Organizational Environment

Another way researchers have explored multiple ICT use is by focusing on the communicative context in which people use ICTs. Media ecology scholars, such as Nardi and Whittaker (2002) and Scolari (2012), paved the way for this line of research. They argued that “communication technologies... create environments that affect the people who use them” (Scolari, 2012, p. 207), and they were interested in exploring how media structure people’s perceptions and make them act in certain situations. Media ecology research is helpful in that it acknowledges multiple media are used to communicate in an organizational environment, yet these descriptions pose problems, as they ascribe deterministic characteristics to the technology without layering social and situational influences into the use equation.

Taking a step back from technological determinism and bringing people and their unique use needs back into the agentic fold, Yoo and Alavi (2001) argued that the physical and material characteristics of ICTs *and* the social and organizational context of use impact how people construct meaning of, and ultimately use, ICTs. Exploring this concept empirically, Woerner, Orlikowski, and Yates (2004) identified a *media toolbox* used by members of a hybrid manufacturing/sales organization, in which “a number of media technologies can be used alone or combined, for individual or concurrent conversations, depending on what needs to be communicated and accomplished within a group at

particular times in particular places” (p. 25). Furthermore, Sørnes, Stephens, Browning, and Sætre (2005) argued social and material environmental factors, such as ICT training and malfunctioning technology, can enable and constrain people’s ICT use at work.

Expanding Multiple ICT Use Research: A Repertoire Approach

Taking into consideration both the patterns of use *and* the situated context of use, Watson-Manheim and Bélanger (2007) introduced the concept of *communication media repertoires*, which they defined as “the collection of communication media and identifiable routines of use for specific communication purposes within a defined community of users” (p. 283, 2007). Inspired by Orlikowski and Yates’s (1994) *genre repertoire* research and Orlikowski’s (2000) *technologies-in-practice* approach, Watson-Manheim and Bélanger argued repertoires—as organizational communication resources—are situated in socially established rules that regulate ICT use, and these rules are developed through recurrent use of ICTs by organizational members. Thus, repertoires point to the complexity of the communication environment, and they help researchers go beyond the scope of one particular communication tool by considering how multiple ICTs and their use affect, and are affected by, ongoing practices within an organization. Moving forward, I use the term *ICT repertoire* instead of communication media repertoire, given that communication media are often associated with the channels through which people share information with others, such as e-mail, face-to-face, or phone calls. ICTs, on the other hand, highlight the entwined nature of information and communication (Barley, 2017), thus allowing for a broader set of actions to study. Namely, individuals can seek, store, and manage

information through ICTs, as well as share and communicate information with others (Stephens & Mandhana, 2017).

Although repertoires provide a promising avenue for researching multiple ICTs in organizations, only a handful studies have undertaken this approach. These scholars have shown that ICT repertoires—which can consist of tools such as email, phone calls, and text messaging—are used to coordinate, share knowledge, build relationships, and resolve conflict (Jarrahi & Sawyer, 2015; Stephens et al., 2016; Watson-Manheim & Bélanger, 2007). On the other hand, communication through ICT repertoires can also be inhibited due to strict organizational policies and norms (Jarrahi & Sawyer, 2015), power structures that promote status differences (Stephens et al., 2016), and misaligned ICT preferences and expectations (Munkejord, 2007; Walden, 2016). Furthermore, these scholars noted the importance of grounding their findings within organizational and situational contexts: conditions such as the physical structure of the workplace (Jarrahi & Sawyer, 2015; Watson-Manheim & Bélanger, 2007), interpersonal trust among employees (Stephens et al., 2016; Watson-Manheim & Bélanger, 2007), and organizational incentives to use certain ICTs (Jarrahi & Sawyer, 2015; Watson-Manheim & Bélanger, 2007) were shown to affect how employees perceived and used their ICT repertoires.

Exploring ICT Repertoires in Health Care Organizations

Most research on ICT repertoires has been conducted in sales companies, consulting firms, and other corporate organizations (Jarrahi & Sawyer, 2015; Munkejord, 2007; Walden, 2016; Watson-Manheim & Bélanger, 2007). Indeed, with the exception of

Stephens and colleagues' (2016) work, little is known about the collective technology use of individuals working in health care organizations. Over the past two decades, ICTs have increasingly been used in health care contexts, like hospitals, with the intention to foster accessible, cost-efficient care and to encourage more efficient communication among health care teams (Ahern, Woods, Lightowler, Finley, & Houston, 2011; Graves & Doucet, 2016). Furthermore, U.S. policy—such as the 1996 Health and Insurance Portability Act (HIPAA) and the Health Information Technology for Economic and Clinical Health Act (HITECH) of 2009—has brought ICT use to mandatory status in health care, and as of 2015 penalties are imposed if patient-information technology is not “meaningfully used” (Mennemeyer, Menachemi, Rahrkar, & Ford, 2016). As ICT use is pervasive in hospitals and has consequences for work outcomes (Barrett & Stephens, 2017b; Sergeeva, Aij, van den Hooff, & Huysman, 2016; Stephens, 2018; Stephens et al., 2017b), it is imperative for researchers to learn more about the role of ICT repertoires in hospital professionals' work practices. Yet extant literature is limited in two ways: typically, only *one* ICT is explored in studies of health care organizations, and studies rarely include a range of hospital professionals.

Limitation one: Exploring a singular ICT. To date, research on ICT use in health care organizations has predominantly focused on perceptions of use and the use effects of *one* ICT (i.e., the EHR) or one ICT type (e.g., mobile devices). For example, the electronic health record (EHR) has attracted major attention in the literature (Barrett & Stephens, 2017b; Ford, Menachemi, Peterson, & Huerta, 2009; Gagnon et al., 2014; Lin, Lin, & Roan, 2012; Miller & Sim, 2004). EHR use among hospital professionals has been linked

to greater access to information (Kruse et al., 2015), improved continuity of care (D'Amore et al., 2014), centralization of information and resources (Miller & Sim, 2004), better care coordination (Jones & Furukawa, 2014; Kruse et al., 2014), long-term cost savings (Kruse et al., 2015), and reduction in medical errors (Kruse et al., 2014). Yet others have associated EHR use with productivity loss (Jamoom & Hing, 2015; Raglan et al., 2017; Meigs & Solomon, 2016), decreased perceptions of autonomy (Hamid & Cline, 2013), and decreased communication with patients (Doyle et al., 2012; Ventres et al., 2006), particularly among physicians. Research holds EHRs can be ineffective when usability is perceived as poor, users do not have adequate technological support, and the tool is out of sync with professional norms and workflows (Gagnon et al., 2014; Lin, Lin, & Roan, 2012). Yet outcomes have been shown to be more promising when professionals have greater flexibility and adaptability in their EHR use. For example, Hyman and colleagues (2014) found that innovative use of the EHR supported harm reduction initiatives in a hospital. Furthermore, Barrett and Stephens (2017a, 2017b) found that employees who engaged in socially-constructed EHR workarounds (i.e., they adapted EHR use to meet their needs) were less resistant to using the EHR, perceived the system as advantageous to their work, and expressed more positive attitudes toward technological change.

Another prevalent avenue of research is mobile device use in health care organizations (Prgomet, Georgiou, & Westbrook, 2009; Stephens, 2018; Stephens et al., 2017b; Ventola, 2014). Research shows that use of mobile devices, such as smartphones and tablets, can decrease response wait times among health care providers and improve the speed of decision-making (Lo et al., 2012; Wu et al., 2011), and use of mobile ICTs by

physicians and nurses has also been linked to improved task prioritization and greater perceived legitimacy when making requests (Melby & Hellesø, 2014). On the other side of the coin, research has shown mobile device use increases interruptions among hospital professionals (Quan et al., 2013; Reddy, McDonald, Pratt, & Shabot, 2005; Sovoll et al., 2013), and communication through mobile technology can lose contextual richness that is key in health care decision-making (Lo et al., 2012; Melby & Hellesø, 2014; Reddy et al., 2005). Furthermore, clinical evidence has yet to establish a relationship between mobile phone use and a reduction in clinical errors (Etchells et al., 2010).

A recent strain of research exploring mobile device in health care looks at Bring Your Own Device (BYOD) to work policies. BYOD is phenomenon that explores how people bring their personal ICTs into an organization and use these devices for work purposes (Moyer, 2012; Stephens et al., 2017b). Within health care contexts, this literature has largely centered on the use of personal mobile phones at work. For example, Lang (2012) found that 85% of the 130 hospitals surveyed supported personal mobile device use for work purposes. In her review of BYOD policies in hospitals, Moyer (2013) outlined how BYOD policies can cut costs for health care organizations, but bringing personal devices to work can result in security breaches, patient confidentiality violations, and phone theft. To ensure safe and efficient personal device use, Moyer recommended hospitals make policies clearer and increase educational resources that address appropriate personal mobile phone use at work (see also Al Ayubi et al., 2016, for similar recommendations). In another synthesis of BYOD literature, Kadimo and colleagues (2018) described how BYOD policies can help hospital employees' be more productive,

efficient, and innovative, and the use of personal phones can improve job satisfaction as well as patient satisfaction. Yet similar to Moyer's (2013) findings, unguided mobile device use among hospital professionals can lead to inappropriate use and security breaches. In perhaps the only empirical BYOD investigation in a health care setting, Stephens and colleagues (2017b) found three boundary issues that emerged among nurses and physicians when a hospital implemented a BYOD policy: organizational issues of policy communication, infrastructure dead zones, and employees bearing mobile device cost; team issues of differential rules related to personal mobile phone use; and individual-level issues of role autonomy and the degree of patient-facing work.

While findings on the discrete use of ICTs in health care are interesting and important, isolated use of these ICTs is likely not indicative of health care professionals' actual work experiences (Stephens et al., 2016). Indeed, research shows health care professionals use a variety of communication technologies to do their work (Harrison, Smith, Greenwell, & Stephens, 2018; Stephens, 2018; Stephens et al., 2016). What is more theoretically enriching, and practically relevant, is to explore the ICT repertoires of different health care professionals—such as a collection of ICTs including the EHR, landline phones, tablets, and mobile phones—and examine how repertoire use patterns enable and constrain patient care processes.

Limitation two: Including a narrow scope of hospital professionals. At least five professional subgroups exist in health care: physicians, nurses, allied health professionals (e.g., physical therapists, social work, dietitians), clinical support professionals (e.g., clerks, secretaries), and management professionals (e.g., medical

director, operations manager, chief medical officer; Petrakaki et al., 2016a). In large health care organizations like hospitals, people from all five subgroups work together to accomplish patient care (Pajalich, 2019). Indeed, interprofessional communication, or communication among individuals who are trained in different professional disciplines, is a cornerstone of patient care in health organizations today (Baker et al., 2006; DiazGranados et al., 2018; Nembhard & Edmonson, 2006; Mitchell et al., 2011; Shrader, Kern, Zoller, & Blue, 2013), and ICTs play a pivotal role in interprofessional communication and collaboration (Graves & Doucet, 2016; Lo et al., 2012; Stephens, 2018). However, most ICT research in the health care sector has focused on the communication of nurses and physicians while providing little understanding of other members involved in the patient care process. A few notable exceptions exist. In their study of pharmacists, physicians, and nurses, Stephens and colleagues (2016) found that each professional group had unique ICTs, as well as overlapping ICTs with other professional groups. Use of the professional groups' ICTs depended on their reliance of others to make decisions, perceptions of ICT use acceptability, and the visibility of communication contacts. Harrison, Smith, Greenwell, and Stephens (2018) explored how front-desk clerks in a health care clinic used ICTs such as phones and patient portals when working. They found that multitasking was a common ICT use pattern for these clerical employees, and the multitasking behaviors increased perceptions of impression management demands and potentially jeopardized patients' protected health information (PHI).

Although Stephens et al. (2016) and Harrison and colleagues' (2018) studies shed light on how health care professionals outside of medicine and nursing use ICTs at work and the consequences of their use behaviors, scholarship is only beginning to scratch the surface. Calls have been made for the inclusion of a broader work team when exploring hospital and patient care concerns (Sokas et al., 2013; Vorrell & Carmack, 2015), particularly in relation to allied health professionals. *Allied health professionals* are professionals whose services complement medical and nursing practices (AMA, 2019), such as dietitians, speech language pathologists, radiographers, and physical therapists. It is estimated that 60% of the U.S. health care workforce are classified as belonging to an allied health discipline (Association of Schools of Allied Health Professions, 2018), yet little is known about allied health professionals' communication processes (Scott et al., 2012).

Communication is at the heart of health care successes and failures (Bates et al., 2003; Gurses & Xiao, 2006; The Joint Commission, 2015) and ICTs have become a crucial part of patient-care practices (Lin, Lin, & Roan, 2012) and interprofessional collaboration in hospitals (Graves & Doucet, 2016; Lo et al., 2012; Pirnejad, Niazkhani, Berg, & Bal, 2007; Varpio, Schryer, & Lingard, 2009). Given that allied health professionals play an important role in these communication and collaboration processes and little is known about their ICT use (Sokas et al., 2013; Stephens et al., 2018), an ICT repertoire framework is useful in unfolding how ICTs are used in different allied health professionals' work practices. Thus, I pose the first research question:

RQ1a: What are the ICT repertoires of allied health professionals?

Given that the social, material, and temporal aspects of the organizational environment are essential in understanding ICT repertoires (Bélanger & Watson-Manheim, 2006; Watson-Manheim & Bélanger, 2007), I ask an additional RQ:

RQ1b: What factors influence the use of ICT repertoires for allied health professionals working in a hospital?

A BOUNDARY APPROACH TO ICT REPERTOIRES

Watson-Manheim and Bélanger's (2007) repertoire framework is helpful in understanding how ICTs are used in practice among a "defined community" (p. 268) in a specific organizational context. However, this approach does not grasp fully the unique expectations and assumptions that individuals within the defined community hold when it comes to their ICT use. Indeed, research on technological frames, or "the underlying assumptions, expectations, and knowledge people have about a technology" (Orlikowski & Gash, 1994, p. 174), show that people can have different expectations of ICTs in different contexts (Lin & Silva, 2005; Davidson, 2006; Leonardi, 2011; Mazmanian, 2013). When a technology transcends contexts, such as using social media at work *and* in one's personal life, individuals approach workplace technologies with previously held expectations they formed from personal-life use (Treem, Dailey, Pierce, & Leonardi, 2015). Furthermore, social identity researchers show that people have multiple identities or roles, such as mother, friend, volunteer, and social worker (Ashforth, Kreiner, & Fugate, 2000; Kuhn & Nelson, 2002; Larson & Pepper, 2003; Thoits, 2003) and people orient to their ICTs according to their roles (Piszczek, Pichler, Turel, & Greenhaus, 2016; Rice,

2017; Senarathne-Tennakoon, Silveira, & Taras, 2013). Given the multifaceted roles with which an individual can identify, and that many organizations are asking employees to use devices that transcend the context of work (Stephens et al., 2017; Stephens, 2018; Treem et al., 2015), a more nuanced approach to understanding ICT repertoires is needed. Thus, I turn to a boundary perspective to explore what roles allied health professionals enact when using their ICT repertoires, and how use of repertoires enables and constrains their roles.

Boundary Theory

With roots in social psychology, anthropology, and management, boundary theory examines how individuals construct, maintain, negotiate, or change boundaries to categorize and simplify their social worlds (Ashforth et al., 2000; Clark, 2000; Nippert-Eng, 1996). Boundaries, as Kreiner, Hollensbe, and Sheep (2009) defined, are conceptual and/or material borders that “delimit the perimeter or scope of a given domain” (p. 705). Kislov (2018) described boundaries as central to social life, further elaborating, “Their nature is dual (providing both positive and negative effects), composite (creating complex boundary systems), and dynamic (subject to construction and reconstruction)” (p. 818). Boundaries can exist within and across social spheres (Powell & Davies, 2012; Stephens et al., 2017b), delineate flows of power and knowledge (Santos & Eisenhardt, 2005), define responsibilities and relationships (Ashforth et al., 2000; Kreiner et al., 2009), and indicate what is and is not permissible in certain contexts (Stanko & Beckman, 2015; Stephens et al., 2017b).

Within organizational research, scholars have used boundary theory predominantly to explore how people enact different role identities as they move across organizational and social domains (Dumas & Sanchez-Burks, 2015; Olson-Buchanan & Boswell, 2006). According to Ashforth and colleagues (2000), role identities entail “socially constructed definitions of the special goals, values, norms, interaction styles and time horizons cued by a certain role” (p. 473) and are associated with the specific requirements of the positions individuals occupy (Katz & Kahn, 1978), such as a person being a mother, a supervisor, and a social worker. According to boundary theory, the more similarity an individual perceives in his or her roles, the easier it is for the person to transition between them. Those who have highly contrasting roles, however, have difficulty “switching cognitive gears” and “disengaging psychologically from the identity implied by one role and re-engaging in the dissimilar identity in the second role” (Ashforth et al., 2000, p. 475).

ICT use has provided fruitful territory for exploring how individuals perceive boundaries among their various roles (Olson-Buchanan & Boswell, 2006). Individuals can partake in work activities outside of organizational time and space through communication technologies (such as checking work email at home while “off duty”; Golden, 2013; Mazmanian, 2013), and many workplaces now ask employees to bring their personal devices to work to use for business purposes (Stephens, 2018; Stephens et al., 2017b). Thus, ICTs can fall at the intersection of multiple role identities and boundary demands. Most studies have examined one ICT, such as mobile phones or email, in relation to two role boundaries (such as the work-home or personal-professional interface; Duxbury, Higgins, Smart, & Stevenson, 2014; Golden & Geisler, 2007). In a complex environment

like a hospital, diverse health professionals collaborate on and coordinate patient care. These individuals can use many ICTs throughout the workday that are both issued by the organization and owned personally (Stephens, 2018). This blending of organizational and personal devices in ICT repertoires—and access to these tools across time and space—means individuals can encounter diverse role boundaries within and outside of their place of work (Stephens et al., 2017b; Westbrook et al., 2009). To better understand the role boundaries of allied health professionals in relation to their ICT repertoires, I ask the following research questions:

RQ2a: What role boundaries do allied health professionals encounter when using their ICT repertoires?

RQ2b: How do ICT repertoires support and/or challenge allied health professionals' role boundaries?

Boundary Incongruence

In recent years, scholars have identified tensions or conflict that emerge when employees' ICT use does not align with organizational expectations and requests (Duxbury et al., 2014; Gibbs et al., 2013; Stephens et al., 2017b). *Boundary incongruence* (Kreiner et al., 2009; Soundararajan, Khan, & Tarba, 2018) entails turbulence between two or more boundaries, such as organizational demands clashing with personal preferences. As Lamont and Molnár (2002) explained, boundary incongruence involves a “struggle over... definitions of reality” and a conflict of “resources (material and nonmaterial) and social opportunities” (p. 168). As Ammons (2013) summarized, when organizational structures,

such as work policies and practices, are incongruent with employee's boundary preferences, organizational members experience stress and decreased wellbeing (Edwards & Rothbard, 1999), heightened work-life conflict (Chen, Powell, & Greenhaus, 2009), and decreased organizational commitment and job satisfaction (Rothbard, Phillips, & Dumas, 2005).

Previous organizational research on boundary incongruence has focused on how people take action when "work/non-work" (Beckman & Stanko, 2019), "work/home" (Fonner & Stache, 2012; Kreiner et al., 2009; Nippert-Eng, 1996), "work/family" (Chen, Powell, & Greenhaus, 2009; Kossek, Lautsch, & Eaton, 2006; Piszczek, 2017; Voydanoff, 2005), "work/personal life" (Bulger, Matthews, & Hoffman, 2007; Golden & Geisler, 2007; Mellner, Aronsson, & Kecklund, 2014; Sayah, 2013), and "professional/personal" (Ceccinato, Cox, & Bird, 2015; Dumas & Sanchez-Burks, 2015) boundaries are in conflict. Within these studies, "work" and "professional" boundaries delineate the sphere of employment, while "non-work," "family," "personal," and "life" represent friends, family, other personal relationships, and leisure activities. When bringing ICTs into the boundary (in)congruence research fold, scholars have shown employees experience more satisfaction and efficacy in their roles when their personal preferences for ICT use are similar to organizational expectations (Knapp, Smith, Kreiner, Sundaramurthy, & Barton, 2013; Rothbard, Phillips, & Dumas, 2005). For example, Hislop and colleagues (2015) found that mobile phone use can help alleviate the social isolation of those who work from home, and Piszczek (2017) found that people who used their mobile phones to integrate work and family roles felt more in control of their boundaries. Although she did not study boundaries

explicitly, Mazmanian (2013) showed how a group of salespeople—who did not have norms related to how to use their organizationally-assigned BlackBerry—expressed positive sentiments toward their mobile device and felt it helped them better accomplish their organizational tasks before they ended their work day.

However, studies have also shown people experience tension and stress when their ICT boundary preferences do not match organizational demands (Duxbury et al., 2014). These tensions have been linked to two reasons suggested in the literature: pressure for constant connectivity and lack of boundary control.

Constant Connectivity

Research holds the use of mobile phones, laptops, and other ICTs has led to increased connectivity between the organization and its employees (Leonardi, Treem, & Jackson, 2010), and this connectivity has blurred the boundaries between work and personal life (Perlow, 1998; Wright et al., 2014). Indeed, scholars have shown that connectivity benefits the organization by improving workers' productivity through speed and flexibility (Coker, 2011; Mazmanian, 2013), yet constant connectivity often does not benefit employees (Cecez-Kecmanovic, Boell, & Campbell, 2014), particularly for distributed workers (Fonner & Roloff, 2012; Leonardi et al., 2010). Research shows always being attached to work intrudes upon personal time, as ICTs “can turn homes into electronic work cottages, expanding work into family time, and the reverse” (Kossek & Lautsch, 2008, p. 153).

Empirical studies have shown that employees feel they are “being wired 24 hours” from the constant connectivity to their ICTs (Broadfoot, 2001, p. 111), particularly with

increased expectations to respond (Mazmanian, Orlikowski, & Yates, 2005; Mazmanian, Yates, & Orlikowski, 2006). Mazmanian (2013) found that lawyers—who had a group norm for constant connectivity—grew resentful of their BlackBerry and found it challenging to disconnect when on personal time. Matusik and Mickel (2011) found that respondents felt such a strong need to remain connected to their job that they checked their work-related emails when going to the restroom at home.

Lack of Control

Boundary control is defined as “the extent to which you perceive that you are in control of how you manage the boundaries between your work and personal life” (Kossek, 2016, p. 262). Research suggests organizations also have a stake in the creation and maintenance of boundaries (Cech & Blair-Loy, 2014; Harrison, 2017; Perlow, 1998; Pratt & Rosa, 2003). Indeed, boundaries have been used “as a subtle mechanism of organizational control” (Kirby et al., 2003, p. 6; see also Golden, 2013), in which the organization asserts boundary preferences and expectations upon organizational members (Stanko & Beckman, 2015) and employees can feel as if they have little or no choice in ICT use (Kossek, 2016; Stephens, 2018).

ICTs have complicated our understanding of boundary control, particularly in terms of with whom, when, where, and how workers communicate (Chesley, 2005; Mazmanian, Orlikowski, & Yates, 2006; van Knippenberg, Dahlander, Haas, & George, 2015). Stanko and Beckman (2015) argued this shift fundamentally alters our definitional understanding of boundary control; instead of seeing boundary control as a way in which organizations

control employees' *time* and *location*, ICTs move us into period where organizations aim to control employees' *attention*.

Recent research shows control can mitigate how organizations keep hold of employees' attention via mobile devices. For example, Fenner and Renn (2010) demonstrated that broad organizational expectations influenced after-work mobile device use, and Piszczek (2016) found that boundary control significantly influenced whether employees viewed technology use as a job resource or demand. Similarly, Mellner (2016) demonstrated that individuals who perceived they had low boundary control (i.e., they felt they little choice in their work- and personal-related smartphone use) experienced higher degrees of work-related smartphone use and greater after-work availability expectations. Furthermore, boundary control has been shown to shape personal outcomes. In general, low boundary control for individuals has been associated with decreased wellbeing, while higher employee boundary control results in greater psychological and physical wellbeing (Kossek, 2016).

In all, extant literature shows boundary incongruence has consequences for organizations and individuals. Yet it is unclear what, if any, boundary incongruence occurs for employees in health care organizations—and allied health professionals more specifically—through their *collective use* of ICTs. Thus, I ask the following research question:

RQ3a: What incongruences emerge across allied health professionals' role boundaries in relation to their ICT repertoires?

Boundary Work

To address boundary incongruence, individuals or groups perform *boundary work* (Gieryn, 1983; Llewellyn, 1998; Nippert-Eng, 1996), which is defined as “the activities [an entity] engages in to establish and maintain boundaries and manage interactions across those boundaries” (Faraj & Yan, 2009, p. 604). The vast majority of these studies on boundary work focus on *segmentation* and *integration* behaviors with respect to the work/personal life dynamic. Segmentation occurs when role boundaries are separate, strong, and relatively impermeable (Ashforth et al., 2000; Nippert-Eng, 1996). Individuals who are categorized as segmentors prefer roles to be separate and distinct behaviorally and psychologically, such as a person having one laptop for work and another to use at home. Integration, on the other hand, entails weak and thin boundaries in which roles are more fluid and overlapping (Ashforth et al., 2000; Nippert-Eng, 1996), such as a person using one mobile phone for work and personal use. Described in a different way, role segmentors tend to leave other roles “at the door” when engaging in a particular social domain (Olson-Buchanan & Boswell, 2006), whereas people who are highly integrated in their roles find it difficult to distinguish their mental states and behaviors among social domains (Ashforth et al., 2000; Reyt & Wiesenfeld, 2015).

When it comes to exploring boundary work through ICTs, scholars have found most individuals are not pure segmentors or integrators when managing work-life boundaries through their ICTs (Hislop & Axtell, 2011; Stephens et al., 2017b). Rather, a continuum exists between segmentation and integration (Kossek & Lautsch, 2012), and individuals can fluctuate in how they manage boundaries through their ICTs based on factors such as

personal preferences (Jahn et al., 2016; Powell & Greenhaus, 2010), organizational culture (Duxbury et al., 2014; Fenner & Renn, 2010), structural characteristics of their job (Cousins & Robey, 2015; Sayah, 2013), and perceived control over ICT use (Kossek & Lautsch, 2012; Piszczek, 2017; Stanko & Beckman, 2015). For example, in their research on hospital employees, Stephens (2018) and Stephens and colleagues (2017b) described how individuals spanned segmentation and integration practices when the organization pushed a bring-your-own-device (BYOD) to work policy and not all employees wanted to use their personal device at work. Park and Jex (2011) found that when employees expressed preferences for segmentation, and segmentation was a norm among their team members at work, they reported less work-related ICT use at home and greater psychological detachment.

Despite these scholastic advances, most studies have focused on boundary work related to *one* ICT, such as mobile phone use (e.g., Cousins & Robey, 2014; Hislop et al., 2015; Stephens et al., 2017b), or they described how people work through boundary incongruence with their ICTs in general without reference to any devices ICTs (e.g., Barber & Jenkins, 2014; Kossek & Lautsch, 2012; Park & Jex, 2011). Few studies have examined how people work through boundary incongruence when using multiple, specific ICTs (see Sayah, 2013, for an exception and a similar argument). Investigating ICT repertoires in relation to boundary work would be more indicative of actual work experiences, as employees seldom use ICTs in isolation at work (Harrison et al., 2018; Harrison & Stephens, 2019; Stephens, 2012; Stephens et al., 2017a). Furthermore, scholars have established that a continuum exists between integration and segmentation practices, but we

know little about the specific strategies and tactics individuals employ in the “in-between” spaces when using ICTs (Sayah, 2013; Stanko & Beckman, 2015). Thus, I ask the final research question:

RQ3b: When faced with boundary incongruence, how do allied health professionals manage role boundaries vis-à-vis ICT repertoires?

CHAPTER SUMMARY

In this chapter, I presented the relevant literature and the inquiries of this dissertation. Specifically, I provided an overview of research on multiple ICT use in organizations, boundary theory, and how organizational members work through boundary (in)congruence when using ICTs. I presented the limitations of these lines of research in relation to health care professionals, and I offered six research questions to extend repertoire and boundary research in health care contexts. These research questions are presented in Table 2.1.

In the next chapter, I move to my dissertation methodology. I first describe the research site, site access process, and participant recruitment techniques. I then provide an explanation for my data collection and analysis process, and I conclude the chapter by describing how I fostered integrity throughout the research process.

ICT Repertoires

- RQ1a: What are the ICT repertoires of allied health professionals?
- RQ1b: What factors influence the use of ICT repertoires for allied health professionals working in a hospital?

Role Boundaries

- RQ2a: What role boundaries do allied health professionals encounter when using their ICT repertoires?
- RQ2b: How do ICT repertoires support and/or challenge allied health professionals' role boundaries?

Boundary Incongruence and Boundary Work

- RQ3a: What incongruences emerge across allied health professionals' role boundaries in relation to their ICT repertoires?
- RQ3b: When faced with boundary incongruence, how do allied health professionals manage role boundaries vis-à-vis ICT repertoires?

Table 2.1: Dissertation research questions.

Chapter 3: Methodology

The purpose of this chapter is to provide a rationale for and description of my research approach. In following Charmaz's (2006, p. 15) advice to "let the research problem shape the methods you choose," this dissertation employs a qualitative approach to data gathering and analysis. Qualitative research is appropriate when a "complex, detailed understanding of the issue" is needed and when "we cannot separate what people say from the context in which they say it" (Creswell, 2007, p. 40). It is also ideal for discovering the processes and subtleties under investigation (Kreiner, Hollensbe, & Sheep, 2009). Thus, a qualitative, inductive approach was utilized to discover how allied health professionals used and made sense of their ICT repertoires.

In the following sections, I first describe the characteristics of my research site and detail my process for site access. Next, I explain my participant recruitment techniques, followed by a demographic description of the participants included in this dissertation. I then articulate the methods I used for data collection and analysis, and I conclude with an argument for the credibility and rigor of my research method.

RESEARCH SITE

Data collection occurred at Children's Hospital (pseudonym), a premier, 248-bed health care facility for children and adolescents. This hospital serves more than 40 counties in the state where data was collected and offers over 30 medical services, such as oncology care, emergency and trauma care, intensive care, and surgical services. Children's Hospital

also offers over 10 clinical support services, such as child life services, nutrition, and safety and injury prevention.

The hospital has four floors. The bottom floor holds the hospital cafeteria, and the other three floors are used for patient care services. All patient care floors include a “patient zone,” a “family zone,” and a “work zone,” as the hospital described. Patient zones are areas for treating pediatric patients, such as the Respiratory Acute Care Unit, the Neonatal Intensive Care Unit (NICU), and the Intermediate Care Unit (IMC). Acute Care Units in the hospital are set up like circular pods, with a nursing station in the center and patient rooms surrounding the station. Intermediate and Intensive Care Units are in a rectangular configuration. They have 24 patient rooms lining two long walls (12 rooms on each side), one or two nursing stations (depending on the unit) and a few passing hallways sandwiched in the middle. Family zones are areas designated for patients’ guardians, siblings, and other visitors, and include spaces such as waiting rooms, play areas, and the cafeteria. Finally, areas not accessible to patients and visitors are designated as work zones. These areas include employee offices, conference rooms, and supply closets. Work zones line the hospital hallways outside the patient zones, or they are rooms in the units that are locked and required code access.

Accessing the Site

As a *total institution* (Goffman, 1961), hospitals are tightly monitored and can be difficult sites in which to negotiate access (Tracy, 2013). Fortunately, I gained site entry given my credibility conducting previous research projects at this hospital and my

connections to a site gatekeeper. My initial research at Children's Hospital began in Summer 2015. I was part of a team examining interprofessional communication among physicians, nurses, and pharmacists at the hospital. This project led to a spinoff study where I partnered with the hospital residency program to evaluate residents' perceptions of workplace stress and wellness. Through these research projects, I met several individuals in leadership positions, including the hospital chaplain, Sarah (pseudonym). I kept in contact with Sarah after concluding the projects, as we bonded over a similar faith background and our earnestness to help health care professionals find meaning, and feel valued, in their work.

Both the interprofessional communication study and the resident stress study pointed to ICT repertoires as complex components of hospital professionals' workday, and I was interested in exploring this topic further for my dissertation. Yet conducting a study at this hospital required internal sponsorship: all research projects had to be approved by the Children's Hospital ethics review board, and studies initiated by external researchers had to be supported by a Children's Hospital employee. In Fall 2017, I approached Sarah about studying how different professionals at Children's Hospital use ICTs to communicate at work. Sarah was immediately supportive and interested in a partnership for my dissertation research. At this point, she had been promoted to the Wellbeing and Resilience Director at Children's Hospital, and she too was curious about how communication devices helped and hindered hospital employees' work practices. From informal conversations with Children's Hospital employees, Sarah sensed ICT use was integrally linked to stress and wellbeing in the hospital. She felt this dissertation topic aligned with the Wellbeing

and Resiliency Center's efforts and that the findings could inform future initiatives at the hospital. Thus, with Sarah's support, IRB approval from The University of Texas at Austin, and completion of a two-month ethics review process with Children's Hospital (that I was able to complete through Sarah's sponsorship and guidance), I was ready to enter the site and begin garnering study participants.

PARTICIPANT RECRUITMENT

Following Tracy's (2013) recommendation to "make use of networks" and "work with someone who has credibility in that scene" (p. 101), participants were recruited through within-field recruitment techniques and snowball sampling. At the advent of my dissertation research, I wanted to gain a rich insight into repertoires of use among a broad range of professional backgrounds. I aimed to include nurses, physicians, pharmacists, lab scientists and analysts, and clinical support services. Although these participants came from different fields, worked in a variety of hospital units, fell on different rungs of the hierarchical ladder, and had varying degrees of centrality to patients, what unified all participants was their status as clinical employees who used ICTs to facilitate patient care. I excluded nonclinical employees at the hospital because it was important to have a unifying experience to keep a research study focused (Majchrzak, Faraj, & Azad, 2013). As the goal of my research was to explore how hospital professionals constructed and constituted their ICT repertoires within patient care practices, nonclinical employees did not fit the action criteria, as their work did not involve patient interaction, assessment, or testing.

Recruiting for Fieldwork

To immerse myself in the hospital experience and see how professionals used their ICTs in action, I first obtained participants for fieldwork (I explain my data collection techniques in detail in a subsequent section). In March 2018, Sarah connected me via email with hospital leadership and the managers of each clinical professional group in the hospital, such as the pharmacy manager, the lab manager, the house supervisor (who leads the nurses), and the rehabilitation services manager, to see if they knew of individuals who would be willing to let me shadow them. After Sarah made the email introductions with each manager (such as a quick “Hi _____, meet Millie! We’re working on a research project together about technology use at the hospital, and you should talk to her.”), I replied to the thread by introducing myself, explaining my research objectives, and asking the managers to recommend people within their professional group to contact about study participation.

Although the managers were relatively responsive (taking anywhere from one to four days to reply), I found emailing the recommended participants to be hit-or-miss for recruitment, likely because of how the different professional groups used—or did not use—email in their ICT repertoire. Those in more stationary jobs, such as pharmacists and lab specialists, were quick to respond and schedule observation times. However, other professional groups, like nurses and physicians, were challenging to contact. As I was later told, email was not a daily communication tool for these professional groups, so they checked their inbox infrequently. In total, I obtained 15 participants from six professional

groups (i.e., pharmacists, physicians, technicians, laboratory scientists, rehabilitation service professionals, and social work/case management professionals) through email.

As the email technique did not garner the participation interest I had hoped, Sarah and I attempted a second recruitment strategy: in-person requests. Sarah roamed the floors of the hospital and tracked down individuals in each professional group. She gave them my research pitch verbally and, if they were interested, set up times for me to meet up with them at the hospital. She then provided me with the participants' information—which typically included their name, their role, an email address and/or phone number, their location in the hospital, and the meet-up time—over text message or email. Through Sarah's in-person recruitment, I obtained nine more participants from five professional groups (i.e., respiratory therapists, clinical lab assistants, physicians, pharmacists, and nurses).

To continue to bolster my recruitment roster, I asked participants at the conclusion of our session if they recommended any colleagues for my study and if they would provide me with the recommendees' most accessible contact information, such as a direct phone number or a frequently monitored email address. This snowball technique helped me acquire 11 more study participants from five professional groups (i.e., rehabilitation service professionals, social work/case management, nurses, laboratory specialists, and pharmacists). Furthermore, as I had badge access to the entire hospital, I spent approximately 15 to 30 minutes at the end of my fieldwork day to roam the hospital and recruit new participants. I could tell who belonged to which professional group based on the color of their scrubs (e.g., navy blue for nurses, grey for respiratory therapists, etc.), as

well as a laminated label hanging from employee work badges that designated their professional group. Thus, if I noticed employees who were not preoccupied and met the professional group criteria for my study, I told them about my research and asked if they would be willing to let me observe or interview them on another day. If they were open to participation, I set up a participation date and collected their contact information. Through this technique, I garnered 12 participants from five professional groups (i.e., child life specialists, nurses, laboratory scientists, clinical assistants, and rehabilitation services).

During this recruitment period, I maintained a contact information log (Tracy, 2013) in Microsoft Excel to keep track of my participants. This log included participants' names, roles, method(s) of contact (e.g., phone number, email address), date of participation, type(s) of data to be collected (e.g., a three-hour observation session, a 30-minute interview), and anything noteworthy upon initial interactions with participants. Samples of noteworthy points in my information log included "He seemed shy. OK with notetaking but doesn't want me to record the session" and "She said to follow up via email for participant recommendations—make note in calendar to send message tomorrow"). This information log was kept safe on my password-protected computer. In total, 47 hospital employees were recruited during fieldwork.

Recruiting for Semi-Structured Focus Groups and Interviews

After spending time with professional groups "on the ground" and gaining a more finessed understanding of how they used their ICT repertoires in action, I next recruited for focus groups in Fall 2018 to learn more about how hospital professionals made meaning of their ICT use. Throughout my fieldwork, I informally chatted with managers and

participants about doing focus group sessions in the future. They shared important insight: getting employees of any professional group in a room for a set period of time would be challenging, and if I wanted to get people to attend, I needed to work around their schedules and give them an incentive to come. As the managers shared and participants corroborated, Children's Hospital employees did not like to come into work early, they did not want to stay late, and they had too much to do during their shift to take a break for a focus group. The only mandatory break each hospital employee had was a 30-minute lunch. I also had to keep in mind that people took their lunch break during different shifts, so scheduling set times (such as a 12 to 1 PM focus group) would likely mean little attendance. Furthermore, as the hospital had limited space in which I could hold these sessions, so I had to coordinate around conference room availability.

After brainstorming how to navigate these logistical concerns with Sarah, it was clear we needed to take advantage of their lunch breaks. To encourage participation, Sarah graciously offered to have the Wellbeing and Resiliency Center sponsor focus-group lunches for the professional groups. To coordinate these lunch sessions, I first emailed managers to learn what would be the prime period in which their employees took a lunch break. I also wanted to know the optimal weekday to conduct a focus group, as some groups had weekly mandatory meetings or other obligations during lunchtime. After learning these logistical details, Sarah gave me access to the hospital's online conference room reservation system. With a printed list of each professional group's time and weekday preferences beside me, I spent an afternoon scheduling sessions for nurses,

pharmacists, physicians, respiratory therapists, clinical assistants, rehabilitation services, social work/case management, and child life specialists.

When I had the room reservations in place for each professional group, I contacted the managers via email with their profession's focus group details. In the email, I explained the purpose of the focus group, shared details about what the session would entail, and attached a copy of a focus group recruitment flyer (previously approved by IRB) and the informed consent document to share with their employees. The day before each focus group session, I posted recruitment flyers in the units and hallways where the professional group worked, and I shared the information verbally with anyone I saw who was a member of that professional group. The day of the focus group, I arrived an hour early to roam the halls and remind people about the focus group and free lunch. I held 28 focus group sessions in which 107 people attended. I also conducted 10 one-on-one interviews, as there were moments during the lunch sessions that only one person was present.

In total, 146 people were recruited from nine professional groups (i.e., pharmacy, rehabilitation services, nursing, medical, respiratory therapy, social work/case management, child life, clinical and technical assistance, and laboratory) through all stages of data collection (keeping in mind 18 individuals participated during multiple points of data collection, such as participant observation and a focus group). However, not all participant data collected was used for the purpose of this dissertation. In the next section, I describe the participants included in this dissertation.

DESCRIPTION OF RESEARCH PARTICIPANTS

Following Fetterman's (1998) "big net approach" to qualitative research, I cast a wide net for my participants and included anyone who fit the clinical action criteria for my study. Yet as Creswell (2007) noted, this broad approach to participant inclusion often requires narrowing criteria to "select members of the subculture or unit based on [the researcher's] research questions" (p. 128). As I was interested in *all* clinical professional groups at the hospital during data collection, I soon found that I needed to funnel my participants once I began to analyze my data and sort my ideas into theoretical contributions.

Research has advocated for inclusion of a broader work team when exploring hospital and patient care concerns (Sokas et al., 2013). Indeed, most ICT research in the health care sector has focused on nurses and physicians while shedding little light on other members involved in the patient care process (for exceptions, see Harrison et al., 2018; Stephens et al., 2016). Scholarship in recent years has pointed to a gap in our understanding of clinical support services, particularly in relation to knowledge management and communication processes (Harrison et al., 2018; Scott et al., 2012; Stephens, 2018). In the literature, these support services are often referred to as *allied health professionals*, or professionals whose services complement medical and nursing practices (AMA, 2019), such as dietitians, speech language pathologists, radiographers, and physical therapists. Thus, given this knowledge gap in scholarly work, I funneled my dissertation to focus on the meaning and use of ICT repertoires for allied health professionals.

Three allied health professional groups were examined for this dissertation: child life specialists, rehabilitation services, and social work/case management. Table 3.1 includes a summarization of the demographic information for the three professional groups. All groups fell within the “support services” sector of Children’s Hospital, meaning they were not a direct component of patient care, but were rather consultative services that could be added to the patient care plan if needed. I explain each professional group and their role in the hospital next.

Demographic	Frequency	Percentage
Professional Group		
Child Life Specialists	13	35%
Rehabilitation Services	10	27%
Social Work/Case Management	14	38%
Biological Sex		
Female	36	97%
Male	1	3%
Age		
18-24 years	2	5%
25-34 years	16	43%
35-44 years	7	19%
45-54 years	8	22%
55-64 years	3	8%
65+ years	1	3%
Hospital Tenure		
< 1 year	3	8%
1-2 years	7	19%
2-3 years	2	5%
3-4 years	8	22%
4-5 years	2	5%
5-6 years	1	3%
6-7 years	2	5%
7-8 years	1	3%
8-9 years	3	8%
9-10 years	1	3%
10+ years	7	19%
Race/Ethnicity		
Asian/Pacific Islander	2	5%
Hispanic/Latin(o/a)	7	19%
White	27	73%
Other	1	3%

Table 3.1: Summary of participant demographics

Child Life Specialists

Child life specialists are certified professionals who are trained to provide psychosocial, emotional, and developmental support to pediatric patients and their families. Their role entails helping alleviate stress and anxiety that can arise from pediatric patients' illness, injury, and/or hospitalization, as well as creating a positive learning environment for patients and their families in regard to medical diagnoses and/or procedures. Services provided by child life specialists at this particular hospital included therapeutic playtime, distraction and coping support, medical diagnosis and procedure education, school referrals and support for chronically ill patients, and hospital event coordination.

The majority of child life specialists worked in a particular hospital unit, such as the Emergency Department, Intermediate Care Unit, Imaging, or Acute Care, with one child life specialist assigned per unit typically. A few participants worked "as needed" and were placed in a unit based on the greatest demand for that workday. Child life specialists' work units largely dictated the type of support provided to patients and families. For example, a child life specialist working in the Emergency Department may spend more time playing with a patient as a physician gets the medical history from the patient's guardian, while a surgery child life specialist could spend more time educating the patient on—and easing their anxiety about—an upcoming surgical procedure.

Furthermore, child life as a professional group had variable work hours. As their manager shared, "The schedule is based on when units are the busiest." As each unit had

different peak hours for busyness—such as Surgery Unit child life specialists getting most requests early morning and Emergency Department child life specialists reaching highs in the afternoon—child life specialists molded their hours to match prime need times for their hospital units. So, for example, Meredith in surgery worked from 6 AM to 2 PM, Cindy worked in the Emergency Department from 10 AM to 6 PM, and Lola in Acute Care worked from 8 AM to 4 PM. Each child life specialist had an individual office located off of the hospital unit where they worked.

Participant Demographics for Child Life Specialists

Thirteen individuals (12 child life specialists and one child life manager) participated from this professional group. All 13 participants were female and white. These demographics were representative of the group at large, which was entirely female and lacked racial diversity. Participants ranged in age from their early 20s to mid-50s, and they worked in a variety of hospital units, such as the Emergency Department, Acute Care – Neurology, and the Intermediate Care Unit (IMC). Hospital tenure for this group ranged from less than 1 year to 8.5 years. Table 3.2 summarizes demographic information for child life specialists.

Pseudonym	Role	Unit	Hospital Tenure (in years)	Age (in years)	Gender	Race/Ethnicity
Lisa	Child Life Specialist	Cross-Coverage	<1	18-24	Female	White
Cindy	Child Life Specialist	Emergency Department	3-4	25-34	Female	White
Angela	Child Life Specialist	Acute Care - Respiratory	3-4	25-34	Female	White
Lola	Child Life Specialist	Acute Care - Neurology	1-2	25-34	Female	White
Meredith	Child Life Specialist	General Surgery	3-4	25-34	Female	White
Patrice	Child Life Specialist	Cross-Coverage	1-2	18-24	Female	White
Penelope	Child Life Specialist	Pediatric Intensive Care	3-4	25-34	Female	White
Jiminy	Child Life Specialist	Cardiac Surgery	3-4	25-34	Female	White
Helen	Child Life Specialist	Trauma Surgery	1-2	25-34	Female	White
Emily	Child Life Specialist	Intermediate Care	6-7	35-44	Female	White
Rachel	Child Life Specialist	Imaging	1-2	25-34	Female	White
Quinn	Child Life Specialist	Rehabilitation	3-4	45-54	Female	White
Danielle	Child Life Specialist Manager	--	8-9	45-54	Female	White

Table 3.2: Demographic information for child life specialists

Rehabilitation Services

Individuals working in rehabilitation services provide therapy for patients experiencing functional issues due to illness or injury. This professional group provided a wide variety of services, such as movement therapy, swallowing evaluations, feeding therapy, gait training, functional strength training, wound care, splinting, and speech therapy. The two groups within rehabilitation services studied for this dissertation were physical therapists and occupational therapists.

Physical therapists are specialized in helping patients restore their mobility. As the American Physical Therapy Association defines, physical therapists are “movement experts who optimize quality of life through prescribed exercise, hands-on care, and patient education” (APTA, 2019, n.p.). At this hospital, physical therapists coordinated with physicians, nurses, and other specialties in rehabilitation services to develop and execute a mobility treatment plan for pediatric patients designed to help manage and/or reduce pain, restore motor function, and prevent mobility loss and disability.

According to the American Occupational Therapy Association, occupational therapists help individuals “participate in the things they want and need to do through the therapeutic use of everyday activities (occupations)... Occupational therapy helps people function in all of their environments and addresses the physical, psychological, and cognitive aspects of their well-being through engagement in occupation” (AOTA, 2019, n.p.). In other words, while physical therapists focus on movement of the body, occupational therapists focus on the rehabilitation of daily living activities, such as taking

a bath, getting dressed, eating, and writing. At Children’s Hospital, occupational therapists also coordinated with physicians, nurses, and their rehabilitation teammates to develop and execute a treatment plan during and after the hospital stay, yet their focus was on treating activities of daily living within the patient’s unique environment.

The rehabilitation service team was centralized in one unit at the study site—the Rehabilitation Services Unit. This unit had dedicated hospital beds, two gym facilities for treating patients, and an office space for the rehabilitation staff. Yet this professional group did not work exclusively on their unit. If the patient was admitted for rehabilitation purposes, such as a patient who fell and broke her leg, they treated the patient on the Rehabilitation Services Unit. These services were designated “rehabilitation” by the group. The rest of their mobility patients were spread across other units, as care teams requested rehabilitation therapy for patients with other primary admission purposes, such as Acute Care – Neurology or Intermediate Care patients. Thus, where a rehabilitation specialist worked and administered therapy depended on the chief complaint of the patient admitted, as well as if the patient could physically make it to the rehabilitation gym. Mobility services designated within the hospital, but not in the rehabilitation unit, were called “inpatient.” As a service, rehabilitation operated from 8 AM to 4:30 PM, and all employees worked within these hours.

Participant Demographics for Rehabilitation Services

A total of 10 individuals from rehabilitation services participated. Two participants were occupational therapists, and five participants were physical therapists. Two

participants, Sienna and Karen, supervised the inpatient physical therapy teams. As they were the most senior physical therapists on the team, they advised their rehabilitation colleagues and communicated inpatient needs to the rehabilitation services manager, Antoinette (who was over both inpatient and outpatient hospital services). Sienna advised physical therapists who worked with patients in the rehabilitation unit, while Karen was responsible for those working across the inpatient units. All participants identified as female, which was representative of the almost exclusively female group. Six participants identified their race/ethnicity as white, two as Asian, two as Hispanic/Latina, and one as other. Participants ranged in age from their mid-20s to late-50s, and they worked in two service areas: rehabilitation (i.e., exclusively worked in the rehabilitation unit) and inpatient (i.e., worked with patients across hospital units). Tenure at this hospital ranged from 1.5 years to over 10 years. Table 3.3 summarizes demographic information for rehabilitation services.

Pseudonym	Role	Service	Hospital Tenure (in years)	Age (in years)	Gender	Race/Ethnicity
Bonnie	Occupational Therapist	Rehabilitation	2-3	25-34	Female	White
McKenna	Physical Therapist	Inpatient	5-6	25-34	Female	White
Vanessa	Physical Therapist	Inpatient	3-4	25-34	Female	White
Tammy	Occupational Therapist	Inpatient	3-4	25-34	Female	Hispanic/Latina
Zoe	Physical Therapist	Inpatient	>10	35-44	Female	Other
Clarabelle	Physical Therapist	Rehabilitation	8-9	35-44	Female	White
Ginger	Physical Therapist	Rehabilitation	1-2	25-34	Female	Asian
Sienna	Physical Therapist – Rehabilitation Supervisor	Rehabilitation	>10	55-64	Female	Hispanic/Latina
Karen	Physical Therapist – Inpatient Supervisor	Inpatient	9-10	45-54	Female	Asian
Antoinette	Rehabilitation Services Manager	--	>10	45-54	Female	White

Table 3.3: Demographic information for rehabilitation services

Social Work/Case Management

Although social work and case management are two unique professional roles, Children’s Hospital grouped them into a common work unit: they attended the same meetings, worked in shared office spaces, and operated under the same manager. Accordingly, social work and case management are unified under one group for this study—social work and case management.

According to the National Association of Social Workers, social work involves the application of one or more of the following: “helping people obtain tangible services; counseling and psychotherapy with individuals, families, and groups; helping communities or groups provide or improve social and health services; and participating in legislative processes” (NASW, 2019b, n.p.). Clinical social work, in particular, involves “the assessment, diagnosis, treatment, and prevention of mental illness, emotional, and other behavioral disturbances” (NASW, 2019a, n.p.). At the study site, social workers were licensed clinical professionals who were responsible for providing support to children and their families during hospitalization, such as mental health counseling, transportation logistics planning, insurance and public resource coordinating, and other forms of support problem solving.

Case managers are registered nurses who, instead of performing bedside duties, focus on the admission and discharge needs of patients. At this hospital, case management was involved in complex medical cases, such as children in need of specialized care or medical equipment during and post hospital stay. They ensured patients were admitted

safely to the appropriate level of care, assessed the patient's cost coverage abilities, advocated for plans of care that aligned with the financial and medical needs of patients, and coordinated with insurance, home health, and medical supply companies on behalf of patients.

Social workers and case managers were spread across the hospital and were assigned to specific units and teams, such as the Emergency Department, Pediatric Intensive Care Unit, Palliative Care, or Acute Care. Each social worker and case manager in the specific unit or specialty group shared an office together next to the hospital unit, such as officemates Polly (social worker) and Joy (case manager), who both worked on the Post-Surgical and Respiratory Acute Care units. Like rehabilitation services, social work/case management all had the same work hours: from 8 AM to 4:30 PM.

Participant Demographics for Social Work/Case Management

Fourteen individuals (eight social workers, five case managers, and one team manager) were included from this professional group. All participants were female except Nicholas, who was the only male on the social work/case management team. Five participants identified as Hispanic/Latin(o/a), and the remaining nine participants identified as white. Participants ranged in age from their late 20s to mid-60s, and they worked in a variety of hospital units and cross-coverage teams, such as the Neonatal Intensive Care Unit (NICU), Acute Care – Respiratory, and the Palliative Care Team. Hospital tenure for this group ranged from less than 1 year to more than 10 years. Table 3.4 summarizes demographic information for social work/case management.

Pseudonym	Role	Unit	Hospital Tenure (in years)	Age (in years)	Gender	Race/Ethnicity
Gwen	Social Worker	Emergency Department	4-5	35-44	Female	White
Flora	Social Worker	Emergency Department	2-3	25-34	Female	Hispanic/Latina
Mary	Social Worker	Neonatal Intensive Care & Cross-Coverage	6-7	35-44	Female	Hispanic/Latina
Polly	Social Worker	Acute Care – Respiratory	1-2	25-34	Female	White
Joy	Case Manager	Acute Care – Respiratory	<1	45-54	Female	White
Julia	Social Worker	Palliative Care	4-5	35-44	Female	White
Willadean	Case Manager	Emergency Department	7-8	55-64	Female	White
Sandra	Social Worker	Cross-Coverage	<1	25-34	Female	Hispanic/Latina
Marty	Case Manager	Oncology	>10	55-64	Female	White
Claudia	Social Worker	Neurology & Oncology	>10	45-54	Female	Hispanic/Latina
Roxanne	Case Manager	Neurology & Psychiatry	8-9	45-54	Female	White
Wanda	Case Manager	Neonatal Intensive Care	>10	65 or over	Female	White
Nicholas	Social Worker	Rehabilitation	1-2	35-44	Male	Hispanic/Latino
Valerie	Social Work/Case Management Manager	--	>10	45-54	Female	White

Table 3.4: Demographic information for social work/case management

DATA COLLECTION TECHNIQUES

Data collection began with a broad interest in how ICTs impacted perceptions of stress and wellbeing among hospital professionals. I became interested in this topic area from previous research projects, and I began to collect pilot data on technology-related stress, or *technostress* (Brod, 1984; Tarafdar et al., 2007; Ragu-Nathan et al., 2008), experienced by hospital professionals for my dissertation. I observed and interviewed seven professionals in the hospital: the laboratory manager, a pharmacist working in the Central Pharmacy, an Emergency Department nurse, a resident physician on rotation in Acute Care, an Emergency Department physician, and the technologist supervisor in the Central Pharmacy. After analyzing this preliminary data, I found that how professionals used their *repertoire* of ICTs and interpreted use in similar and different ways was far richer and more theoretically and practically interesting than the technostress concept. Thus, I pivoted data collection to focus on how hospital professionals perceived and used their ICT repertoires.

My focus on ICT repertoires served as the guiding focus for my data collection moving forward. Many questions were in my head at this point in the research process, such as: what devices were included in each professional group's repertoire? Were they similar or different across groups? Did professionals express analogous or oppositional sentiments about their communication tools? How did certain tools within their repertoire help or hinder patient care processes? Thus, my interest in ICT repertoires provided a "loose structure" (Charmaz, 2006, p. 16) for learning more about when employees coming

from diverse professional backgrounds and using an array of ICTs to coordinate patient care.

Strong qualitative research is characterized by rigorous data collection techniques (Creswell, 2007). In order to understand how hospital professionals perceived and used ICT repertoires, I triangulated three types of data collection in this study: observational data, interviews, and archival data. This resulted in over 104 hours of data collection and 1,471 typed, single-spaced pages—approximately one third of which (31 hours, 556 pages) were used to exclusively study allied health professionals in this dissertation. Table 3.5 compares the entire data set (labeled “total”) to the data of the three allied health professional groups—child life specialists, rehabilitation services, and social work/case management—that were selected for further analysis (labeled “selected”). Moving forward, I refer only to the extracted allied-health dataset when discussing data collection, rather than the entire dataset. Although I present these techniques in a linear fashion, my research process occurred iteratively as I moved back and forth among the data collection types and data analysis.

		Number of Participants	Time Spent Collecting Data	Number of Typed Pages	Word Count of Typed Pages	Number of Artifacts
Observations	Total	29	49h 47min	193	77,142	--
	Selected	6	10h	37	14,665	--
Ethnographic Interviews	Total	27	9h 39min	417	166,156	--
	Selected	13	8h 41min	189	74,974	--
Informant Interviews	Total	7	6h 5min	147	58,297	--
	Selected	3	2h 15min	57	22,459	--
1:1 Semi-Structured Interviews	Total	16	18h 43min	210	83,604	--
	Selected	5	3h 49min	88	34,824	--
Semi-Structured Focus Groups	Total	107	19h 49min	504	200,458	--
	Selected	34	6h 9min	185	73,492	--
Collected Artifacts	Total	--	--	--	--	58
	Selected	--	--	--	--	20
Data Collection Sum	Total	186	104h3min	1,471	585,657	58
	Selected	61 (33%)	30h49min (30%)	556 (38%)	220,414 (38%)	20 (34%)

Table 3.5: Comparison of total dataset to selected dataset of allied health professionals

Observation Data

Participant observation is a useful practice when a scholar wishes to “create increasingly precise, vivid, detailed, and theoretically relevant accounts” of a situation or an experience over time (Lindlof & Taylor, 2011, p. 136). By observing in situ, the researcher can study concepts of interest as they occur. Furthermore, conducting observations over time can build a rich story that situates the process of a particular concept, like technology use in a hospital. Thus, I conducted field observations to glean an in-situ understanding of how hospital professionals use ICTs. I took an observer-as-participant approach to data collection (Gold, 1958), or what Tracy (2013) called a “focused participant observer” (p. 111). In this role, I openly acknowledged my research

position to site members and took notes on the scene, but I did not actively participate in organizational life. Observer-as-participant meant I “interact[ed] with [site members] casually, occasionally, and indirectly” (Lindlof & Taylor, 2011, p. 147), but my focus was on watching so that I could better understand participants’ social world.

To capture my observations, I took in-depth field notes where I recorded “raw records” (Tracy, 2013, p. 114) of hospital professionals’ actions while they worked. As most of this site’s professionals move around frequently, a laptop was not conducive to notetaking. Instead, I brought a small notebook and took notes by hand. The majority of the notebook pages were dedicated to describing actions as they occurred. I reserved the far left margin of my notebook pages to record interpretations of those actions (Emerson, Fretz, & Shaw, 2011). I used shorthand abbreviations and symbols to help me write as much as I could about what the participants said and did, as well to keep my notes indecipherable to onlookers and protect the confidentiality of the data (Emerson et al., 2011).

For each ICT action, I marked what ICT was used, the time the participant began use, recorded their actions while using, and documented the time they completed use to help capture the extent of ICT use in my data. In other instances when ICTs were not involved, I took notes on what I saw occurring and marked my notes with time stamps at least every five minutes. When I concluded observations for the day and left the field, I verbally documented any reflections on my smart phone or audio recorder. Per Tracy’s (2013) recommendation, I typed up my observational notes within 36 hours of leaving the site so that I was able to recall raw records and experiences clearly. In all, I observed six

individuals for a total of 10 hours. These sessions ranged from 30 minutes to 2 hours and resulted in 37 single-spaced pages of data or 14,665 words.

Interview Data

Observations were helpful in grounding me in participants' workflow and how they took action through their ICTs, but this data collection technique did not elucidate how professionals made sense of their ICT use. Furthermore, because the observer-as-participant stance can lead researchers to overemphasize or inaccurately assess their observations (Gold, 1958), it is recommended for researchers to complement this observational technique with participant interviews to better understand participants' knowledge, experience, and worldviews (Lindlof & Taylor, 2011). Therefore, I also utilized ethnographic interviews, informant interviews, and semi-structured interviews to better answer my research question. I describe these specific interview techniques next.

Ethnographic Interviews

Ethnographic interviews—also called “situational” (Schatzman & Strauss, 1973) or “go-along” (Kusenbach, 2003) interviews—are spontaneous and informal and typically take place on the research site (Lindlof & Taylor, 2011). These “off-the-cuff” interviews occur in the midst of the action when questions are fresh on the researcher's mind and participants are in a position where they can answer. These impromptu, informal interviews allow for more spontaneous responses from participants (Kvale, 1996). I took advantage of observational lulls by asking participants follow-up questions that came to mind during the observation session. I carried a notebook with me during these periods,

and I had a list of ideas and talking points (Tracy, 2013) written on the first page that were inspired by my study's formal interview guide (see Appendix). If the participant had a break in work tasks, I took the opportunity to ask a few questions of interest related to my study ideas. In total, I held 10 ethnographic interview sessions with 13 participants (with one interview including perspectives from three people and another including perspectives from two people). Cumulatively, these interviews took eight hours and 41 minutes, ranging from six minutes to an hour and 40 minutes. This data resulted in 189 single-spaced pages, or 74,974 words.

Informant Interviews

Informants are participants who have extensive knowledge about the research scene (Lindlof & Taylor, 2011). These individuals are typically labeled site veterans and can provide the researcher with a deeper understanding about the site's culture and history. For my dissertation, I capitalized on the knowledge of managers and hospital leadership who had a bird's eye view of employees' work and communication patterns, particularly when ICT repertoires were involved. In these interviews, I had the informant clarify the operations of their work group, describe ICTs used in their unit or team, consider how ICT repertoires helped and/or hindered hospital communication, and elaborate on how their unit connected with other departments and hospital systems when facilitating patient care. Three informant interviews were included for this dissertation: the rehabilitation services manager, the social work/case management manager, and the hospital's Chief Operations Officer. The child life manager, Danielle, was not available for a one-on-one informant interview and instead participated in a focus group, so I do not include her here. The

interviews ranged from 26 minutes to 56 minutes, for a time total of two hours and 15 minutes. The data gathered resulted in 57 single-spaced pages, or 22,459 words.

Semi-Structured Interviews

Once I had a better grasp of my data through observations, ethnographic interviews, and informant interviews, I conducted semi-structured interviews to gain a more focused and precise understanding of participants' ICT repertoire experiences, particularly in relation to how they made meaning of their ICT repertoires. Here, I scheduled interview times with participants and asked questions from a semi-structured question guide (Croucher & Cronn-Mills, 2015). I used a semi-structured, as opposed to a structured, format because I wanted participants to be able to expand on topics of interest. Qualitative research requires adaptability to the needs of the scene and the findings that emerge. Thus, if a participant stated something that was of theoretical interest but did not fit neatly into my prescribed interview questions (such as participants in rehabilitation services describing the relationship between billable hours and ICT use), I wanted flexibility to explore that idea further. The semi-structured interview guide used for this dissertation is located in the Appendix.

I utilized two formats for conducting semi-structured interviews: focus group sessions and one-on-one interviews. Focus groups are defined as “small groups of people with particular characteristics convened for a focused discussion of a particular topic” (Hollander, 2004, p. 606). An advantage of focus groups is that they allow participants to draw upon shared experiences and build off of each other's responses, a dynamic that cannot be produced in one-on-one interviews (Finch & Lewis, 2003; Lindlof & Taylor,

2011). As Morgan (1988) described, “The explicit use of the group interaction [elicits] data and insights that would be less accessible without the interaction found in a group” (p. 12).

As outlined in the participant recruitment section, professionals at this hospital had strict schedules and little spare time during the workday other than their lunch break. To circumvent this limitation, I scheduled lunchtime focus group sessions on location at the site where participants could stop by during their break, participate in the study, and get a free lunch. Sessions were split according to professional groups, such as child life specialists attending one lunch session and pharmacists attending another). Employees were informed about the focus groups via email, flyers, and face-to-face announcements (see the participant recruitment section for a detailed breakdown of recruitment techniques). Sessions were scheduled for two to three hours depending on the professional group’s typical lunch break and conference room availability at the hospital, and participants could join at any point during the session.

Given that individuals could join the sessions sporadically and spontaneously, I had to adjust my interview plans accordingly. When starting with a “blank slate” of participants (i.e., they were the first to arrive), I opened the session by explaining the purpose of my study and passing around informed consent documents. I gave participants a few minutes to read the form, reminded them that the conversation would be recorded with their permission, and asked for their verbal agreement to participate in the study. I used my interview protocol (Appendix) to guide these opening interactions, but at times I strayed

from the guide to ask probing questions and allow the content to emerge from participants' unique experiences with their ICT repertoires (Legard, Keegan, & Ward, 2003).

When new individuals arrived, I asked them to step out into the hallway and read the informed consent document prior to participation. Once they returned to the conference room, I reminded them that the conversation would be recorded and asked for their verbal consent to participate in the study. If they agreed to participate, I gave the individual a brief summary of the topic currently being discussed so that they would be up-to-date and feel comfortable offering their perspective. If new participants missed out on a topic from an earlier point in the conversation that I deemed important for additional perspective, I would put a pin in the current conversation and ask new participants for their thoughts on the previous topic. Once their perspective was incorporated, I went back to the "pinned" topic. This format resulted in 28 focus groups, nine of which were used for this dissertation. Allied-health professional focus groups ran from 16 minutes to 71 minutes in length, with anywhere from one to four focus groups occurring per lunch session. Group size ranged from two to eight participants per group, and a total of 34 allied health professionals participated. This resulted in 185 single-spaced pages of transcribed data, or 73,492 words.

In addition to focus groups, I also conducted scheduled one-on-one interviews with participants who either (1) participated during observation data collection and agreed to a follow-up interview or (2) were recommended by other participants and could not attend a focus-group session. Five allied health professionals participated this way, and interviews

ranged from 34 minutes to 67 minutes for a total of three hours and 49 minutes. This resulted in 88 pages of single-spaced, transcribed data, or 734,824 words.

Artifact Data

In addition to observing and interviewing hospital professionals, I also collected and analyzed pieces of the hospital's "material culture" (Lindlof & Taylor, 2011, p. 217), or artifacts produced by the organization and its actors. As Lindlof and Taylor (2011) argued, a cultural artifact is "an element—a resource, a referent, a nonverbal sign—in the process of communication" (p. 218) that offer rich insight into the context, history, and logic of the cultures they represent (see Lincoln & Guba, 1985, for a similar argument). Furthermore, Tracy (2013) argued that artifacts could serve as "prompts to action, as informational resources... and so on" (p. 231) and "are a site of claims to power, legitimacy, and reality" (p. 232).

The primary form of archival data I collected were photographs. With participants' permission, I took pictures of their ICTs, their workspaces, and any paper documents they wrote or carried that related to ICTs in any way. I also asked participants to send me any documents associated with their ICT repertoires, such as emails or professional protocol about ICT use. I initially planned to search through the hospital's online database to gain better insight into organizational values, norms, and policies surrounding ICTs, but I was not granted access as the documents on the intranet were considered proprietary information. However, after spending approximately 104 hours in this hospital, I learned many things about their organizational values, norms, and policies. In total, I took 52

photographs and collected six organizational documents (namely in the form of forwarded organizational emails). Out of these artifacts, 16 photos and four documents were used for this dissertation. Table 3.6 summarizes the data collected from allied health professionals.

In the next section, I describe my process for analyzing the data.

	Number of Participants	Time Spent Collecting Data	Number of Typed Pages	Word Count of Typed Pages	Number of Artifacts
Observations	6	10h	37	14,665	--
Ethnographic Interviews	13	8h 41min	189	74,974	--
Informant Interviews	3	2h 15min	57	22,459	--
Semi-Structured Focus Groups	34	6h 9min	185	73,492	--
1:1 Semi-Structured Interviews	5	3h 49min	88	34,824	--
Collected Artifacts	--	--	--	--	16 photos, 4 documents
Data Collection Sum	61	30h49min	556	220,414	20

Table 3.6: Data collected from allied health professionals

DATA ANALYSIS

I analyzed data using a constructivist approach to grounded theory (Charmaz, 2006, 2014), in which theory is formed through the researcher's subjective and iterative involvement with the field of study, the research site, and data gathering and analysis. Contrary to positivistic Glaserian (Glaser & Strauss, 1967; Glaser, 1998) or Straussian (Strauss & Corbin, 1998) branches of grounded theory, Charmaz's constructivist approach

emphasizes “flexible guidelines, not methodological rules, recipes, or requirements” (Charmaz, 2006, p. 9). A constructivist approach considers “particular positions, perspectives, and experiences” of the research participants and the researcher, and it assumes “emergent, multiple realities; indeterminacy; facts and values as inextricably linked; truth as provisional; and social life as processual” (Charmaz, 2014, p. 231). This approach to grounded theory is recommended for questions concerning how people construct meaning and action in specific situations (Charmaz, 2014), which was precisely the focus of my research question. Thus, given the exploratory nature of my study, the subjectivity of my position as a researcher, and the unpredictability of my research site, a more fluid constructivist approach to grounded theory was ideal.

Before I describe the steps I took to code to data, it is important to note that this process did not occur as linearly as it appears on paper. Staying true to the spirit of grounded theory, I moved back and forth between data collection and analysis as I found inspiration the literature, the field, and the data. More specifically, I engaged in the constant comparative method (Charmaz, 2006, 2014; Glaser & Strauss, 1967; Strauss & Corbin, 1990) throughout the coding process, in which I compared data related to each code during each coding step. I compared and contrasted participants’ comments and actions *within* an observation, interview, and focus group session, as well as compared comments and actions *across* the data set. For example, I compared instances in which child life specialist Jiminy “received SecureTexts” during one observation period, and I also examined how her sentiments and responses to receiving SecureTexts was similar to or different from other points of data collection she participated in, such as the child life

specialist focus group or the semi-structured interview I conducted with her. I also compared Jiminy's words and actions related to "receiving SecureTexts" to those of other child life specialists, as well as to those of individuals in other professional groups, such as social worker Claudia or occupational therapist Bonnie. This technique helped me to build categories and discern similarities and differences among the data during each phase of analysis.

Furthermore, it is also important to note the role of memoing (Charmaz, 2014; Tracy, 2013) in my analysis process. Memo writing is a way for the researcher to reflect and document their thought processes (Miles, Huberman, & Saldaña, 2014). It gets the researcher to "stop, focus, take codes and data apart, compare them, and define links between them" (Charmaz, 2014, p. 164). If I noticed a particularly interesting connection or distinction in the data at any point during data collection and analysis, I made an analytic memo—be it in my notebook while out in the field, on the back of a napkin when eating lunch and inspiration struck, or on my white board at home when brainstorming about the data. Memoing helped ground me in the core relationships that characterized the context and substantive foci of my study (Emerson et al., 2011) and ultimately pointed me to theorizing. Indeed, it was through memoing on giant sticky notes posted on my walls at home that I developed the structures of Chapters 5 and 6, the main findings of this dissertation. Next, I describe how I coded the selected dataset through data immersion, open coding, focused coding, axial coding, and theoretical coding.

Data Immersion

After typing up my field notes and transcribing my interviews, I uploaded all of my data into NVivo—a software that facilitates organizing, coding, interrogating, and visualizing textual and digital data—for data analysis. Once all documents were uploaded in the software, I began analysis by engaging in a “data immersion phase” (Tracy, 2013, p. 188) in which I read and reread all field notes and transcripts to get an overall sense of the data. I immersed myself in the data for three weeks and combed through each field note, document, and transcript. Although I used all the data I collected to better understand the context of my findings, I focused my analysis only on allied health professionals.

Open Coding

Once I had a general understanding of participants’ statements and actions through data immersion, I moved to open coding the data. Open coding (Corbin & Strauss, 1990), also called “initial coding” (Charmaz, 2014) or “primary-cycle coding” (Tracy, 2013), entails focusing on “‘what’ is present in the data” (Tracy, 2013, p. 189). These codes are often descriptive in nature and point to straightforward activities, statements, and processes in the dataset. As Tracy (2013, p. 189) noted, the goal of initial coding is to find the “who, what, and where” of the data rather than interpret the “why” or the “how.” Furthermore, during initial coding, the researcher should be open-minded to all possible directions the data can go theoretically (Charmaz, 2006, 2014).

In this coding cycle, I stuck closely to the data, remained open-minded to what it suggested, and engaged in line-by-line coding. As the name suggests, line-by-line coding

means the researcher codes each line of written or typed data (Glaser, 1978). This approach helps the researcher stay in tune with the nuances of the data without getting too absorbed in the participants' worldview (Charmaz, 2014). I kept my codes "short, simple, active and analytic" (Charmaz, 2006, p. 50), with examples of line-by-line codes drawn from my dataset including "getting spotty cell service in the hallways," "missing information on the EHR," "receiving a group SecureText message on personal phone," and "preferring not to use personal phone at work."

Focused Coding

After coding each line of my transcripts, I next moved to focused coding (Charmaz, 2014; Saldaña, 2009), also called "secondary-cycle coding" or "second-level coding" (Tracy, 2013). This next coding step entails a more analytical approach to data analysis. Here, the researcher hones in on the most promising open codes with the intention to synthesize and categorize the data. As Charmaz (2014) explained, "This type of coding condenses and sharpens what you have already done because it highlights what you find to be important in your emerging analysis" (p. 138). Tracy (2013) further elaborated, "Rather than simply mirroring the data, second-level codes serve to explain, theorize, and synthesize them. Second-level coding includes interpretation and identifying of patterns, rules, or cause-effect progressions" (p. 194). Questions I kept in mind during this phase of data analysis included "What patterns do I see in my initial codes?," "What ideas emerge when I compare my codes?," and "Which codes best represent my data?"

My first step during focused coding was to sift through my open codes and funnel my analysis to codes that only pertained or related to ICTs and their use. Once I had my codes narrowed to these criteria, I then looked for interesting codes in the data where I needed to gather more information, such as the code “time using ICTs is not ‘billable.’” One occupational therapist, Bonnie, described how documenting in the electronic health record (EHR) or coordinating care through phone calls or text messages was not time for which they could bill the patient, which was a point of frustration for the team. This comment was mentioned only once during a brief interaction, and I wanted to make sure to follow up on this idea in future data collection opportunities. Thus, by being focused and specific, I was able to discover new ideas in my open codes and consider what types of additional data needed to be collected early on in data analysis (Charmaz, 2014).

I also compared similar incidents in the dataset (Charmaz, 2014), which helped me finesse my code descriptions and find interesting discrepancies in the data. For example, when looking through instances where I coded “receiving a group SecureText message on personal phone,” I noticed that child life specialists expressed positive sentiments, such as appreciation and inclusion, when receiving group text messages from interdisciplinary teammates in their work unit. On the other hand, child life specialists shared negative sentiments—such as frustration and overload—when the group text messages came from their child life colleagues.

Axial Coding

Once clearer categorizations materialized, I coded the data axially to understand “the dense texture of relationships around the ‘axis’ of a category” (Strauss , 1987, p. 64). This coding phase answers the “when, where why who, how, and with what consequences” type of questions (Strauss & Corbin, 1998, p. 125), with the researcher aiming to link categorical relationships “on a conceptual rather than a descriptive level” (Charmaz, 2014, p. 147). During axial coding, I went back to give texture, coherence, and depth to the categories developed during focused coding and I aimed to piece my codes back together into a unified explanation (Charmaz, 2006, 2014; Strauss & Corbin, 1998).

An overarching research question (*How do hospital professionals make meaning of, and take action through, ICT repertoires?*) served as the guiding question during axial coding, as I created coding “trees” and flowcharts that helped me explain groupings and conditions within my dataset related to this RQ. This process was similar to Tracy’s (2013) description of creating “hierarchical codes,” which involves “systematically grouping together various codes under a hierarchical ‘umbrella’ category that makes conceptual sense” (p. 195). By keeping my RQ at the center of axial coding, I discerned that participants in all three professional groups had similar ICTs in their repertoires, yet they used the devices differently and had disparate expectations around use. When I traced this hunch in my codes, I found each of the professional groups faced different organizational constraints that impacted ICT meaning making and use. Specifically, participants had varied access to ICTs (e.g., everyone having their own HospiPhone in a professional group versus a professional group facing a shortage of HospiPhones), and they faced different

expectations around how to use their tools (e.g., receiving firm instructions from management on which ICTs to use and how to use them versus getting no explicit orders on devices and their use). These differences perpetuated homogeneous and heterogeneous ICT use structures within and across professional groups, and these repertoire similarities and differences impacted how hospital professionals coordinated patient care.

Theoretical Coding

In the final coding stage, I aimed to connect and integrate the hierarchical categories developed during axial coding in order to build a coherent theoretical explanation for my data (Creswell, 2007). Grounded theory experts describe axial coding as a time to unite codes into a whole component, yet after coding axially I felt as if I had several individual circles that I needed to bring together into a theoretical sphere. I combed through analytic memos, searched through initial and focused codes, read through related academic literature, and conducted hours of diagramming to build a coherent theoretical storyline out of my data. During this phase, the concept of *boundaries* took shape as a useful theoretical framework for explaining the dataset, in which I found participants faced organizational, professional, and personal boundaries when making meaning of and taking action through their ICT repertoires.

After fleshing out the organizational, professional, and personal boundaries in the dataset, I next pursued theoretical sampling (Glaser & Strauss, 1967; Tracy, 2013), or actively obtaining data that illuminated the theoretical categories I developed and filled any remaining holes. This meant I spent an additional 13 hours in the field in Spring 2019

gathering data that related to making meaning and taking action through ICT repertoires when faced with organizational, professional, and personal boundaries. I continued to collect, code, and analyze my data until I reached saturation, a point at which no new insights emerged (Glaser & Strauss, 1967) and all substantial relationships within and across categories were “defined, checked, and explained” (Charmaz, 2014, p. 213). Table 3.7 synthesizes my data analysis process.

Coding Steps	Analysis Outcome	Examples
Data Immersion	Focused in on data that pertained to allied health professionals	--
Open Coding	Formation of 2,799 codes	“getting spotty cell service in the hallways,” “missing information in the EHR,” “documenting in the afternoon”
Focused Coding	Narrowed open codes to those that related to ICT repertoires; compared similar incidents to finesse descriptions and find any discrepancies	Eliminated codes such as “having a difficult patient conversation” and “talking about 3 y/o daughter with desk clerk” that did not relate to ICT repertoires “Screening calls” in the data set could mean screening to answer (“I’ll pick up if it’s X”) or screening to avoid (I’m <i>not</i> going to pick up if it’s X”).
Axial Coding	Linked categorical relationships and created groups of hierarchically-arranged codes	Conditions of ICT repertoire use: 1. Access 2. Expectations 3. Workflow 4. Preferences
Theoretical Coding	Connected and integrated hierarchical categories to build a coherent theoretical explanation	Participants face <i>organizational, professional, and personal boundaries</i> when using their ICT repertoires, and they employ a range of boundary management techniques given the conditions of access, expectations, workflow, and preferences.

Table 3.7: Coding processes for data analysis

MAINTAINING RESEARCH INTEGRITY

Throughout data collection and analysis, I fostered a spirit of research integrity by following Tracy's (2010) eight "big-tent criteria" of qualitative research. The quantitative standards of objectivity, reliability, and generalizability poorly fit the goals of qualitative research, particularly for those taking an interpretive, constructivist, or critical approach (Guba & Lincoln, 2005; Tracy, 2013). In response to this ill fit, Tracy (2010, 2013) provided scholars with "eight *universal* hallmarks" (p. 837, emphasis included in the original) of qualitative research. I selected these guidelines because they are suitable for all paradigmatic lenses, they respect the complexity of qualitative research, and they allow flexibility in research practices while simultaneously keeping the researcher grounded in core values.

I met Tracy's first criteria of a *worthy topic* by selecting a dissertation topic that is relevant and significant both theoretically and practically. I upheld the second criteria, *rich rigor*, by seeking "requisite variety" (Weick, 2007, p. 16), garnering thick descriptions throughout data collection, spending ample time in the field, and taking months to analyze my data until saturation was reached. *Sincerity* stemmed from my genuine desire to help health care professionals and the research site, as well as my engagement in self-reflexivity throughout the data collection and analysis process. I was mindful of my positionality and how it affected what I saw and did not see, as well as my interpretations of those experiences. *Credibility* was maintained through the triangulation and constant comparison of my data, as well as through obtaining "multivocality" (Tracy, 2013, p. 237),

or the inclusion of many voices and perspectives. I met the *ethical* criteria by abiding by IRB standards, being cognizant of the situational and relational needs of those I encountered in the field, and upholding my own standard of ethics—such as truthfulness, open-mindedness, dignity, compassion, and respect. Finally, I aimed for *meaningful coherence, resonance, and a significant contribution* by producing a theoretical framework that is useful to scholarship and practical recommendations that can help inform, improve, and enrich the ICT practices of professionals working in environments with complex ICT repertoires.

CHAPTER SUMMARY

In this chapter, I described the methodological choices made during this dissertation process. I first explained the characteristics of my research site, Children’s Hospital, and outlined the steps taken to access the site. I then described my participant recruitment techniques, in which I cast a wide net and had 146 people across nine professional groups participate. To better scope my dissertation, I narrowed my participant pool to 37 people from three allied health professional groups (child life specialists, rehabilitation services, and social work/case management), and I described the demographics of each group included in the dissertation. I then explained my three data collection techniques: observing participants in the field, conducting ethnographic, informant, and semi-structured interviews, and collecting artifacts. This resulted in over 104 hours of data collection and 1,471 typed, single-spaced pages—approximately one third of which (31 hours, 556 pages) were used to study allied health professionals exclusively in this

dissertation. I concluded the chapter by describing my data analysis process (data immersion, open coding, focused coding, axial coding, and theoretical coding) and sharing the criteria I used for maintaining strong rigor and quality throughout data collection and analysis.

Chapters 4 through 6 present the findings of this dissertation. Chapter 4: ICT Repertoires of Allied Health Professionals answers RQ1a and RQ1b and sets the stage for understand the remaining findings. In this chapter, I describe the ICT repertoires of child life specialists, rehabilitation services, and social work/case management, and I outline the organizational structures that impacted ICT use for each professional group. Chapter 5: Encountering Role Boundaries through ICT Repertoires answers RQ2a and RQ2b by exploring the role boundaries allied health professionals faced and describing how roles were supported and challenged by ICT repertoires. Chapter 6: Experiencing Role Incongruence and Performing Boundary Work through ICT Repertoires explores the boundary work of allied health professionals when confronted with incongruent role demands (RQ3a and RQ3b).

Chapter 4: ICT Repertoires of Allied Health Professionals

The purpose of this chapter is to answer RQ1a and RQ1b: *What are the ICT repertoires of allied health professionals, and what factors influence ICT repertoire use?* As a reminder, ICT repertoires are defined as “the collection of [ICTs] and identifiable routines of use for specific communication purposes within a defined community of users” (Watson-Manheim & Bélanger, 2007, p. 283). Using ICT repertoires as a research framework can help scholars and practitioners understand how people use a variety of communication tools when at work, as well as grapple with how ICT use enables and constrains communication in a situated context. In the proceeding sections, I first describe the ICTs that fell within each professional group’s repertoire and how they communicated with their tools. Then, I outline three organizational factors—access, expectations, and workflow—that affected how each professional group used their ICT repertoire.

THE ICT REPERTOIRE OF CHILD LIFE SPECIALISTS

Child life specialists utilized at least six different technologies on a daily basis. Their repertoire consisted of a portable phone with call-only functions (called the HospiPhone), an office landline phone, a desktop computer with access to the electronic health care record (EHR) and email, their personal smartphones, a pager, and a tablet. I next describe these ICTs in more detail and explain the communication purpose of each tool.

Calls on HospiPhone and Landline Phone

The HospiPhone was an organization-issued mobile phone with access to the hospital cellular network (see Figure 4.1). This access allowed HospiPhone carriers to make quick calls throughout the organization by dialing hospital extension numbers.

HospiPhone could only place and receive phone calls. They were not preloaded with organizational phone numbers, and they did not have mobile computing or texting capabilities. Each child life specialist was assigned their own HospiPhone, and their manager expected them to carry the HospiPhone with them at all times when on duty. In their interdisciplinary work units, participants wrote their HospiPhone numbers on white boards that were designated for unit contact information. They shared their numbers on the board so their unit could reach them if they were needed.



Figure 4.1: Example of a hospital HospiPhone.

Child life specialists described the HospiPhone as useful for being reached by their unit and for contacting others to coordinate patient care, especially in situations when a synchronous communication channel was needed. Some child life specialists described HospiPhone as an “as needed” and secondary communication tool, while others labeled the HospiPhone as their primary devices for communication. This difference depended on the unit in which they worked. For example, child life specialists in Acute Care described the

HospiPhone as something they only used when someone was contacting them via the HospiPhone, when the situation was urgent and they needed an immediate response from a colleague, or when they anticipated having a lengthy conversation with someone. As Lola shared, “I only use HospiPhones when I know I need to have a detailed conversation with someone, or I need a response quickly. Otherwise, I don’t want to intrude and I’ll text them or something.” Cross-coverage child life specialist Patricia spent most of her work time covering Acute Care units, and she expressed similar sentiments on the intrusiveness of phone calls: “They ring loudly and interrupt the person from what they’re doing, so I don’t call unless I really need something.” Thus, those in Acute Care unit used HospiPhones only when they deemed a situation urgent enough to “intrude” or “interrupt” someone, or when they were receiving a phone call.

On the other hand, child life specialists in the Emergency Department, Intermediate Care Unit, and Intensive Care Units described HospiPhones as the primary tools they used to communicate when being contacted by others *and* when contacting others. As Emergency Department child life specialist Cindy shared, “Typically in the ED [Emergency Department] we need quick information, so calling makes the most sense.” Penelope, a Pediatric Intensive Care Unit (PICU) child life specialist, made a similar claim: “We really only use HospiPhones in the PICU. My nurses and docs don’t have SecureText [a HIPAA-compliant texting app], so we rely on calling each other.” Thus, depending on the workflow of their units and others’ access to similar technologies, some child life specialists used HospiPhones more than others, yet they all agreed HospiPhones were ideal for immediate, urgent, and/or synchronous communication needs.

Each child life specialist was also assigned a landline phone for their office (see Figure 4.2 for an example of the hospital landline phones), and they used their landline phones to coordinate care with other hospital professionals, or to share information or collaborate with patient’s families. All child life participants described using their landline phone to make calls when sitting at their desk, especially for scheduled phone calls. For example, I observed Jiminy, who worked in the Cardiac Surgery Unit, using her office landline phone to call a parent about his child’s upcoming surgery. Child life specialists described landline phones as preferred for calls because the service was more reliable on the landline phones than the HospiPhones. Furthermore, they could put calls on speakerphone in their offices, thus freeing up their hands from holding the phone up to their ears. However, child life specialists were at their desks half the day or less (depending on their daily workload), so using the desk phone over the HospiPhone was not always an option.



Figure 4.2: Example of a hospital landline phone.

EHR and Email on Desktop Computer

Each child life specialist was assigned a desktop computer for her office space. They used these computers to access the Electronic Health Record (EHR) and their email. Participants used the EHR to learn about patient cases, receive patient orders, and chart notes on their patients. To check the EHR, child life specialists had to travel to their office and use their desktop computers, as their offices were not located directly on the units in which they worked. Although there were computers located within the hospital units, child life specialists described that they did not have access to them. They had to be “approved unit users” to access the unit desktops. To be approved, child life specialists had to call IT and go through a week to month-long process to be granted special badge access. No participants in this study opted to go through the lengthy verification process. Thus, child life specialists only checked the EHR two to three times a day, depending on their patient load and ability to make it back to their office.

Child life specialists also accessed email on their office desktop computers. They used email to collaborate with their child life colleagues about patient cases and to communicate with patients’ families. Participants did not check their email frequently throughout the workday, as they were not in their offices on a regular basis. Furthermore, child life specialists described email as a secondary communication tool, as it was something they used when another ICT, such as phone calls, SecureText, or the EHR, was not an option to use. For example, child life specialist Cindy shared how she used email to communicate with colleagues in the outpatient clinic about patient cases, as they did not use the same EHR and could not see each other’s patient notes.

SecureText and Regular Text on Personal Phone

SecureText was a HIPAA-compliant texting app used in the hospital. Child life specialists working in Acute Care units recognized many of their patient care stakeholders, such as nurses and physicians, were using SecureText as a primary form of communication, and they wanted to incorporate the technology into their workflow. Their manager mandated that if the professional group wanted to use SecureText, then every child life specialist must incorporate it on her phone. Accordingly, each child life specialist downloaded SecureText on her personal smartphone.

Child life specialists used SecureText to collaborate and share information with their child life colleagues, and participants in Acute Care units also used SecureText to communicate with interdisciplinary teammates. As SecureText had a “group messaging” option, participants described how SecureText was helpful for getting many people on the same page about an issue, rather than calling each person individually as they did prior to SecureText. Additionally, Acute Care child life specialists described SecureText as helpful for communicating with their interdisciplinary unit colleagues when an immediate response was not required. As Bernadette shared, “Everyone’s really busy here, so SecureText is great because you don’t have to pull someone out of what they’re doing like a phone call might do. Instead, you can just send them a message, and when they’re ready to answer, they’ll reply.” Participants in Acute Care echoed Bernadette’s sentiments, and shared that SecureText felt less intrusive to others’ workflow.

One other child life specialist, Jiminy, described how she used regular text messaging to communicate with her interdisciplinary unit. Jiminy was a part of a new unit,

the Cardiac Surgery Unit, which opened three months before data collection began. Jiminy's teammates did not have SecureText access, nor did they carry HospiPhones. As they all had personal phones and brought these devices to work, the cardiac surgery unit texted one another about patient care questions and updates. Jiminy shared that because personal phone texting was not HIPAA compliant, she could not share identifying patient health information (PHI) when texting her unit teammates.

Other ICTs

In addition to HospiPhones, desktop computers, and personal phones, the child life repertoire also included pagers and tablets. All child life specialists were issued a hospital pager. Pagers were not tools used for regular communication; rather, they were used for emergency purposes only, as a page meant a trauma had occurred. Participants were assigned specific days to carry their pager, usually one workday every two weeks. If a page came through on their carry day, they were expected to report to the Emergency Department immediately to triage the trauma.

Finally, each child life specialist was responsible for carrying around a hospital-issued tablet throughout the day. Tablets were a daily part of child life specialists' work and were used to entertain and educate patients. For example, they were preloaded with games, surgical procedure instructions, and child-friendly information about diseases and illnesses. Thus, the tablets played an important role in patient playtime, distraction, and education. Figure 4.3 shows an example of a child life specialist's office space with her

ICT repertoire situated on her desk: her desktop computer, HospiPhone, landline phone, personal phone, pager, and tablet.



Figure 4.3: Example of the child life specialist office space and ICT repertoire.

THE ICT REPERTOIRE OF REHABILITATION SERVICES

The rehabilitation services group, which consisted of physical therapists and occupational therapists, did not have as many communication technologies as child life specialists. The group had four devices that they used in their repertoire: HospiPhones, landline phones in their office and on hospital units, personal phones, and desktop computers for the EHR and email. I next explain these ICTs and their use purposes in detail.

Calls on HospiPhone and Landline Phone

Unlike the child life group, each person in rehabilitation services was *not* assigned their own HospiPhone: the hospital provided the group with four HospiPhones, and these phones were to be shared among the 12 people working in inpatient rehabilitation services. Since the group was given a limited number of devices, the manager, Anotoinette, decided that the HospiPhones would be carried by one rehabilitation physical therapist (who was responsible for patients in the Rehabilitation Unit), one in-patient physical therapist (who was responsible for patients in all other in-patient hospital units, such as Acute Care or Pediatric Intensive Care), one occupational therapist, and one rehabilitation technician.

Because the professional group did not have a HospiPhone for each person, individuals carrying the phones for their subgroup had to make sure incoming calls reached the right people. Although there was no assignment of the four HospiPhones, the most senior rehabilitation physical therapist (Clarabelle), in-patient physical therapist (McKenna), and occupational therapist (Tammy) typically carried the phones. On a day

when someone else in the group was expecting an important call (such as the day I shadowed occupational therapist Bonnie and she needed a way to be contacted by me) or when a typical HospiPhone carrier was sick or on vacation, someone else in the group would carry the HospiPhone for the day. Participants described HospiPhones as the main way other professional groups in the hospital reached their workgroup. The four HospiPhone numbers for each subgroup were listed in all the hospital units on the contact whiteboards, and when interdisciplinary colleagues—such as physicians or nurses—needed to reach the Rehabilitation Services Department, they typically opted to call one of these HospiPhone numbers.

Landline phones played a prominent role in their ICT repertoire, especially for those who did not carry a HospiPhone. Landline phones, accessed either in the rehabilitation office space or on hospital units, were used by participants to speak to their rehabilitation colleagues about patient assignments and to communicate with other professional groups, such as nurses and physicians, about patient assessments and recommendations.

EHR and Email on Desktop Computer

Rehabilitation services used desktop computers to access the EHR and their organizational email. Unlike child life specialists, rehabilitation professionals were not assigned their own computer. Their office area—which was located beside the Rehabilitation Unit—was a communal, unassigned space, and it contained eight desktop computers shared by the 12 people working in the professional group. Participants could

also use the two desktop computers located on their unit in the rehabilitation gym. Despite there not being enough computers for everyone to have their own, participants shared this was typically not an issue. During an observation session, physical therapist Clarabelle said they were a highly mobile group who did not spend much time in the office. “Because we’re not in here all that much and we come in at different times throughout the day, usually there’s always at least one computer available when we go to the office,” she stated.

Participants described the EHR as a documentation tool in which they wrote up their patient notes and assessments, and they could access the EHR on desktop computers located on their hospital unit (the Rehabilitation Unit) and in their office space. For rehabilitation specialists, the EHR was not a place in which they received patient orders directly. As occupational therapist Bonnie described:

We have to get orders from a doctor or a resident to evaluate a patient... So what happens is if they put in an order in the computer [EHR], in our office, there's a printer and it just prints out a piece of paper that says the patient's name, their room number, that they need therapy, why they think they need therapy, and then it has the doctor's name on it.

When a print out came through, those in the rehabilitation office were to take the print out and assign it to the person with the smallest patient load. They kept track of these designations on a large corkboard in the main office where they pinned patient print outs under each person's name to represent patient load and assignment. At the end of the workday, they reassigned patients based on who would be working the next shift. Thus, patients were “shared” by the group. Because no one person was assigned to a patient in

the EHR and the group collectively cared for patients, providers would call the rehabilitation HospiPhone number and ask to speak with whoever was covering their patient that day. If the person carrying and answering the HospiPhone was not covering that particular patient, it was her responsibility to connect the provider with the right rehabilitation specialist.

Participants also described their desktop computers as a place where they accessed email. For rehabilitation specialists, email was not a communication tool they used for coordinating patient care. Instead, it served more of an administrative function for updates and information that was not time sensitive. As physical therapist McKenna shared:

We don't use email for any patient care stuff. I mean, I only check that like once a day because I don't sit at a desk that much. But yeah, [we use it] for like heads up for upcoming in-services, meetings. Things for our calendar sync to our email, so we'll get heads up about calendar invites. You know, hospital wide information, like we have resiliency rounds, trauma rounds, whatever rounds you're participating in. But it's not a daily communication tool we use.

Thus, because they spent little time in their office space, email was an ineffective communication tool for this group. Echoing McKenna's comments, other participants described how their goal was to check email at least once per day, but on busy days their email account could go unchecked.

SecureText and Regular Text on Personal Phone

Similar to child life, rehabilitation specialists described SecureText as a HIPAA-compliant way to reach their rehabilitation colleagues and interprofessional teammates

who also used the app. Like child life specialists, participants in rehabilitation services who used SecureText described the app as an ideal way to reach people for non-urgent inquiries and updates. Unlike child life, they described SecureText as a tool that was optional for their professional group to use: their manager said the app could be helpful for them in coordinating with their professional group and with interprofessional colleagues, but she said it was their choice whether to use it or not. Most individuals in rehabilitation services opted to download Secure Text on their personal phones, especially those who did not carry a HospiPhone for their workgroup. However, a few people on the rehabilitation team—namely, the techs and one physical therapist—chose not to use the SecureText app, as they did not want to bring their personal devices to work.

Participants also described having the personal phone numbers of many of their rehabilitation colleagues, and they sent regular text messages to them throughout the workday. Participants described personal text messages as easier to access and send than SecureText, as all had their personal text app located on the dock of their phone home screen—which required one or two clicks—while getting to SecureText in their phones took more steps and clicks. Participants described regular text messaging as a tool they used within their professional group when communicating about work concerns that did not involve patient names and PHI.

Other ICTs

One rehabilitation specialist did not carry a HospiPhone and did not use her personal phone at work. This individual, physical therapist Zoe, did not want to carry her

personal phone at work. Because she did not carry the HospiPhone and she needed a way to be contacted by her team and other hospital professionals, she instead opted to use a pager (see Figure 4.4). Using the organizational paging system, individuals could type a message to Zoe's pager number, such as "Call back this number" or "Meet me here at this time," and the message would appear on the device. However, this device only allowed Zoe to receive a message. There was no message sending capability on the pager.



Figure 4.4: Example of a hospital pager.

THE ICT REPERTOIRE OF SOCIAL WORK/CASE MANAGEMENT

Like child life specialists and rehabilitation services, the social work/case management group also used a HospiPhone, landline phone, personal phone, and desktop computer. They also had the option of using a laptop. I next break down the specific use purposes of the ICTs within social work and case management's repertoire.

Calls on HospiPhone and Landline Phone

Each person in the social work/case management group was assigned their own portable HospiPhone and a stationary landline phone for their office. Unlike child life specialists and rehabilitation services, social workers and case managers had to

communicate with organizations outside the hospital, such as insurance agencies and Child Protective Services (CPS). Participants described phone calls as a primary way they communicated with these outside organizations. They reached these entities through HospiPhones when they were out on their hospital units and through their landline phones when they were working in their offices.

When it came to internal hospital communication, participants described phone calls as something they used for “urgent” communication that required an immediate response or for lengthy conversations that were too long for text messages, similar to child life specialists’ phone use. They described how they preferred to stay off of their phones and use other avenues of communication when talking with interdisciplinary teammates or social work/case management colleagues so as to keep their phone lines open for external stakeholders, such as Home Health or Child Protective Services.

EHR and Email on Desktop Computer or Laptop

Like the other professional groups in this chapter, social work/case management used office desktop computers to access the EHR and email. The EHR was a common part of their workday, as they used the tool to receive consultation orders, learn about patient cases, and chart notes on their patients. Unlike child life and rehabilitation services, email was an integral part of their workday. Participants in this group described email as the primary tool they used to communicate with their social work/case management colleagues. During the business week (Monday through Friday), participants sent an email each morning on a social work/case management team listserv to let their teammates know

which patients they were covering for the day (see Figure 4.5 for the group’s morning report email template). Participants shared that these morning emails helped them clarify discharges and established who was in charge of specific patients—something important if a child had been in the hospital previously and the team wanted to maintain continuity of care.

AGENDA ITEM	COMMENTS
Avoidable Readmissions Avoidable Days	
Discharge/Transfer Barriers	
Payor Issues Provider Issues	
Recognitions Good Catches	
Patient experience Care Conferences	
Staffing/ Coverage Needs	
Hand off issues	
Comments for the good of the group	

Figure 4.5: Social work/case management morning report email template.

They also used email to communicate with patient guardians and external stakeholders, like insurance companies. For example, during an observation session, NICU case manager Wanda used email to coordinate with Home Health and a patient's mother about if Home Health's services could be provided to her baby.

Unlike other professional groups, social workers and case managers also had the option of using an organizational laptop, which one case manager selected to use. Like child life specialists, this professional group did not have badge access to the desktop computers on the units where they worked. However, as most of the social work/case management offices were located right beside their work units—and most spent at least half their workday in their offices—many participants described desktop computers as accessible tools. Two participants were exceptions to this case. Mary, a Neonatal Intensive Care Unit (NICU) and cross-coverage social worker, had an office in the NICU and was responsible for covering units when the patient census was high in other areas of the hospital. Her work was spread out across the organization, thus making it more difficult to access her office computer and desktop phone compared to others in social work/case management. Oncology case manager Marty was also not at her office desktop computer frequently. She chose to sit on her unit during the workday and was only in her assigned office at the beginning and end of her shift. Marty opted to use a laptop on the oncology unit, while Mary—who was more mobile and did not want to carry around a heavy laptop—selected to use her desktop computer and access it whenever she had a chance to visit her office.

SecureText on Personal Phone and Desktop Computer

Everyone in social work/case management opted to download the SecureText app. Their manager, Valerie, encouraged them to use SecureText, but she presented them with the option of downloading the app on their personal phone or using it on their desktop computer. Most participants opted to use SecureText on their personal phones. As case manager Joy described, “It’s so much easier to have it on my cell phone. I can just carry it with me wherever I go.” Social worker Mary, who worked across the hospital and could spend hours away from her office, described how using SecureText on her desktop computer was not a viable option for her because she spent at least half of her day away from the office. Because she did not want to miss messages, she downloaded SecureText on her personal phone. Only one participant, case manager Roxanne, downloaded SecureText on her desktop computer. She described how when SecureText was initially introduced to the group, she did not have a compatible personal phone. Once she upgraded to a smartphone, she decided she did not want a hospital-related app on a phone she owned.

Participants described SecureText as their “preferred” communication tool when it came to internal communication at the hospital, primarily with interdisciplinary colleagues in their unit and across the hospital. As Nicholas, the Rehabilitation Unit social worker, described, “Because we have so many irons in the fire, SecureText is great because the message is there waiting for you when you’re ready to read it, instead of being caught off guard and stopping what you’re doing because you need to answer a phone call.” Thus, while child life and rehabilitation services described SecureText as a tool that helped them

not interrupt *others*, social workers and case managers framed SecureText as a tool that helped them to not be interrupted *by others*.

FACTORS AFFECTING ICT USE

When analyzing the repertoire data, factors emerged that influenced ICT use differences among child life specialists, rehabilitation services, and social work/case management. Exactly *how* these organizational structures impacted use will be described in Chapters 5 and 6, but I outline these structures here as a reference point for readers. Namely, participants in the three professional groups (1) had different *access* to ICTs, (2) perceived different managerial *expectations* for ICT repertoire use, and (3) had unique *workflows* that impacted their use. These three conditions, which have not been explored previously in ICT repertoire literature, are discussed next.

ICT Access: Individual versus Shared

First, participants in each of the three professional groups had different access to ICTs within their repertoire. In the child life specialist and social work/case management groups, participants were *individually* assigned their own ICTs to use. For example, each child life specialist was given a HospiPhone, an office desktop computer, an office landline phone, a tablet, and a pager on their first day of work at the hospital. Social workers and case managers were also handed their own HospiPhone and given an office landline phone, and they had the option of getting their own desktop computer or laptop to use. However,

when away from their offices, child life specialists, social workers, and case managers did not have access to the desktop computers located on the units.

Unlike child life specialists, social workers, and case managers, the hospital provided rehabilitation services with a limited number of communication tools, and there were not enough devices for each rehabilitation specialist to have their own. Namely, the group was only issued four HospiPhones, and these phones had to be *shared* among 12 people in the professional group. This group also had to share desktop computers and landline phones in their shared office space. However, unlike child life specialists and social work/case management, this group *did* have user access to the desktop computers on the hospital units.

Managerial Expectations: Firm versus Flexible

Next, participants in the three professional groups perceived different expectations around device use. All professional groups were expected to be HIPAA compliant by national law. Beyond the scope of this expectation, management's instructions on how to use their tools varied for the groups. Child life specialists were given *firm* instructions by their manager on how to use their ICTs. The manager, Danielle, required all of her employees to download SecureText on their personal phone, and she appointed SecureText as the primary way the child life specialist group communicated with each other. In SecureText, child life specialists had a group messaging thread designated for their professional team. When a need or inquiry arose in the child life group thread, the manager requested that everyone on the team reply. So, for example, if Danielle requested someone

give a donor tour on Tuesday afternoon or if a child life specialist asked if someone could cover her shift in two weeks, she expected everyone to reply in the group thread so as to know quickly who was unavailable and who was covering the need. Furthermore, Danielle expected her employees to carry their HospiPhone and personal phone on them at all times when on duty in case they needed to be reached.

On the other hand, rehabilitation services and social work/case management had more *flexible* expectations from management in relation to their ICT use. The rehabilitation manager, Antoinette, had only one ask: because HospiPhone numbers were listed on the hospital units as the way to contact rehabilitation services, someone in each of the rehabilitation subgroups (In Unit Rehab Physical Therapy, Across Unit Rehab Physical Therapy, Occupational Therapy, and Rehabilitation Technicians) must carry the HospiPhones so each subgroup can be contacted, and she did not specify who needed to carry the HospiPhones. Antoinette also presented SecureText as an option for her group to use, but she did not require them to download the app. Other than having someone carry the HospiPhone throughout the work shift, Antoinette was open to the group using ICTs in whatever way was helpful for their work. Thus, rehabilitation specialists had more flexibility in terms of which ICTs to use and how they use their devices.

Like rehabilitation services, the social work/case management team received few orders from management on what ICTs to use and how to use them. When it came to using their technologies collectively, social workers and case managers described how there were no firm rules around how they carried or used their ICTs. As the manager, Valerie, shared about group ICT use, “As long as they’re courteous and focused on family-centered care

and patient satisfaction, [I'm content]." The only ICTs for which Valerie expressed use expectations were email and SecureText. Because their professional group did not communicate frequently, Valerie asked that the team send one email each morning they were on shift with an update on their patient load for the day. Other than this morning update, she expressed no other expectations around email use. Valerie also strongly encouraged the group to use SecureText. Valerie shared that interprofessional and unit communication should be the priority for her team, and she received feedback from other professional groups, like physicians and nurses, that they used SecureText. As she stated:

SecureText is great for us to communicate with doctors and with each other if we have a question. I'd like for all of my staff to download it. Most of them use [SecureText on] their personal cell phones, but they're not required to. They can use it on their computer instead.

Thus, although Valerie wanted her professional group to use SecureText, social workers and case managers had the option of whether to download it on their personal phone or use it on their office desktop computers.

Workflow: Degree of Mobility, Patient Assignments, and Shift Times

Workflow, or the process by which the professionals went about their work, also varied for the three groups. Specifically, the groups had similarities and variations in (1) degree of mobility at work; (2) process for patient assignments; (3) degree of collaboration with their professional teams, interdisciplinary units, and external organizations; and (4) shift times.

Mobile versus Stationary Work

First, the allied health groups varied in the degree of mobility in their daily work. Child life specialists described themselves as highly mobile employees, spending the vast majority of their day on their hospital units or attending meeting or child life events across the hospitals. Participants described going to their office once or twice a day typically. Given they were away from the offices frequently, and they did not have access to the desktop computers on the hospital units, participants described how they relied on their mobile devices, such as SecureText or the HospiPhone, for most of their communication.

Rehabilitation service participants also described themselves as a highly mobile group. Like child life specialists, they only visited their offices once or twice a day—typically once in the morning and again in the afternoon to do their EHR documentation. The rest of the day was spent in the Rehabilitation Gym or out on the units treating patients. The group relied on HospiPhones, SecureText, pagers, and landline phones as their primary forms of communication when out and about in the hospital.

Social workers and case managers were more stationary than child life specialists and rehabilitation services. Indeed, social work/case management participants described spending about 70% of their workday in their office space, as they needed their desktop computers and office phone lines to research external patient resources and communicate with other organizations via email or phone. Two participants were exceptions to this description. Mary spent at least half of her day out of office, as she had a cross-coverage role that required her to traverse two hospital floors. Case manager Marty, who worked on the Oncology Unit, preferred to be “near the action,” as she described, and see what was

happening on her unit. Thus, she used a laptop instead of a desktop computer and set up a space for herself on the unit. She placed printed labels with her name on a rolling chair, a counter space that served as her “desk,” a filing cabinet, and a stapler, and she sat in the same spot every day. Marty only went to her actual office twice a day—first thing in the morning to drop off her belongings, and at the very end of the day to grab her purse—yet she sat at her “unit desk” for about 70 to 80% of the workday, only leaving her spot to attend a meeting, stretch, use the restroom, get lunch, or occasionally check on a patient.

Assigned versus Shared Patients

Next, the professional groups had different processes for patient assignments. In child life, each specialist was assigned their own patients, and these assignments were based on the units in which they worked. Child life received patient consultations through the Electronic Health Record, and they could access these official consultation requests only on their desktop computers in their office. This group did not share their patient lists with their professional team. Social workers and case managers were also assigned their own patients according to the hospital unit in which they worked. They, too, received consultations through the Electronic Health Record. Given that this professional group tended to work with readmitted or returning patients, their manager asked them to review each other’s patient lists on the social work/case management email listserv each morning. If someone in the group recognized a patient whom they had previously treated on a colleague’s list, that patient was transferred for continuity of care.

The rehabilitation service group, on the other hand, described their patients as “shared.” Instead of getting consultations through the EHR, they instead received orders

through an office fax machine that did not designate a specific person to treat the patient. Patients were assigned according to subgroup (i.e., Rehabilitation Unit, Inpatient), specialty (i.e., physical therapy, occupational therapy), and the current patient load for each person, and patients rotated the following day depending on who worked the next shift. Because no one person was assigned to a patient in the EHR and the group collectively cared for patients, providers would call one of the rehabilitation HospiPhone numbers and ask to speak with whoever was covering their patient that day.

Variable versus Uniform Shift Times

Finally, the groups varied in their shift times. Child life specialists did not work the same shift hours. Given that the group was integrated into a specific unit and their manager, Danielle, wanted her subordinates to be accessible to their unit, each child life specialist aligned her schedule with the busiest time of her assigned unit. Hospital units had different peak hours for busyness, such as the Surgery Department having its highest patient load typically in the early morning and the Emergency Department getting more child life specialist requests in the mid-afternoon. So, for example, Meredith in surgery worked from 6 AM to 2 PM, Cindy in the Emergency Department worked from 10 AM to 6 PM, and Lola in Acute Care worked from 8 AM to 4 PM. As this group was responsible for collaborating with their units *and* their child life specialists colleagues, their child life teammates had different work hours, and their primary mode of communication was SecureText on their personal phones, child life specialists reported receiving work-related messages on their mobile phones when they were no longer on their work shift.

On the contrary, rehabilitation specialists all worked on the Rehabilitation Unit, and their scheduled hours were the same: from 8 AM to 4:30 PM. Participants stated these hours were well known to the rest of the hospital, as providers could only schedule therapy services during the 8 AM to 4:30 PM timeframe. Thus, participants shared that all within-group and interdisciplinary communication—be it face-to-face or technologically mediated—occurred during their service’s business hours.

Like rehabilitation services, the social work/case management group also all worked the same shift from 8 AM to 4:30 PM. As the group had to communicate with external organizations that operated during typical business hours, manager Valerie described working standardized business hours as making the most sense for her professional group. However, social workers and case managers—like child life specialists—also worked on a specific unit, such as Acute Care Neurology or the Oncology Unit, and their hours did not necessarily align with the busiest time of the unit. Furthermore, their interprofessional unit colleagues on their hospital units did *not* always work the same hours. For example, participants reported receiving calls or SecureTexts after hours from providers who worked the night shift.

In this section, I discussed the three organizational conditions—ICT access, managerial expectations, and workflow—separately. Yet it is important to note these factors are not separable in practice (Orlikowski, 2000). For example, because the hospital gave rehabilitation services *access* to only four HospiPhones, manager Antoinette did not *expect* her employees to supplement their own mobile phones and use SecureText to make

up for this ICT shortage. Instead, she described personal mobile phone use, and the SecureText app specifically, as optional for the group to use.

CHAPTER SUMMARY

This chapter explored the ICT repertoires of three allied health professional groups—child life specialists, rehabilitation services, and social work/case management—in a pediatric hospital. Child life specialists had access to their own HospiPhone, personal phone, pager, and tablet, and their manager *expected* them to carry their mobile devices with them throughout the workday. They had little flexibility in how they used their tools, as their manager expected them to use these devices in similar ways. Child life specialists also used their desktop computer and landline phone when in their offices, but access to these devices depended on their patient load and daily schedule, as their offices were not located on the units where they worked and they had a mobile *workflow*.

Rehabilitation service professionals had limited *access* to organizational devices, as their group was only given four HospiPhones by the hospital, and they shared these ICTs among their professional group. Furthermore, they received no explicit instructions or *expectations* from management on how to use their ICTs, other than someone in each subgroup needs to carry the HospiPhones. When it came to stationary tools like desktop computers, rehabilitation specialists were afforded the convenience of nearby *access* to computers in their office space and on the rehabilitation hospital unit. Yet using desktop computers could also vary for the day. As their *workflow* was highly mobile, they

sometimes only had time to sit at a computer once or twice a day depending on their patient load.

Social work/case management had *access* to multiple ICTs, such as portable HospiPhones, office landline phones, and desktop computers. Although they did not have *access* to the computers located on their assigned units, their *workflow* often kept them in their office, so a computer was often accessible. Managerial *expectations* were relatively flexible with this group: their manager, Valerie, was open to when and how they used their devices, so long as they prioritized patient-centered care and prioritized their interdisciplinary teams. She only has two requests: (1) they download SecureText, because she had received feedback this was the best tool for communicating with interdisciplinary stakeholders like physicians; and (2) they email the team each morning with a report of their patient load update to ensure continuity of care. After explaining the ICTs that fell within each professional group's repertoire and the organizational conditions that impacted their ICT use, I next turn to the role boundaries allied health professionals encountered through their ICT repertoires.

Chapter 5: Encountering Role Boundaries through ICT Repertoires

Chapter 5 answers RQs 2a and 2b: *What role boundaries do allied health professionals encounter when using ICT repertoires, and how do ICT repertoires support and/or challenge their roles?* Data analysis revealed participants encountered three boundaries when using their ICT repertoires: organizational role boundaries, professional role boundaries, and personal role boundaries. Furthermore, participants described how their repertoires both supported and challenged their role boundaries given their different levels of access to ICTs, managerial expectations for use, and unique workflows. I explore each of these role boundaries next, as well as how role boundaries were enabled and/or constrained through each professional group's ICT repertoires.

ORGANIZATIONAL ROLE BOUNDARIES

First, participants described parameters of their ICT repertoires through their role as an organizational member (i.e., a Children's Hospital employee), what I designate as *organizational role boundaries*. Chapter 4 described three conditions—access, expectations, and workflow—that impacted how participants perceived and used their ICT repertoires for work purposes. Data analysis revealed that these conditions supported or challenged organizational roles via ICT repertoires in two ways: *repertoire (mis)alignment* and *communication load*. These findings emerged when participants communicated within their professional group and when they interacted with interdisciplinary colleagues across the hospital, which I present next.

Within the Professional Group

Organizational role boundaries emerged when communicating within professional groups based on the conditions of ICT access, expectations, and workflow. Namely, the professional groups had *access* to similar and different technologies, each group's manager set different *expectations* for how to use their suite of ICTs and communicate with one another, and their *workflows* impacted how they used their ICTs when communicating within their professional groups. These issues of access, expectations, and workflows impacted perceptions of *repertoire (mis)alignment* and *communication load* when interacting with their professional groups.

Repertoire (Mis)Alignment

First, participants varied in *ICT repertoire alignment* when communicating within their professional groups. As a reminder, Watson-Manheim and Bélanger (2007) defined repertoires as “the collection of [ICTs] and identifiable routines of use for specific communication purposes within a defined community of users” (p. 283). Child-life specialists and the social work/case management group described the communication within their professional group as “on the same page” and consistent among group members. These allied health professionals had the same “collection of ICTs” within their professional groups. Furthermore, they had similar “routines of use for specific communication purposes,” as they designated certain ICTs for urgent and non-urgent communication. Thus, I label child life specialists and social/work case management as having an *aligned repertoire* for within-group communication. On the contrary, participants in rehabilitation services had different “collections of ICTs” and described how

there was “ICT variability” in their group. As group members used different primary ICTs to communicate and their manager did not set expectations for which ICTs to use for specific communication purposes, rehabilitation service participants described their “routines of use” as inconsistent among group members. Accordingly, I label their ICT repertoire as *misaligned*. In the next section, I describe how different access to ICTs and managerial expectations played a role in these alignment differences.

Child life specialists: Aligned repertoire. Participants in the child life group all had individual access to the same devices, and their manager, Danielle, expected them to use their devices in similar ways for team communication. Danielle required all of her employees to download SecureText on their personal phone, and each specialist was expected to carry their HospiPhone and personal phone on her at all times when on duty. Danielle designated that SecureText would be the way the child life specialist group communicated with each other for any issue. In SecureText, child life specialists had a group messaging thread designated for their professional team. Here, they communicated about topics relevant to their professional group, such as discussing details about hospital fundraisers, planning child life events, and asking for backup assistance. When a need or inquiry arose in the child life group thread, the manager requested that everyone on the team reply. So, for example, if the manager requested someone give a donor tour on Tuesday afternoon or if a child life specialist asked if someone could cover her shift in two weeks, Danielle expected everyone to reply in the group thread so as to know quickly who was unavailable and who was covering the need.

Through these structured within-group ICT expectations, participants shaped and made meaning of their organizational experience. For example, participants described that by having a designated place to communicate with their child life colleagues, it helped them reach their professional teammates faster and took the guesswork out of how to reach them. Lola, an acute care child life specialist, described the effectiveness of SecureText for within-group coordination:

SecureText is more efficient and it helps us respond to patient needs faster. So before SecureText, if something was needed in our department—like if there was a big donation, or if we had an event change, or if we had kind of a last minute meeting scheduled—that would either have to be emailed out or somebody would have to call potentially 12 different people. Whereas now, we have the SecureText group chat and we can send out a group chat to child life and get that message right away without sitting [at our desk], because we don't sit at our desk and check emails all day. We're out on the unit. So SecureText is a much more efficient way for us to get ahold of each other for those types of needs.

Like Lola, other participants described how using SecureText for group messages streamlined their communication with their child-life colleagues by increasing visibility of seeing, and the speed of receiving, a message since everyone carried their personal phone and this mobile form of communication better suited their workflow.

Social work/case management: Aligned repertoire. Social workers and case managers also described their within-group communication through ICTs as similar and consistent. Their manager, Valerie, described how she wanted her team to be able to prioritize unit and interdisciplinary needs, and she described email as a within-group communication option that was the least intrusive and interruptive to her subordinates' workflow. Participants in this group shared Valerie's sentiments. As case manager Joy

described, “We communicate [with our team] through email, but there’s not an expectation for a quick response. It’s more so just to send out something like ‘Does anybody know about this or that?’ and then someone will reply when they have a chance.” Case manager Roxanne elaborated, “I’m not always at my desk to look at email. Sometimes emails get missed for a while because I’m not always looking at it, but that’s typical for us.” Thus, unlike child life specialists, social workers and case managers did not share an “everyone reply” mentality, and there was not an expectation for email to be integrated into the regular pattern of their workday. Valerie’s only expectation was that her subordinates send a daily morning email on the social work/case management listserv so the team knew which patients were being covered that day and continuity of care was maintained.

Participants shared that email was not an “urgent” or a “quick” form of communication. As they did not have the expectation to check email regularly, they described email as an ineffective tool for more pressing concerns. When they needed to reach someone specific in their professional group quickly, participants described how they used SecureText to get in touch with their colleagues. If the colleague did not reply through SecureText, they then called their teammate’s HospiPhone or desk phone number. Yet instances of communicating with their professional group through SecureText, HospiPhone, or desk phone were rare. First, they rarely needed a specific colleague in their professional group, as their workflow was highly integrated in their interdisciplinary units. Furthermore, if they had question that any social worker or case manager could answer, participants opted for a face-to-face conversation. As much of their daily tasks involved work on their computers, participants spent most of their day in their office. They shared

their office space with a fellow social worker or case manager, so if they had an urgent question, a face-to-face conversation with their officemate was typically their first line of defense. Thus, participants described a type of “communication tree” they followed when communicating within their professional group: they emailed for all non-urgent needs, and if they needed a specific colleague urgently, they would SecureText followed by phone call. If any social worker or case manager could answer the pressing issue, participants would ask their officemate face-to-face. Figure 5.1 shows the social work and case management within-group communication chain.

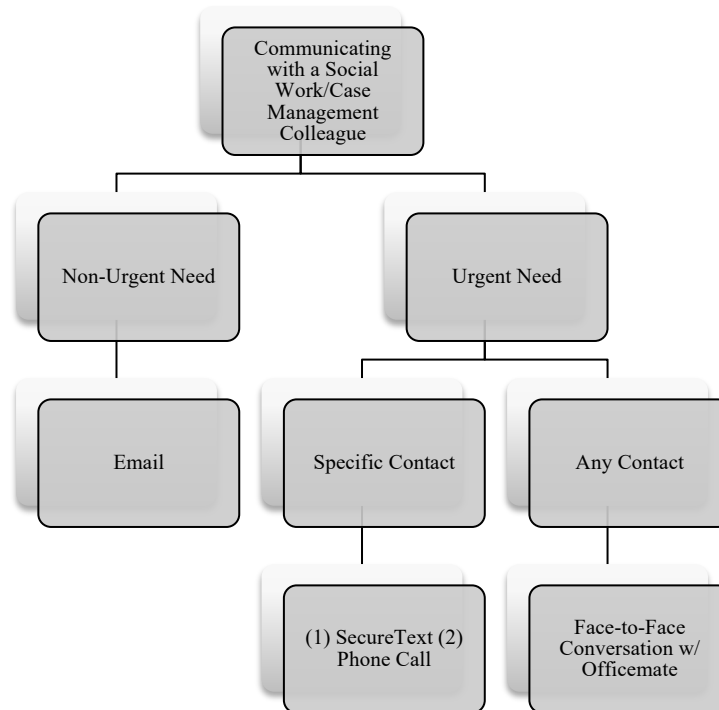


Figure 5.1: Social work/case management within-group communication chain.

Rehabilitation services: Misaligned repertoire. Unlike child life specialists, social workers, and case managers, participants in rehabilitation services did *not* have individual access to the same ICTs. Instead, the hospital assigned this group only four HospiPhones, and these devices were to be shared among 12 people. Given the limited number of mobile, synchronous ICTs assigned to rehabilitation services, and individuals in this group had a highly mobile workflow, manager Antoinette did not set firm expectations on how to use ICTs or how to communicate as a group. Her only request was for someone in each sub-specialty (In Unit Rehab Physical Therapy, Across Unit Rehab Physical Therapy, Occupational Therapy, and Rehabilitation Technicians) needed to carry a HospiPhone during regular business hours (8 AM to 4:30 PM) so the group could be reached. Antoinette presented the group with the options of using their personal phones or hospital pagers if they were not carrying a HospiPhone. Accordingly, rehabilitation service employees tailored their ICT use based on (1) if they were carrying a HospiPhone that workday, and (2) their own preferences for a primary communication tool if they were not carrying a HospiPhone (SecureText on their personal phone or a hospital pager).

As not everyone had access to the same devices and their manager set no clear expectations on what ICTs to use or how to use them, participants described how “everyone uses different means of communication as their primary tool,” and this ICT variability posed significant challenges for them. Specifically, participants described the challenge of learning the ICT preferences of each person in the group and having to work around ICT differences, as one person may rely on the HospiPhone, another may only use SecureText, and another may have a pager as a primary tool. As Vanessa, a physical therapist, described

during observations, “You can use this [HospiPhone]. You can use this [personal phone]. You can have a pager. There are also desk phones. It's ridiculous, and everybody uses different things.” Sienna, a physical therapist, further elaborated on these ICT differences by describing how she reached her colleague, Clarabelle:

I know Clarabelle [physical therapist] always has a [HospiPhone] extension. I'm more likely to get her calling her HospiPhone than I am SecureText. If I think she's probably with a patient, I SecureText her. If I want an answer right now or I want to tell her something immediately, I'm going to call her rather than text her because she may or may not check [the text]. So I know, for the most part, people's preferences, but it's hard. There are frustrations with every method of communication.

Sienna's quote shows how she considered not only what devices her colleague carried, but also what type of ICT would be most appropriate given the situation (such as calling for something urgent or texting for a non-urgent issue).

When they could not find or reach people within their professional group through a hospital communication device or the SecureText app, some participants described contacting their rehabilitation service colleagues through additional personal communication tools. For example, occupational therapist Tammy described using personal text messaging with her occupational therapist colleagues:

Not everybody uses SecureText, so you know you're guaranteed to get ahold of people by doing their personal text. So this morning, for example, the OT assistant... [personal] texted [the OT team], ‘Hey, do you think you're gonna need my help? I got a flat tire.’ I think [we use personal text] because SecureText is an app, and you might have it in a different part of your phone where you're not going to check it as often. But it seems like everybody [in OT] pretty much uses regular

text for anything that doesn't have patient information, and when it does have patient information, we use SecureText.

Personal text messaging, from Bonnie's perspective, afforded greater visibility and quicker access than SecureText, and it offered her an additional avenue to reach her occupational therapist colleagues. While this method of personal texting worked for the occupational therapy subgroup, not everyone in rehabilitation services used their personal phone at work.

Other participants described even if they carried the same primary communication device as other people in their professional group, the use of the device was inconsistent. Bonnie, an occupational therapist who used SecureText as her primary method of communication, further elaborated on this inconsistency challenge and its consequences with her occupational therapy subgroup when communicating through SecureText:

I think [our biggest problem is] having multiple methods [of communication] and having to use different methods for different people in different situations. So for example, I know [occupational therapist] Tammy doesn't always check her SecureText, so sometimes I'll text her something at 8 AM and she doesn't get it until literally 4 PM, and then she says, 'Oh sorry, I didn't check.' Whereas [occupational therapist] Elsie always does [check SecureText], and so I know I can text her. It's just a lot to keep track of—who uses what and when, and what's a reliable source of communication for that specific situation. So if I really need Tammy by the end of the day, and I thought a text message was enough because most people respond to a text but she didn't [respond] that day, then that's frustrating because that could lead to, in worst-case situations, missing treatment for a patient.

Thus, not only was inconsistency of use at times irritating and difficult to keep track of—it could also lead to delayed or missed patient care. Antoinette, the rehabilitation services

manager, summarized her perceptions of ICT variability and inconsistent use among her team:

Our communication is not where it needs to be... because there's so many different [communication tools]. If somebody needs to reach me, do they call me at a desk, do they text me on my cell phone, do they call a HospiPhone, or do they send me an email? And so to me, it's up to me to decide the level of urgency. That's what drives how I communicate with somebody. If I need somebody quickly and I actually need a quick response, I use my cell phone to text them because I'm scared an email will get buried. But I can't call them because my cell phone doesn't work in my office due to [my cell service] coverage. And the last thing I use is my desktop phone, but that's what works for me. That's not a standard that we've set for the department... We don't have anything that says 'If you need to get to someone quickly, text them' or anything like that. So we could all have different ideas of what to use and how to use it.

Figure 5.2 summarizes the chain of questions rehabilitation professionals considered when using their ICT repertoires for within-group communication, and Figure 5.3 shows a visual example of the within-group communication ICT differences and communication challenges for this professional group.

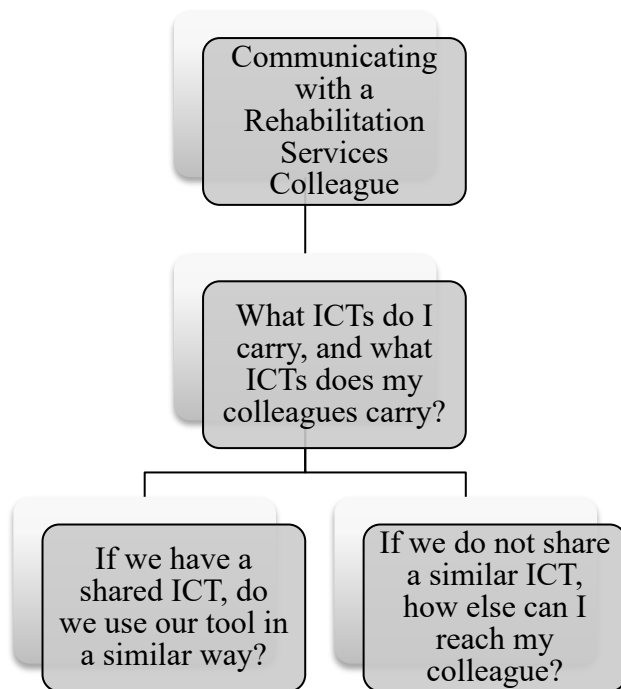


Figure 5.2: Rehabilitation services within-group communication chain.

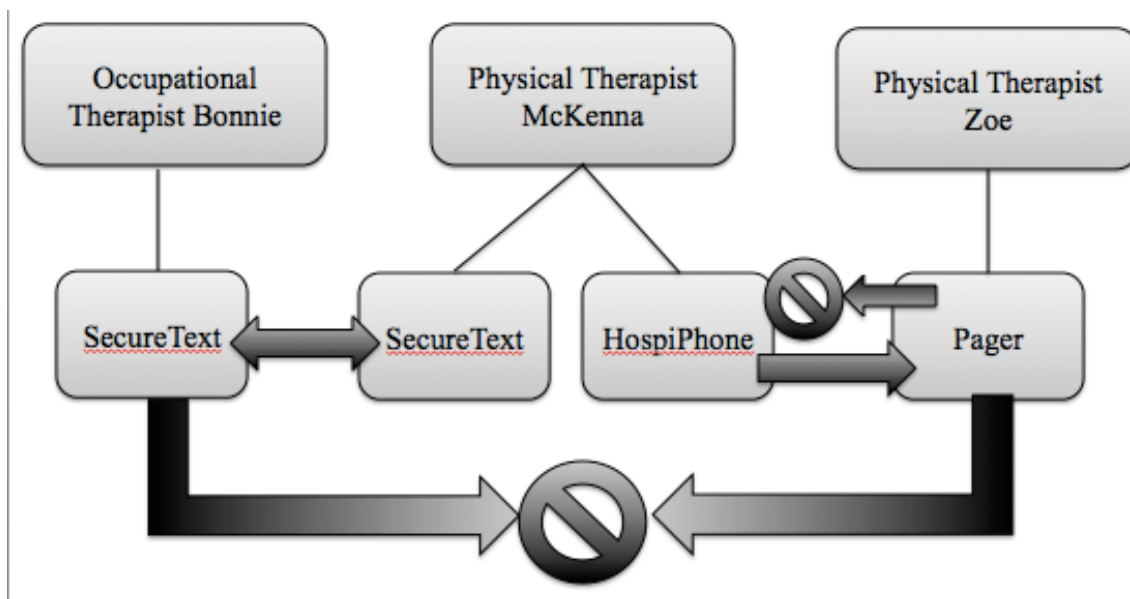


Figure 5.3: ICT differences among three rehabilitation service participants. The “no” symbol represents incompatible ICTs through which messages cannot be sent to their colleague.

Communication Load

In addition to ICT (mis)alignment, participants also talked about their *communication load* in relation to their organizational roles and ICT repertoires. Communication load is defined as “the extent to which, in a given period of time, an organization’s members perceive more quantity, complexity, and/or equivocality in the information than an desires, needs, or can handle in the process of communication (Chung & Goldhaber, 1991, p. 8; see also Ballard & Seibold, 2006). Stephens and colleagues (2017a) defined communication overload as a state in which an individual finds him- or herself using too many ICTs, having many distractions, experiencing compromised message quality, feeling responsible to respond on their ICTs, being overwhelmed with information, experiencing a continuous pile up of messages, and feeling pressured to make decisions. Although underload is not a concept actively researched in the communication field, I define it here as the antithesis of this overload state, in which an individual feels they do *not* have enough ICTs and are underwhelmed by ICT messaging.

Participants in the three groups experienced different degrees of communication load through their ICT repertoires in relation to their within-group communication. Child life specialists described being in a state of overload when using SecureText on their personal phones. Rehabilitation service professionals described different communication loads in relation to within-group communication depending on the ICTs they used individually. Social work and case management described an ideal communication load when communicating with their professional group colleagues. I describe each of these next, beginning with child life specialists.

Child life specialists: Communication overload. Child life specialists described having communication overload when it came to using the SecureText app on their personal phone. This sense of overload emerged in three ways. First, some child life specialists, such as those working in the Emergency Department, Intensive Care, and Intermediate Care units, only used SecureText for communicating with their child life colleagues. These participants described how they *carried too many ICTs* because the SecureText app and personal-phone use did not suit their unit workflow. Second, individuals who used SecureText for within-group communication and unit communication, such as Acute Care child life specialists, described feeling overwhelmed by the *piling up of messages* in SecureText. They described how being bombarded with SecureTexts throughout the day was *distracting* and made them feel *overwhelmed by information*, and they worried about *compromised message quality*. Finally, all child life participants described feeling *pressure to respond* to the child life messaging thread in SecureText.

Carrying too many ICTs. Child life specialists in more specialized departments, such as emergency and intermediate care, expressed the challenge of carrying an extra ICT to communicate with their child life colleagues. These participants included their personal phone, with the SecureText app, in their ICT repertoire solely to communicate with their professional group via SecureText. As Emily, an Intermediate Care (IMC) child life specialist, stated, “I don't think I've ever gotten a text from a nurse on SecureText to come to a procedure. They call my HospiPhone. Really, this [HospiPhone] is communication for me. The only reason I use SecureText is communicating within our [child life]

department.” Cindy, an Emergency Department (ED) child life specialist, echoed Emily’s perspective, further stating that SecureText did not fit the workflow of the ED:

I only communicate with child life staff through SecureText. [In the ED], they all just call on the HospiPhone... Everyone [in the ED] uses the HospiPhone for everything. Yeah, and when [people working in the ED] call us, it's because they're getting ready to do something in that moment—so just calling someone and saying, ‘Hey, this room has this procedure going on.’ It's quicker than sending out a SecureText, then waiting for someone to hopefully have their cell phone on them to check it.

Those who did not use SecureText with their interprofessional stakeholders described the frustration of having an extra ICT that did not align with their everyday workflow, making statements such as “It’s just another thing I have to carry around for one group of people.”

Piling up of messages. Approximately half of the participants in this professional group used SecureText with their child life colleagues *and* with their interdisciplinary hospital units. These child life specialists stated the volume of messages increased exponentially when their professional group started using SecureText as its form of within-group interaction. This mass influx of communication brought with it a wave concerns about missing important information when sifting through messages, similar to Stephens’ and colleagues’ (2017) finding of “piling up of messages” (p. 278). Receiving multiple SecureText messages throughout the day from their child life colleagues also made it challenging for them to prioritize their duties within their interdisciplinary work units. Participants discussed how hearing the sound notification for a SecureText message or looking at a phone screen that read “5 SecureText messages waiting” interrupted them from their current work, such as assessing a patient or coordinating with a nurse. In the child

life focus group, the following interaction unfolded when they received a lengthy series of SecureTexts within their child-life messaging group:

Penelope: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 [SecureText messages received from the child life specialist group].

Emily: So I'm trying to decide if I'm supposed to focus here [on this current task] or if I need to look at this [series of messages]. I'm trying to ignore it.

Penelope: The issue's resolved now. Don't worry.

Patrice: But also even after it was resolved, there was another text that was like, 'Well, I sent this person a text.' And then, 'Thank you for sending that text.'

Emily: It's sort of like emails when someone hits Reply All and they really—

Penelope: And they don't need to.

Emily: —just need to reply to the one person. The same thing applies to SecureText.

Penelope: So we just end up with this long running list of a constant, never ending group text that you can't get out of.

As this interaction demonstrates, child life specialists experienced frustration not only with the volume of SecureText messages piling up and the challenge of whether to check the app and respond, but also with the types of messages communicated in SecureText. As Patrice explained, "I thought [SecureText] was great before we used it with our child life group, when I just directly spoke with doctors and nurses about patient issues. Because I

thought that's what SecureText was for—HIPAA things you needed to talk about with your unit staff. And then it turned into more of a Reply All email chain.”

Feeling pressure to respond. All child life participants described the pressure to respond as a challenge of SecureText, given their manager’s expectation for them to reply to all SecureTexts in the child life messaging group. This request was frustrating for participants, as not all child life messages seemed to necessitate a response. Consider the following interaction:

- Emily: Our manager did tell us to respond to every text, and we’re like, well, is this one that we need to respond to? It’s not clear where the line is.
- Angela: Yeah, do I need to respond to it?
- Lola: I think that [response request] meant in the forms of donations or helping cover. I don't think it meant everybody has to respond to [every message].
- Jiminy: But if someone sends out a text like ‘I need help doing this,’ she wants us all to respond regardless of if you're available or not available. So either say, ‘No, I'm not available’ or ‘I'm doing this,’ or, ‘No, I can't cover,’ or, ‘Yes, I can.’ Which is totally fine. Just in the moment, well, does that apply to everything?

As this interaction shows, participants found the manager’s response request confusing, as it was not clear if they needed to reply to *every* message, nor did it feel reasonable to do so.

Rehabilitation services: Mixed communication load. Those in rehabilitation services described their communication load differently depending on whether they carried the HospiPhone. Those without HospiPhones in this professional group expressed a state

of underload when it came to their within group communication, while individuals who carried a HospiPhone described feelings of overload. I break down each of these perspectives next.

Without HospiPhones: Communication underload. Those without HospiPhones described being underloaded when it came to their within-group communication via ICTs, as they expressed difficulty in reaching their colleagues when they carried different communication tools. For example, some rehabilitation specialists were unable to contact their teammates directly when their ICT repertoires did not align. For example, both occupational therapist Bonnie and physical therapist Zoe did not have HospiPhones on a regular basis. Bonnie used SecureText on her personal phone as her main form of communication. Zoe did not use her personal device at work and instead carried a pager. Because Bonnie did not use a device that linked to the organizational paging network and Zoe did not use a tool with texting capabilities, they could not contact each other during the workday through their ICTs. Bonnie described this frustration:

An issue I have is [communicating] with Zoe, who pages people on a regular basis because that's how she communicates. She'll say, 'Oh, I paged you,' and I'll say, 'I don't have a pager.' Because to carry around a pager for one PT [physical therapist] who maybe would need to talk to me [is too much]. But Zoe doesn't use SecureText, so there's no clear way to reach her.

To make up for these within-group communication mismatches, RS participants described physically tracking down their colleagues in the hospital or setting up designated meet-up times at the start of the day. Physical therapist Zoe (who only used a pager)

described how she communicated with occupational therapist Bonnie (who only used SecureText):

Bonnie and I don't have a good way to communicate throughout the day, so I'm more often going to look for her, like maybe stop by the office a couple times to see if she's there and we talk about this patient we're both seeing. What I usually do with her is we're guaranteed to both be in here [in the RS office] in the morning, so we'll communicate a time [and place to meet], like let's plan on meeting at this patient's room at 9:30. But if she can't make it, she doesn't have a good way to get back in touch with me.

As Zoe's quote demonstrates, participants without HospiPhones worked around their communication challenges by setting up times to meet face-to-face. However, if plans changed, communication misses could occur with teammates who had incompatible ICTs.

With HospiPhone: Communication overload. Those with a HospiPhone described moments of communication overload when it came to within-group communication. As the HospiPhones were the “hub of communication” for rehabilitation services, participants who carried the HospiPhones described how they “filtered and transferred calls” for their teammates so that they could communicate with one another. Physical therapist McKenna shared the following:

Because some people in the group don't have a way to reach each other, you're filtering a lot of calls for them. Like, 'Hey, if you hear from or see Bonnie, have her call me.' Or they'll call and ask, 'Hey do you know what patients Zoe has today and maybe where I can find her?' You just find that [the HospiPhone] feels like it's ringing all the time and it just gets to be a lot and takes you away from what you're working on. But yeah, someone's got to answer [the HospiPhone].

As there were only four HospiPhones for the entire group and not all participants in the group had a clear way to reach one another, individuals who carried the HospiPhones for rehabilitation services thus found that the HospiPhones served as a “communication hub” for their group. Similar to Stephens and colleagues’ (2017) overload findings of feelings of responsiveness and distraction, participants in this group described feeling *responsible to respond* because their teammates did not have access to a HospiPhone, yet this constant answering *distracted* them from their work.

Social work/case management: ideal load. Participants in social work/case management described how they felt like they had a clear system of communication with their professional group. As case manager Wanda explained, “We have a good communication system with our [social work/case management] team. We mainly use email and there’s no pressure to answer quickly, and we can also use SecureText or call if we need something urgent. It’s good because that way we’re not really interrupted by our teammates.” Social worker Mary shared a similar perspective: “I like that we use email [as a group]. That way it’s there on the computer, and I can answer it when I have a chance instead of handling it right away.” Thus, social work and case management felt like their group was accessible to them through multiple ICTs if they needed, but because they had a clear communication system in place that began with an asynchronous tool (i.e., email) for non-urgent needs, and they had a designated communication chain that escalated in perceived degree of interruption (email to phone call), this group felt like they had a reasonable communication load from their professional group that worked well with their workflow.

Furthermore, it is important to note that social workers and case managers did not communicate with their professional group frequently. Manager Valerie described the social work/case management team as a “fractionated group” that was spread across the hospital and highly integrated into their interdisciplinary care team. Unlike child life specialists and rehabilitation services, social workers and case managers did not work collaboratively as a professional group to accomplish daily tasks, such as child life specialists working together on a fundraiser or a physical therapist and occupational therapist collaborating on a patient’s treatment plan. Instead, social workers and case managers spent the vast majority of their time working with their interdisciplinary colleagues in their work units.

Table 5.1 summarizes how the allied health professionals studied in this dissertation described their ICT repertoires as supporting and/or challenging their role boundaries when communicating within their professional groups. Next, I describe organizational role boundaries participants experienced when communicating across professional groups.

Professional Group	Repertoire (Mis)Alignment	Communication Load
Child Life Specialists	<p>Supported w/in Group Communication through Aligned Repertoire</p> <ul style="list-style-type: none"> • Individual access to ICTs • Firm managerial expectations on ICT use • Used SecureText for all within group communication 	<p>Challenged w/in Group Communication through Overload</p> <ul style="list-style-type: none"> • Specialty units: carrying too many ICTs • Acute care: overwhelmed by information • All child life: Piling up of messages
Rehabilitation Services	<p>Challenged w/in Group Communication through Misaligned Repertoire</p> <ul style="list-style-type: none"> • Limited number of HospiPhones and shared access to ICTs • Flexible managerial expectations on ICT use • Used different ICTs to communicate within their group 	<p>Challenged w/in Group Communication through Mixed Load</p> <ul style="list-style-type: none"> • Underload without a HospiPhone • Overload with a HospiPhone – feeling responsible to respond, distractions
Social Work/Case Management	<p>Supported w/in Group Communication through Aligned Repertoire</p> <ul style="list-style-type: none"> • Individual access to ICTs • Relatively flexible managerial expectations on ICT use • Used email, SecureText, and phone calls to communicate within group, depending on urgency 	<p>Supported w/in Group Communication through Ideal Load</p> <ul style="list-style-type: none"> • Perceived a clear communication system for urgent and non-urgent messages • Did not feel a pressure to respond from management

Table 5.1: The relationship between ICT repertoires and within-group communication for allied health professionals.

Across Professional Groups

In addition to experiencing ICT repertoires through their within-group roles, participants in child life, rehabilitation services, and social work/case management identified the boundary they encountered when communicating with interprofessional colleagues in their units and across the organization through their ICTs. Participants' *access* to ICTs was not always the same as their interdisciplinary unit colleagues. Furthermore, even other professionals had the same access to communication devices, patterns of ICT use within their *workflows* were not always aligned. Thus, issues of *repertoire (mis)alignment* and *communication load* also occurred again for allied health professionals when communicating across professional groups. I describe these experiences next.

Repertoire (Mis)Alignment

A primary way allied health professionals described being supported and challenged by their ICT repertoires was the degree of repertoire alignment with other professional groups. When participants used the same ICTs as their interdisciplinary colleagues and use expectations and routines were similar, participants described how their ICT repertoire supported patient care processes and made their work more efficient. On the other hand, participants described the challenge of ICT repertoire “mismatches” across the organization, in which other professionals used completely different ICTs, their ICTs operated in different ways, or they used the same ICTs differently. When these friction points occurred, participants described various “workarounds” they performed to overcome misalignment and connect with the interdisciplinary colleagues. I describe

repertoire alignment and misalignment, and the workarounds performed, by each professional group next.

Child life specialists. Child life specialists described how interprofessional communication was enhanced and supported when their ICT repertoires aligned with their interdisciplinary contacts. As child life specialists had a highly mobile workflow, they relied on SecureText and HospiPhones to communicate throughout the day. Participants shared that communication was fluid when their interdisciplinary counterparts used a similar mobile device to communicate. I describe across-group repertoire alignment in relation to SecureText and the HospiPhone next.

Repertoire alignment: SecureText. Child life specialists who worked in Acute Care units shared how they preferred to use SecureText to communicate with their interprofessional colleagues. First, they described SecureText as a tool that cut down the “length of the communication chain” and helped them reach interdisciplinary colleagues who once felt inaccessible. Patricia, a cross-coverage child life specialist who often worked in Acute Care, shared, “It's so much easier for me to directly talk to a resident [through SecureText] than to call on a phone, page them out, then have them call me back. Instead I can just say [in a SecureText message], ‘When you have time, call this number.’ It's an easier way for me to communicate [with residents], and the nurses use it too.”

Furthermore, Acute Care child life specialists shared how communicating with providers through SecureText was a better fit for their mobile, hands-on workflow. As Angela, an Acute Care – Respiratory child life specialist, described:

In inpatient [Acute Care], we SecureText a physician if we have a question about something, or the charge nurse or the bedside nurse. For us, it's a better way of communicating because we can get more information [in a text message]. Plus everyone's really busy around here, and SecureText doesn't feel as intrusive as a phone call.

Lola, who worked in Acute Care - Neurology, added the following:

When [our interprofessional colleagues] SecureText us, we can readily see [the message] and know what's needed, and you can go back and reread it if you need clarity about something. ... It's great because if we're tied up with something, the message is waiting for us, whereas that's not always the case with a phone call. You don't have voicemail on the HospiPhone, so you need to answer or you have to call the person back to figure out what they want. It's just so much more efficient when we use SecureText with our docs and nurses. We can respond to patient needs faster when they communicate with us that way.

As Angela and Lola's quotes highlight, Acute Care participants liked the persistence of the SecureText messages, as they could go back and review the text messages if needed. They also liked how SecureText did not feel as interruptive as a phone call, as they could read the SecureText message when they were available instead of answering right away, as they felt they had to do with the HospiPhones since these devices did not have voicemail.

Repertoire alignment: HospiPhones. Child life specialists in the Emergency Department related effective and efficient interprofessional communication to their HospiPhones. These child life specialists shared how the expectation in their unit was to use the HospiPhone to communicate with one another. As Cindy shared:

We use the HospiPhone for all communication in the ED [Emergency Department]. Because most of what we do is immediate stuff, where they need your help right

then, sending a text message doesn't really make sense for our workflow. So we all call when we need something. It's much more efficient for our workflow.

Lisa, who cross-covered in the Emergency Department, shared how communicating on the HospiPhone simplified unit communication processes:

[In the ED] you don't have to worry about keeping up with 10 different formats to talk to people here. The nurses have HospiPhones, the physicians have HospiPhones. On the whiteboard, only HospiPhone numbers are listed. So people know that's how to get in touch with one another. Plus, there's the advantage of if you can't find someone in the unit, you can easily find them. It's a small unit so it's easy to track people down.

As professionals in the Emergency Department relied on one ICT to communicate, Lisa felt that this simplified decision making for reaching others in the Emergency Department. Furthermore, because the Emergency Department was a smaller unit, those working in the department could walk around and find someone if they could not connect via HospiPhone.

Repertoire misalignment. Child life specialists described communication as challenging when their repertoires did not “match” other professional groups. For child life, repertoire misalignment was particularly problematic when it came to accessing patient information and communicating with interdisciplinary teammates, particularly through the Electronic Health Record (EHR), HospiPhones, and SecureText. Child life specialists experienced friction in patient care coordination when their interprofessional contacts used completely different ICTs, had similar ICTs that operated on a different network, and when interdisciplinary teammates had different preferences for use around a shared ICT.

Using different ICTs. First, child life specialists experienced repertoire misalignment when other hospital professionals used completely different ICTs to coordinate and share patient information. The Electronic Health Record (EHR) was one example. Participants shared that their role often required them to contact individuals within the hospital system who worked outside the immediate pediatric hospital. This presented a challenge to child life, as these external units did not utilize the same EHR. For example, Cindy, an Emergency Department child life specialist, described the challenge of communicating with the hospital's outpatient clinic through the EHR about returning patients:

Outpatient, for whatever reason, doesn't use the same [EHR] charting system that the hospital uses. Which can be challenging because none of the chart notes that [outpatient] did actually translated into the [inpatient] chart. So there would be all the chart notes from our [outpatient] clinic seeing the patients, but we would have no idea what happened [because we can't access the notes]. We don't know how the patients cope. We don't know what works. It's all based on us having a relationship with the staff here in the hospital to communicate back and forth who needs support.

In this situation, Cindy described how she worked around the limitation of using different EHRs by *relying on her previous knowledge* of who worked outpatient and the ICTs they had in common. In this case, Cindy shared how she opted to use email, an ICT she and her outpatient colleague had in their repertoires, to collect the patient history and information from the incompatible EHR.

Child life specialists also described ICT differences in relation to SecureText. Although several participants described SecureText as a preferred way to communicate,

not everyone in the hospital used the app. Jiminy, who worked in the cardiac surgical unit, described how the physicians and nurse practitioners in her unit did not use SecureText, so she had to find other communication avenues to get consults from her team:

When I started in this role, I asked them do you all have SecureText and they said no. Then they go, what's your personal number? So I gave it to them... [For child life orders,] I get verbal consults [face to face] or they'll call my HospiPhone. Or my nurse practitioners, they'll text my personal [cell phone] number. And a lot of times it's a very ambiguous message of like, 'Room 222 could use you,' and when we find each other [in person] we get more of those detailed reasons.

Thus, Jiminy *learned the ICTs* of her interprofessional counterparts. She also *adjusted her ICT repertoire*: because her cardiac colleagues did not have access to SecureText and they preferred to use personal text messaging, Jiminy incorporated personal text messaging with her interdisciplinary teammates into her ICT repertoire.

ICTs operating in different ways. Participants also described how they sometimes had the same ICTs as other professional groups, but their tools were on different networks. In surgery, for example, medical specialists such as anesthesiologists carried HospiPhones, but their HospiPhones did not connect to the same network as the child life HospiPhones. When similar ICTs did not connect, child life specialists described how they had to work around these differences, which posed an efficiency challenge for participants. Consider the following interaction among surgery child life specialists Meredith and Jiminy, as they described the struggle of accessing specialists via HospiPhones:

Meredith: Something that's really frustrating is our [specialist] staff carry HospiPhones, but they're on a different network. You can't call them directly through your HospiPhone except by doing it like you're

calling an outside number—like dialing [an extension] and then dialing [the rest of their HospiPhone number]. So it's super frustrating because we can't call our nurse anesthetist or anything unless we do it that way. And a lot of times it ends up being a game of telephone [with specialists on different HospiPhone systems]. They see one of my nurses and they say, 'Hey, can you call Child Life for that room?' So my nurse calls me, and I'm like, 'Well, what do they need? I already saw that kid.' [The nurse is] like, 'I don't know. They just walked by and said call you.'

Jiminy: And that turns into a bigger issue. It's so much harder to do the thorough and right thing that I feel like it stops a lot of that communication still, like Meredith was saying, of going through [a nurse] and then calling back. So then if she tries to call directly and the amount of time it takes to communicate, you could have seen another kid. It's really hard to justify [communicating with the specialists] when they're not easily accessible.

Within this interaction, we see how child life specialists felt they had to *play “a game of telephone”* due to these ICT repertoire misalignments. Here, they worked around these network limitations by tracking down hospital professionals through lengthier communication chains. These workarounds led to feelings of decreased efficiency and potentially compromised quality of patient care.

Having different ICT preferences. Even when child life specialists carried the same ICTs as their interdisciplinary colleagues, their communication counterparts sometimes expressed different preferences for which devices to use. Communicating orders through the EHR was one example. The primary way child life specialists accessed the EHR was through their office desktop computer. Their offices were located outside the hospital units in which they worked, and because of their mobile workflow, they did not visit their offices frequently (only one or two times per day), as their daily task list had them roaming the

hospital for most of the workday. Furthermore, child life specialists did not have automatic login access to the computers located in the hospital units. As Quinn, an imaging child life specialist described, “It’s hard because I can’t get onto the unit station computers. You have to be an approved unit user.” This accessibility issue became especially problematic when other professional groups, like residents, used the EHR to communicate patient orders. Consider this exchange between Acute Care child life specialists Angela and Lola:

Angela: The residents were using [the EHR] a lot and we were having communication issues with them because they were putting orders in the chart, and since we're not always at our desk, we weren't always getting the orders in a timely fashion... So we talked with them and asked that they SecureText us any time they placed an order since we're not at our desk that much.

Lola: Yeah, our nurses would ask us if we have SecureText previously. We would say, ‘No,’ and they would have to call us. The rest of the hospital, like Angela said, works on the EHR order system, but we don't sit on our computers waiting for our EHR order. This way [with SecureText], we're easier to reach.

As Angela and Lola described, one way they worked around ICT use differences was by *having others’ adjust their ICT use*. As the providers already used SecureText, having them text the orders instead of only inputting in the EHR better supported Acute Care child life specialists’ workflow, as they were seldom at their desk and did not have access to the unit computers, and it ensured they received the patient orders in a timely manner.

Yet even with SecureText helping overcome differences in EHR use for child life specialist and physicians who worked in Acute Care, SecureText use and preferences were not always aligned across the hospital. Lisa, a cross-coverage child life specialist, outlined

her experience with the preferences of Emergency Department (ED) physicians, a professional group that—like child life—also had SecureText and HospiPhones: “It's hard because preferences vary across the hospital. Like in the ED, [the physicians] use their HospiPhones [most frequently] and they prefer a phone call [as the primary form of communication], whereas I prefer a SecureText because it can include more information.” Thus, even though Lisa appreciated the consistency of communication in the Emergency Department through the HospiPhone (as described in the repertoire alignment section), she worked in units across the hospital and found SecureText to be her ideal form of communication. Yet she felt she could not enact this communication preference in the Emergency Department, as the physicians expected HospiPhone calls over SecureTexts.

Thus, participants found it challenging not only to consider the devices that their interprofessional colleagues carried, but also their interdisciplinary teammates' expectations and patterns around ICT use. In these instances where their preferences clashed with their interprofessional colleagues' use expectations, child life specialists like Lisa described how they *adjusted their own ICT use* to match with their interprofessional counterparts' preferences, such as calling the physician on the HospiPhone rather than sending the physician a SecureText.

Rehabilitation services. For rehabilitation services, within-group ICT misalignment translated to issues communicating with other professional groups across the organization. In the next section, I describe how participants who carried the HospiPhones and those without HospiPhones both experienced repertoire misalignment and how they worked around this mismatch challenge.

Repertoire misalignment: HospiPhone carriers. Because HospiPhone numbers were listed in the hospital units as the primary way to reach each rehabilitation subgroup, and providers did not have “a consistent point of contact” for their patients (given the rehabilitation group shared patients as opposed to assigned a patient to one person, those who carried the HospiPhones described these ICTs as the “catch-all devices,” and they felt it was their responsibility to *dispatch and bridge communication* when carrying the HospiPhones for the group, given the HospiPhones were the central communication for the group, and their rehabilitation teammates had limited ICT access. First, HospiPhone carriers in rehabilitation services shared how they found themselves answering generic questions that were not necessarily related to their work. Tammy described the occupational therapy HospiPhone as follows:

On all the units, this is how other people know how to get ahold of the OT [occupational therapy] department. These are usually just generic OT phone calls, so then you end up answering questions and taking time out of your day for calls anyone could answer. So it's, that's one reason I wouldn't want to carry [the HospiPhone] because it can be more time consuming. You're answering calls and managing things that aren't directly related to your personal day. Like, we have therapists that go to Main Hospital [the largest hospital in the city's health care network]. So I'll get a call from the NICU at Main Hospital. I don't work in the NICU here [at Children's Hospital], and I don't go to Main Hospital [to work], but I'm answering questions about a baby there [at Main].

In addition to answering generic rehab questions from across the network, individuals carrying the HospiPhone had to direct the calls when the person calling asked for a particular individual in rehabilitation services. As physical therapist McKenna described:

Every unit for PT [physical therapy] has my number. So they may have rehab-specific questions about a patient a particular PT is seeing. They may call about outpatient questions that our outpatient PT needs to answer. They may call about wound care questions for Clarabelle [physical therapist]. And I have to direct all of that.

Thus, those carrying HospiPhones described how they spent much of their day “filtering” and “transmitting” phone calls. As physical therapist Shannon shared, “When you carry [the HospiPhone], you often spend extra time filtering phone calls to other people or managing something that maybe shouldn't have been on your plate to begin with. But now that you've heard it, you have to deal with it.” Consider also this focus-group exchange between occupational therapist Bonnie and physical therapist Clarabelle, as Bonnie shared about a difficult time she had when she carried the HospiPhone:

Bonnie: Rehab Services had someone covering who only worked a couple days a week. She didn't have any portable communication method or desk phone. She had no way of communicating with anybody. So, I'm literally doing all of the communication and relaying it for her. So I talk to the PA [Physician Assistant] who wants this certain type of splint. I get all the information that I think she needs, but I don't specialize in making those types of splints so I don't actually know [what details she actually needs], but I get everything that she probably needs [information-wise]. Then she tells me, ‘Can you ask the PA if they want this, this, and this?’ Okay, I'll call the PA back, leave a message, or maybe get a hold of them. [Then I ask the PA], ‘Okay, do you want this, this and this?’ ‘No, and can you also tell her this?’ It's just constant tag, and I was even going home and she's still working on [the splint], so I'm still relaying the communication for her because she had no other way to communicate with them.

Clarabelle: You could actually visibly see your blood pressure rising as you're explaining that situation.

Bonnie: It's so frustrating!

As we can see in this interaction, individuals carrying the HospiPhone felt it was their responsibility to bridge the communication gap between rehabilitation services and the rest of the hospital.

Repertoire misalignment: Individuals without HospiPhones. Participants without HospiPhones described the challenge of not using the same ICTs as their interdisciplinary contacts. As physical therapist Ginger shared:

Not only do we all have different devices in our group, but the different people we interact with like nurses and physicians also can use different things. It can be hard if you don't have a HospiPhone, because a lot of people have those and rely on those to reach one another.

When participants without HospiPhones had to reach an interdisciplinary stakeholder that had an incompatible ICT repertoire, participants described how they *find a matching ICT*. They did this in two ways: by creating a communication chain with a rehabilitation colleague carrying a HospiPhone or by anchoring down near a landline phone.

Use a teammate's ICT. First, HospiPhone-less participants described how they would use a teammate's ICT that aligned with their interprofessional contact's repertoire (similar to child life participants' report of surgery specialists' communication behavior). For example, physical therapist Zoe, who did not use SecureText, described how she had a colleague SecureText a physician on her behalf: "I don't have SecureText, so it's happened before where I needed to get ahold of a physician or nurse, and I was in the office with Vanessa [a physical therapist], who has the app. I asked her if she could text the

physician for me, and that helped because it got me a quick response [from the physician].” However, as this quote shows, Zoe had to be in the same space as her rehabilitation colleague to be able to use her SecureText. Furthermore, the use of other rehabilitation colleagues’ devices could create a complicated communication chain. Consider this exchange where Bonnie—who used SecureText as her primary and typically did not carry a HospiPhone—described how she communicated with an interdisciplinary contact who did not use SecureText:

- Bonnie: Sometimes, I will give [the person who I need to contact me] the Occupational Therapy HospiPhone number, which another OT [occupational therapist] carries, so then she [the OT] can text me. I’ll text that OT and say, ‘Hey, heads up. This person’s going to call you. Can you let me know [when they call]?’ And vice versa, when I’m carrying it she will also sometimes ask me, ‘Heads up, the nurse from the NICU might call. Let me know when she wants me to come see the patient.’
- Clarabelle: And then you [as the HospiPhone carrier] have to text Bonnie to let her know that the person called and give her their phone number.
- Bonnie: Sometimes I will tell [the person I need to reach] my desk phone number if I think, ‘Oh, I’m going to be sitting and documenting for the next hour. I should be here.’

As this conversation demonstrates, Bonnie—who had SecureText but did not carry HospiPhone—bridged the communication gap with other disciplines through a multi-step process: she gave out her colleague’s HospiPhone number; she sent a SecureText to her rehabilitation colleague that she was expecting a call; and she had her colleague text her back with the interdisciplinary stakeholder’s phone number once that person called the HospiPhone. Yet this method was dependent on her rehabilitation colleague also using

SecureText (and not everyone in the rehabilitation group used this tool), and it created additional responsibilities for the colleague to transmit communication to Bonnie.

Give the contact a landline phone number. Other individuals without HospiPhones described how they would give contacts the phone numbers for their office desktop phones (as occupational therapist Bonnie suggested above), but this method only worked when they knew their upcoming tasks involved stationary activities in their office like documenting, which was not a frequent part of rehabilitation specialists' workday. Thus, many participants who used the desktop phone method found themselves "anchored" to the desk in anticipation of a phone call. Participants also described how they would use landline phones located on the hospital units to connect with others, but using these phones also posed challenges, such as having to wait by the unit phone for a callback and returning phone calls going to the wrong unit phone. Physical therapists Sienna, Clarabelle, and McKenna described this situation:

Sienna: If [my contact doesn't] have SecureText and they want a number to call me back at and if I'm sitting at a different desk [on a unit] where I don't have my [regular] desk phone, then I either wait there until they call me back or eventually leave and maybe call them back and give them a different number. It's such a lengthy process because there are five different methods of regular communication.

Clarabelle: And also, if you call from one of the phones from the unit that you're working on, if they call back that number then it goes to the general phone for the unit [and not the phone you called from]. So then the clinical assistant on that unit will answer the phone and my caller will say, 'Hey, I'm calling back Clarabelle who just called me at this number.' [Then the clinical assistant replies,] 'I don't know who that is. Bye.'

McKenna: Because it doesn't go back to the phone you just called from, so even if you were still sitting there documenting, it'll go to the main unit phone. I might see who is answering the [main] phone and be like, 'I'm expecting a call from doctor so-and-so. I'm waiting for a callback' [so the person knows to transfer the call to me and not hang up]. It's not a super efficient process.

Bypass ICTs. Other participants who experienced incompatible ICTs opted to bypass technology completely when communicating across professional groups. For example, Physical therapist Zoe—who only carried a pager—elaborated that she searched the hospital space not only for her rehabilitation service colleagues, but also hospital employees in other professional groups, when a teammate who carried a HospiPhone or used SecureText was not nearby. As she stated, “If I have to contact physicians, I’ll just go in the morning when they’re rounding [on patients] and find them. If I have a question about something, I'd rather talk to them in person anyway.” Thus, although it could be time-consuming to physically go and hunt for people in the hospital, Zoe justified this decision based on her preference for face-to-face conversations and the inefficiency she perceived in going through the process of tracking down the person’s contact number, finding a phone to reach them, and hoping that the person will answer.

Social work/case management. Like child life and rehabilitation specialists, ICT similarities and differences across the hospital played a role how social workers and case managers perceived and used their ICT repertoires. Participants in this professional group were highly integrated into their interdisciplinary units, and they often had to communicate with multiple stakeholders, such as three or four physicians, about a single issue. They shared how it was important to have an ICT that let them communicate with multiple

parties, and SecureText was their preferred way of accomplishing this. Participants in this group communicated not only with their interdisciplinary unit, but they also interacted with other organizations on a regular basis, such as Home Health and Child Protective Services. As these interactions took place through phone calls, and these organizations were difficult to reach, these allied health professionals described how they liked to keep their phone lines clear for external organizations and preferred to use SecureText to communicate with their unit colleagues. I next describe how repertoire alignment—in terms of SecureText use—and repertoire misalignment—in terms of access to ICTs and preferences to use other devices—impacted social work/case management.

Repertoire alignment. As described in Chapter 4, SecureText was social work and case management’s primary method of communicating with their interdisciplinary units. They described SecureText as fostering stronger accessibility to different professional groups. Social worker Claudia shared the following:

Before SecureText, you had to call the operator, then they’d transfer you to the doc. Then hopefully they’d answer, but if they didn’t, you’d leave a message. And if they didn’t call back, you repeat the process. It was so time consuming. With SecureText, you just type their name in, and then send them a message. It’s a direct link, and that makes our communication so much easier.

Furthermore, as social workers and case managers had to coordinate with multiple interdisciplinary colleagues for their tasks, such as patient discharges, participants described how they used group messaging to coordinate with their different

interdisciplinary stakeholders. As Neonatal Intensive Care Unit (NICU) social worker Polly described:

You can do group messaging [in SecureText]. Because we work with so many different providers, sometimes it's easier [to SecureText] rather than me picking up the phone and calling each provider separately. It saves a lot of time. I can just include everyone in that one message, and they all get it. We can respond to each other's questions, so it's a good group method to use.

Oncology case manager Marty echoed Mary's sentiments when describing how she used SecureText with her interprofessional contacts on the oncology unit:

Using SecureText with my unit is wonderful. We did a patient care conference recently, and I was able to set up a group texting thing, so I could message the whole group. Before we had SecureText, you had to call each doctor individually. 'What day can you go [to the meeting]? Oh, you can go Monday at 1:00? OK.' Then you call somebody else and they go, 'Well, I can only do Tuesday at 2:00.' Then you have to go back and re-coordinate. And then things can get lost in the weeds. So SecureText helps with that. We all get the same message, can see other people's responses, and answer right there instead of sending out separate messages then trying to remember what people said.

Thus, not only did using SecureText help this professional group save time by cutting down the number of messages they had to send, but it also helped ensure the interprofessional care team was on the same page by sending one message and cutting down on inconsistencies and miscommunication that could potentially arise over the course of multiple phone calls.

Repertoire misalignment. Yet challenges arose when other professionals did not use SecureText. As case manager Joy explained, "Most of the providers are on SecureText,

but not all of them use it. You type the name in the search, and if it doesn't pop up, they don't use it. So when it comes to the people who don't, you have to find them another way." Social worker Polly echoed, "There are lots of technology routes you have to go down to get the information where you need it to go." When an interprofessional colleague did not use SecureText, social workers and case managers described how they *tried another ICT* that fell within their repertoire. Participants stated that phone calls were the next step when SecureText was not an option. To find someone's phone number, participants had to log onto a desktop computer, go into the hospital intranet, and search through the hospital's contact directory. Not only was this time consuming and required participants to be at a desktop computer, but there was also a possibility that the number listed was outdated and/or the person would not answer.

In addition to being frustrated with phone calls because of the trouble of the online directory, social work and case management preferred to not use their phones for internal communication because of the nature of their roles. As mentioned previously, much of their time was spent on call hold with Child Protective Services (CPS) and insurance companies, or they were wrapped up in sensitive face-to-face conversations with families. Case manager Joy explained the challenge of using phones to reach interprofessional contacts within the hospital:

SecureText saves us time from tracking down doctors, but some doctors don't have it. [When you have to use the phone to reach them], you're on the phone waiting for a doctor to call you back, paging the doctor. Maybe that doctor's not available and then you would be doing that for the next person and just trying to find out [who is available]. It's best when you can just bypass the phone [to reach someone] because that's a lot of time wasted and phone-line clogging.

Table 5.2 summarizes the workarounds of allied health professionals when ICT repertoires did not align with other professional groups in the hospital. Next, I show how participants described their communication load in relation when communicating across professional groups via their ICT repertoires.

Professional Group	Type of Misalignment	Workaround	Empirical Example
Child Life Specialists		*Drew from previous knowledge	Cindy remembered who worked in the outpatient clinic and what ICTs they used when realizing inpatient and outpatient had different EHRs.
	*Used different ICTs	*Learned others' ICT repertoires	Jiminy asked her cardiac surgery colleagues what ICTs they used and found out they did have access to SecureText.
		*Adjusted ICT repertoire	Jiminy adjusted her ICT repertoire to include personal text messaging so that she could communicate with her cardiac surgery teammates.
	~Same ICTs working in different ways	~Played a "game of telephone"	On the surgery unit, providers had HospiPhones, but they were connected to a different network. Child life communicated through the nurses, who communicated the message to the providers and vice versa.
	^Same ICT, Different Preferences	^Had <i>others'</i> adjust their use	Acute Care child life specialists asked physicians to message them in SecureText with patient orders instead of only communicating orders through the EHR.
Rehabilitation Services		^Adjusted <i>their</i> use to match colleague	Child life specialist Lisa communicated with Emergency Department physicians through her HospiPhone despite her preference to use SecureText.
	*HospiPhone as "Catch-All Device"	*Dispatched and bridged communication	Physical therapist McKenna filtered HospiPhone calls to the right rehabilitation specialist according to who was treating the specific patient being inquired about.
	~Used different ICTs	~Used a teammate's ICT	Physical therapist Zoe used her colleague's SecureText to message a physician.
Social Work/Case Management		~Gave the contact a landline phone number	Occupation therapist Bonnie gave a physician an office desk phone number and "anchored herself" to the desk in anticipation of the call.
	Used different ICTs	Tried another ICT within their repertoire	When an interdisciplinary colleague did not use SecureText, social worker Polly attempted a phone call next.

Table 5.2: Workarounds of allied health professionals when experiencing interprofessional ICT repertoire misalignment

Communication Load

In addition to discussing their organizational roles in relation to ICT repertoire (mis)alignment with their interprofessional colleagues, participants also described how their interprofessional communication load hindered and helped their work when using their ICT repertoires. Child life specialists and the social work/case management group both described a sense of overload in relation to interprofessional communication, while the rehabilitation group described a mixed communication load according to whether they carried the HospiPhone. I describe each allied health group's perceptions of interprofessional communication load next, as well as how they felt challenged and/or supported by the communication load.

Child life specialists: Communication overload. Similar to Stephens and colleague's (2017a) findings, participants in child life described how they "carried too many ICTs." At a minimum, child life specialists had three devices on them at all times: their HospiPhone, their personal smartphone for SecureText, and a tablet for patient distraction and education. On some days, they were also responsible for carrying the emergency pager. Child life participants described the physical burden of carrying at least three ICTs. They shared how they did not have enough hands nor pockets, and they stated how "exhausting" and "frustrating" it was to be responsible for so many devices to communicate across the hospital.

Child life specialists also described feeling overloaded by *learning others' ICT repertoires*. As other hospital professionals had different access to ICTs, different expectations for use, and diverse workflows, participants described a whiplash they

experienced in trying to keep up with ICT differences across the hospital. This was especially challenging when they covered other hospital units. As Helen, a day-surgery child life specialist, stated:

We have so many different communication tools that sometimes you're getting things via email and SecureText. You're getting it in so many different formats. That can be a little overwhelming. Unit by unit, it really depends on what the staff there uses. So if you're covering multiple units, it's hard to know [which devices to use]. Certain staff rely more on SecureText whereas some staff, like my surgery staff, don't have SecureText at all. So it's different unit to unit. That can pose a challenge sometimes because if you're communicating with different units or covering other areas, it's hard to know what the best way to [communicate] is.

Thus, not only did child life specialists feel overwhelmed in “getting things in so many different formats” given the diverse tools used across the hospital, but they also felt it was their responsibility to learn who uses what across the hospital given that they may have to cover one of their child life colleagues.

Yet child life specialists also recognized how their expansive access to ICTs gave them more variety in contacting people when others also used the same ICTs, similar to previous findings on combinatorial ICT use (Stephens, 2007; Stephens et al., 2013; Stephens & Rains, 2011). As Jiminy shared, “If I miss a call but I have a SecureText [and my contact also uses both ICTs], I can just send them a text and see what they need instead of spending my time calling a bunch of people back.” However, participants described how it could be challenging to communicate with others who did not have the same opportunity of phone calls and combinatorial ICT use. Lisa, an as-needed child life specialist, described this situation: “Some services only use SecureText and they don't have

HospiPhones. Sometimes they're not there to read [the SecureText message], or sometimes we just want to call them and talk to them. [When we want to call] there's no clear way to access them, unless they give me an extension.” Thus, when combinatorial ICT use was not an option for other professional groups, child life participants described how they had to circle back to learning the different ICT repertoire of their interprofessional contact.

Social work/case management: Communication overload. Like child life, the social work/case management group felt they, too, used too many devices. As social worker Gwen described, “My pants are falling down because the devices I carry are so bulky and heavy. I have to make sure my pants are double knotted so they’re not falling down when I’m working.” When carrying multiple devices, social workers and case managers described one of their greatest workplace challenges was when “everything goes off at once.” As social worker Flora shared during an observation session, “You’re emailing [at your desktop], your HospiPhone's going off, your SecureText is dinging [on your personal phone]... When everything is going off, it can be overwhelming.”

Yet a big part of the job for social work and case management was multitasking, and they described how having multiple devices allowed them to communicate and coordinate with various stakeholders near simultaneously. Flora continued:

I’ll find myself on the [desk landline] phone for a CPS referral, and I can be on hold for 30 to 45 minutes. I can put [CPS] on speakerphone, and while I wait for them to answer I can type my [EHR] notes or I can SecureText people to let them know I’m making a CPS referral, like consultants. I can also call the nurse on my HospiPhone while I’m on hold and say, ‘Just so you know, I'm making the CPS referral, and I'm not telling Mom yet until I know when CPS is coming.’ So that can be helpful.

Social work and case management also described the advantage of having multiple modes of communication when one or more of their devices did not function properly, similar to Stephens' (2007) argument for productive redundancy. Social worker Polly explained the advantage of HospiPhones when her personal phone cell service was not functioning in the hospital:

My cell phone service is really spotty in the hospital. And so sometimes I might be on the unit and I come out and I have seven SecureTexts. So I like having my HospiPhone because this HospiPhone is always going to ring in here. If they needed to get ahold of me and my texts aren't sending, then I can just give me a call.

Rehabilitation services: Mixed communication load. Physical therapists and occupational therapists described mixed communication loads when communicating interprofessionally. Again, these differences centered on whether they carried the HospiPhone for their team.

With a HospiPhone. Because HospiPhones served as the primary hub of communication for within-group and across-group communication, those carrying the HospiPhone described how they “were constantly distracted,” supporting Stephens and colleagues (2017a) communication overload typology. By bridging the communication gap between their rehabilitation colleagues and the rest of the hospital (as described in the repertoire misalignment section), participants shared this led to heightened interruptions and feeling unable to focus on their own work tasks. As physical therapist McKenna explained:

It interrupts our workflow a lot because I need to attend to that one task [that I'm currently doing]. I'm not a great multitasker, so then I need to step out of my current situation to appropriately respond to this person [who called on the HospiPhone]. Or you might just need to close what you're doing [on a computer] so that you can open something else to look up a chart to see who's treating the patient that they're looking for. Or call the rehab tech and say, 'Hey are you in the office? Can you look to see who's seeing such and such patient and tell them to call this number.

Without a HospiPhone. Those who did not carry a HospiPhone described the “freedom” they had from the responsibility to field calls for the team. As occupational therapist stated, “Sometimes, it can be nice to just do your work and not have technology there to distract you.” Yet every rehabilitation specialist in the study without a HospiPhone felt they did not have enough ways to be reached and desired their own portable calling device. For example, each rehabilitation specialist had a listed phone number in the online hospital directory. These phone numbers were linked to the HospiPhone numbers for the rehabilitation specialists who typically carried the HospiPhone and the office desktop phone numbers for rehabilitation specialists who usually did not carry HospiPhones. Participants without HospiPhones described how they thought other professional groups did not understand their listed phone numbers in the hospital directory were desk phones they did not check frequently. These participants also felt they did not have an urgent form of communication if an emergency arose. As physical therapist Vanessa described:

The only phone I have is one that sits at my desk. There are times I check my voicemail, and a nurse called me and left a message. It's like they thought my [desk phone] extension was a regular, portable HospiPhone number. And so that's why I really want a HospiPhone so I can have a regular means of communication. In urgent situations, you can call me and I'm going to hear it no matter what.

Table 5.3 summarizes how allied health professionals studied in this dissertation described their ICT repertoires as supporting and/or challenging their role boundaries when communicating *across* professional groups.

In all, participants described how they made sense of their ICT repertoire through organizational boundaries—namely, boundaries identified within their workgroup in relation to their ICTs, and boundaries they experienced when communicating with their interprofessional stakeholders via ICTs. Given their and others’ access to ICTs, expectations of ICT use, and workflows in relation to ICT use, participants described how they experienced repertoire (mis)alignment and differing degrees of communication load, both when communicating within their professional groups and when interacting with interdisciplinary colleagues. Aligned repertoires supported communication within and across professional groups, while misaligned repertoires made collaboration challenging and pushed allied health professionals to find different avenues of communication through workarounds. Furthermore, participants experienced varying degrees of communication load within and across groups: they experienced overload through using too many ICTs, multiple distractions, feeling responsible to respond, messages piling up, feeling overwhelmed with information, and learning the others’ ICTs and use routines when repertoires were misaligned. Communication underload occurred when participants with less access to ICTs felt they had limited avenues to reach their professional group teammates and interprofessional colleagues, especially in urgent situations. “Ideal”

communication loads occurred for professionals who had aligned ICT repertoires and clear use patterns for each tool in the repertoire.

In addition to experiencing organizational role boundaries through their ICT repertoires, participants also described their ICT repertoire use in relation to their professional roles. I describe these boundary experiences next.

Professional Group	Repertoire (Mis)Alignment	Communication Load
Child Life Specialists	<p>Supported Interprofessional Comm. when Repertoires Aligned</p> <ul style="list-style-type: none"> • Acute Care – used SecureText to communicate with unit • Emergency Department – used HospiPhone to communicate with unit <p>Challenged Interprofessional Comm. through Misaligned Repertoire</p> <ul style="list-style-type: none"> • Used different ICTs • Same ICTs worked in different ICTs • Same ICT, different preferences 	<p>Overload</p> <ul style="list-style-type: none"> • Challenge: <ul style="list-style-type: none"> ○ Used too many ICTs to communicate with unit colleagues • Support: <ul style="list-style-type: none"> ○ Combinatorial and redundant communication options
Rehabilitation Services	<p>Challenged Interprofessional Comm. when Repertoires Misaligned</p> <ul style="list-style-type: none"> • HospiPhones as “catch-all devices” • Used different ICTs 	<p>With a HospiPhone:</p> <ul style="list-style-type: none"> • Overload challenge - many distractions <p>Without a HospiPhone:</p> <ul style="list-style-type: none"> • Load support– free of interruptions without ICTs • Underload challenge - did not have an urgent mode of communication to reach others or be reached
Social Work/Case Management	<p>Supported Interprofessional Comm. when Repertoires Aligned</p> <ul style="list-style-type: none"> • Used SecureText as primary way to communicate with units <p>Challenged Interprofessional Comm. through Misaligned Repertoire</p> <ul style="list-style-type: none"> • Used different ICTs (i.e., <i>not</i> SecureText) 	<p>Overload</p> <ul style="list-style-type: none"> • Challenge: <ul style="list-style-type: none"> ○ Used too many ICTs to communicate with unit colleagues • Support: <ul style="list-style-type: none"> ○ Ability to multitask and multicomunicate ○ Productive redundancy

Table 5.3: The relationship between ICT repertoires and across-group communication for allied health professionals.

PROFESSIONAL ROLE BOUNDARIES

While organizational boundaries relate to parameters individuals experience in relation to their role as an organizational member (i.e., an employee at Children's Hospital), professional boundaries are defined as parameters experienced in relation to a person's professional role and identity. In other words, while participants experienced organizational boundaries through the rules and norms of this particular hospital in which they worked, participants described a separate boundary in which they related their ICT repertoire to their occupational identity as a child life specialist, a physical therapist, an occupational therapist, a social worker, and a case manager. Participants encountered two professional boundaries when using ICT repertoires: patient perceptions and professional role support.

Patient Perceptions

First, participants in child life and social work/case management described patient relationships as core to their professional identities. Participants in these professional groups shared that "being present and attentive with the patients and families" was integral to their roles, and they expressed concern in using their ICTs in front of patients and their families. I next describe how these two professional groups perceived how using their ICT repertoires potentially violated patient perceptions and compromise rapport building.

Concerns about patient perceptions for child life specialists. For the child life team, patient and family perceptions were particularly poignant when it came to using their

personal devices, as they feared patients and families perceived they were using mobile phones for personal rather than professional reasons (see Stephens, 2018, for a similar finding). Patricia shared the following:

I feel like in front of a family, if I pull my personal cell phone out of my pocket, they don't know that I'm potentially reading or responding to a professional text. It just looks like I'm texting someone or looking at my phone. For all they know I'm on Instagram or something, and I don't want that perception in front of families.

Child life specialists felt highly conflicted when it came to using personal devices in spaces visible to patients, be it in patients' rooms, on the units, or in the hospital hallways. Participants were unsettled by how these devices could impact patients' perceptions of their attention and professional demeanor, yet on the same token felt compelled to use their personal devices in the hospital because SecureText was the primary mode of communication for their work group and interdisciplinary team. Emily outlined these sentiments well:

For a large portion of my professional career, I've been told you don't have your personal cell phone out. You're not supposed to be on your personal phone. And I just left it on my desk. But now with this whole SecureText thing, I feel like I have to have it with me. What if there's a code on a unit or an emergency happens? But then I also feel that conflict that I feel like it looks unprofessional. I feel like even as antiquated as this HospiPhone is, families know that—well, I assume that they know that—this [HospiPhone] is not personal cell phone.

Like Emily, other participants described some devices as simply appearing more professional than others. According to participants, the material bulkiness of the HospiPhone did not look like a mobile phone that would be used outside of work. They

described how they would like to have organizationally issued devices that signaled “work use” as opposed to “personal use.” As Patrice stated, “I wish we had a hospital phone that we could text from and was labeled on the back and said the organization.” Participants felt symbols of organizational legitimacy, like a sticker of a hospital logo on the back of a smartphone, would better signal they were using cell phones for work purposes and help them maintain a professional image with patients.

Concerns about patient perceptions for social work/case management. Like the child life group, social workers and case managers described the professionalism boundary and ICT use in relation to patient perceptions. For this group, many of their conversations with patients involved sensitive conversations, and being professional in these moments was of utmost importance. As Gwen, an Emergency Department social worker, stated, “I’ll be in the middle of these assessments that are really sensitive or really intense and I’m getting calls... It does seem inappropriate when you’re in a conversation with either the patient or a parent about some pretty tough subjects to say, ‘Oh, excuse me, let me answer this phone right now.’” Claudia, an oncology social worker, echoed Gwen’s sentiments about the unprofessionalism of answering ICTs when with patients and their families:

We’re asking very personal questions, like let’s say I have a ten-day-old patient. I’m asking mom, ‘Do you have any concerns for post-partum depression? Do you know what that is? Did the birth hospital talk with you about it?’ It’s some pretty difficult questioning, so being able to focus totally on that person is important... If I’m on my phone, then that doesn’t come across as being a human, caring person. I’ve seen several different health care professionals keep the phone volume on [when they’re with patients]. I hear their SecureText make noise. I learned many years ago that if somebody is in the middle of telling you their very private story, your answering the phone is a sure way to shut them down.

Although participants wanted to prioritize patient and family conversations over their ICTs, the inability to discern the urgency of the call or text on the other end made it challenging to decide whether or not to check their ICT. Julia, a palliative care social worker, shared about this challenge with SecureText:

It can be really difficult if you're in the room with a family when your phone is blowing up. I try really hard to just ignore my phone when I'm in the room with a family. But with SecureText, you can't see what someone is saying [on the opening phone screen]. You just see 'Palliative Team has sent a SecureText.' When it gets to five or six [SecureText messages], I'm like, well, is someone else dying or do I need to leave [this patient's room] for an emergency? I feel like the only way that I know that is to look at my phone, and if I'm in with a family, that feels rude. So, it's hard. It's hard to balance being available all the time and the times when it is helpful and important to be available [via SecureText], and the times when like people are just texting nonsense, like, 'Is everyone going to lunch on Friday?' I'm having a serious conversation [with a patient] here. Get off the phone!

Here, Julia felt professionalism meant being respectful toward her patient and family by giving them her attention, but she also felt professionally responsible to her team in urgent situations. Receiving multiple SecureText messages signaled to her that their might be an emergency with her Palliative Care team, but there was no sure way of knowing that without pulling out her phone, clicking on the SecureText app, and opening her team's message thread.

Professional Role Support

Two of the allied health groups, child life and rehabilitation services, discussed the degree to which ICTs worked with their professional role and duties. I label this category

as *professional role support*. I first describe the professional role support of child life specialists in relation to their ICT repertoire, followed by rehabilitation services.

Role support with child life specialists. Child life described how their ICT repertoire helped them work across interprofessional boundaries and establish role legitimacy. As these specialists were trained to provide tailored psychosocial and emotional support for patients, they perceived their role as the first step for patient-centered and individualized care. As manager Danielle described, “We meet patients and families where they are, with central focus on normalizing the hospital experience. We bring pieces in that other team members might not think about that are important to families.” Participants explained their role as “taking the mystery out of the hospital for kids” and making the hospital experience more manageable for patients and their families. Meredith, a surgery child life specialist, claimed:

Sometimes I feel like I’m the primary voice for kids when it comes to what is going to help this situation keep the kid most comfortable. Because I’m the first one [who considers these factors]. If we have to start an IV on a kid, I’m going to be asking the nurse, ‘What’s the pain management plan? Can the child sit in the mom’s lap? How can we help? Yes, the goal is we have to start this IV, but how can we make this situation more comfortable for this child? And not completely traumatize this kid.’ And I feel like many times, I’m the only person in the room who is advocating for the child’s comfort. And it’s a constant conversation with nurses and physicians and residents [about] how do we do the procedure that we need to do and not completely traumatize the child or the family? We are the voice for that, and sometimes the only voice for that.

Yet a chief concern of many child life specialists was they felt other professional groups did not understand their role, and, consequently, did not consult child life or

leverage their expertise on patient cases. As Helen, a Trauma Surgery Unit child life specialist, described:

When nurses come on, they don't know what a child life specialist is or when they're doing procedures. They're not calling you. You have to seek them out and make sure that you're visible and that people know what your role is so that they call you because you rely on those [calls]. When I started on new units, I'd have to constantly go nurse to nurse and educate them about our role. It's a lot of vouching for yourself constantly to be able to do your job. Most people they just go in and do it, but we have to constantly educate all the time, which can be draining. But it pays off when they do start calling and everything.

For participants in Acute Care, SecureText was a way for them to more immediately interact with the interdisciplinary health care team. Without SecureText, they described being left out of important consultations. When the child life team adopted SecureText, those working in Acute Care units found their expanded ICT repertoire gave them not only a better way to communicate outside their professional group, but also a sense of professional legitimacy within the health care team. As Lola described:

There was a point clinically where I was the only one in my unit that didn't have SecureText. It was kind of like I was missing out on things. People would ask me [if I used SecureText] and I would have to say, 'No, I don't have it.' It was just hindering communication with that specific unit and group. Once I got it, it kind of legitimized me as a clinical staff member within that team.

Like Lola, other Acute Care child life specialists described how having a diverse ICT repertoire increased their accessibility to other health care professionals, in turn helping them feel more understood in their professional role and a more integral part of the patient care team.

Lack of role support in rehabilitation services. While child life specialists felt their ICT repertoire helped support them professionally through role legitimization, those in rehabilitation services described how their ICT repertoire often did not support the professional needs and requirements of their role. Participants talked about the connection between their ICTs and professional roles in relation to the HospiPhone. Those without HospiPhones felt their primary ICT, which was often an asynchronous tool such as texting or paging—did not align with their professional duties. Because the rehabilitation roles required hands-on assistance with patients, HospiPhone-less participants shared how they felt they did not have communication devices that supported their physical-labor needs. As physical therapist Naomi described:

It's really nice to have a phone when you're with a patient and you're hands on with them. There are a lot of kids that I have to be fully hands on. Let's say that they're sitting at the edge of the bed, and I'm hands-on with them and they start puking. If you have a HospiPhone, you can pull your phone out and do a one-handed call to the nurse. Or maybe I'm in the [rehabilitation service unit] gym and the same thing happens, and I just need to call a tech to come get a bucket for me... It's useful to have something where you can call. Whereas if I text the tech and ask them, then they might not get back to me for an hour or so, or I may not be able to text when I'm fully hands on.

As shown in Naomi's quote, those without HospiPhones felt the communication tools they carried, which were largely texting-focused, did not support the type of hands-on labor they performed as rehabilitation professionals.

Participants who typically carried a HospiPhone experienced other role support concerns. These individuals described how they spent a sizable portion of their workday transmitting calls to others. They labeled this type of work as "secretarial," which they felt

was not a part of their professional role. Additionally, within their group, strict legal requirements existed around the services for which the rehabilitation professionals could bill. The only time that counted toward billing was time in which the patient was treated. As it was typical for rehabilitation professionals working in the Southern US state of this study to receive hourly pay as opposed to a set salary, how they spent their time was of utmost importance to the compensation received.

At Children’s Hospital, rehabilitation service professionals were required to be “65 percent productive,” meaning 65 percent of their time had to be direct patient care in order for them to receive their hourly pay. This meant that time spent using ICTs—be it documenting in the EHR, sending SecureText messages to coordinate patient care, or answering HospiPhone calls—did not count as “productive” time for which they were paid. This requirement was particularly challenging for individuals carrying the HospiPhones, as they felt they spent a significant portion of their day fielding phone calls for the team. As Clarabelle, who carried the wound-care HospiPhone, described, “For every call I get, that’s not billable time for me. It makes it hard to want to answer the phone.” In turn, those carrying HospiPhones often described the conundrum they felt in answering the phone at the risk of being pulled into a lengthy conversation that could not be justified for compensation.

Table 5.4 summarizes the professional role boundaries of the three allied health professional groups in relation to their ICT repertoires. Child life specialists and the social work/case management group described how their professional roles were challenged through ICT repertoires by compromising patient perceptions. Namely, child life

specialists, social workers, and case managers described how using ICTs, particularly their personal phones, in front of patients felt inconsiderate and jeopardized patient rapport and trust. Yet child life specialists described how ICT repertoires also supported their professional roles by helping them establish professional legitimacy through SecureText use. Rehabilitation services described how they their ICT repertoire did *not* support their professional roles. Namely, their work required hands-on assistance, and those without HospiPhones were frustrated that they were not provided with a hands-free ICT. Participants who carried the HospiPhone described how fielding calls for their team did not support their professional duties, as ICT use did not count as billable hours for their work group.

As allied health professionals at the study site for this dissertation were encouraged or required to bring their personal phones to work, they encountered one final role boundary in relation to their ICT repertoire: a personal role boundary. I describe this boundary in the next section.

Professional Group	Patient Perceptions	Professional Role Needs
Child Life Specialists	Felt ICT repertoire challenged patient perceptions – using SecureText seemed inappropriate and contradicted their professional training to leave ICTs out of patient rooms.	ICT repertoire supported their professional roles by helping them establish role legitimacy with their interprofessional colleagues.
Rehabilitation Services	--	ICT repertoire challenged their role needs – HospiPhone-less participants needed tools that supported their hands-on workflow, HospiPhone users described how they could not count ICT coordination as billable time.
Social Work/Case Management	Felt ICT repertoire challenged patient perceptions - using mobile devices, such as HospiPhones and personal phones, in front of patients jeopardized rapport building and patient trust	--

Table 5.4: The professional role boundaries of allied health professionals when using ICT repertoires.

PERSONAL ROLE BOUNDARIES

The final way participants identified ICT and boundary concerns was through personal boundaries, or boundaries they experienced in relation to their personal preferences for ICT use. SecureText was a tool (required or optional) in every group's repertoire, and it was primarily used on participants' personal phones. As SecureText bridged work and personal lives, participants discussed the challenges they experienced in setting work- and personal-life boundaries through this tool.

Bringing Personal Life into Work Life

First, infiltration of personal life into work life occurred through use of personal mobile phones. Child life specialists, rehabilitation services, and social work/case management participants described the challenge of receiving personal messages while at work. I describe this concern for the three professional groups next.

Personal-to-work life concerns for child life specialists. Participants in child life described the distraction of receiving personal messages while using their phone for work purposes. During an observational session, Jiminy—who worked in cardiac surgery—received back-to-back a personal email notification and a personal text notification while typing in SecureText. “It can take your mind away from the work you’re doing,” she shared. Imaging child life specialist Rachel described a similar situation: “With my personal phone, what I struggle with is I’m getting alerts and stuff so I know when I get a SecureText, but it also goes off with my personal emails when I’m at work. It’s distracting for me.”

Additionally, all participants in child life described how they would rather not use their personal phones at work. However, despite this preference to not carry their personal device, participants felt they did not have a choice given their supervisor's expectation that the group use SecureText. As Emergency Department child life specialist Cindy described:

I feel like I *have* to have this [personal] phone with me. Which prior to SecureText, I would just leave this [personal phone] on my desk by my computer, go out, see my patient, and then I would come back. I didn't carry it with me all the time. I always had this HospiPhone, but not my personal cell phone. But now I have to carry it with me because if I don't, then I come back to my desk and then I have like 15 SecureTexts that I didn't see.

Thus, despite the distraction their personal phone could serve and the inconvenience of carrying an additional device with them, child life specialists felt they did not have a choice in using their personal phone at work.

Personal-to-work life concerns for rehabilitation services. Rehabilitation professionals also discussed their concern of personal life issues spilling into their work time, and like child life, many expressed their preference to not use their personal devices at work. As physical therapist Zoe described:

[My personal phone] is a huge distraction, or it can be. I have lots of friends who'll do group messages during the day and don't have the same sort of job that I do. When I turn on my phone at the end of the day, there'll be 26 messages. I feel like during the day, that would be distracting for me to do my job with all that [personal messaging] is going on at the same time.

Yet many in rehabilitation services felt the accessibility and convenience of SecureText, and not having a HospiPhone, outweighed using other ICTs as a primary tool. As physical therapist Vanessa described, "I [use my personal phone] all the time because

I'm here and I don't have [a HospiPhone]. There's no easy way for anybody to get in touch with me without SecureText, so I do use [my personal phone]. But if I had my choice, I would use a hospital-issued phone instead." Occupational therapist Tammy echoed Vanessa's comments: "Even though I'd rather not bring my phone to work, the SecureText app is just so convenient and easy."

A few rehabilitation service participants shared they were comfortable with using their personal phone at work, but—as child life participants and physical therapist Zoe shared—it could be distracting to receive personal-life text messages throughout the workday. Bonnie, an occupational therapist, described the following, "I don't mind using my personal phone [at work], but I've been getting texts all day that are personal texts, and that can be frustrating to see that with my work texts. I have to be constantly closing [personal text notifications] out all day." Furthermore, participants who used SecureText and personal phone text messaging to communicate with their rehabilitation colleagues described the hairiness of using two text applications when communicating about both work and personal matters. Physical therapist Shannon elaborated on this situation:

There can be some cross over with texting. Like I might be texting McKenna on SecureText about a patient, and then I'm like, 'Oh by the way, are you going to this thing later?' And then we transition our conversation to regular text. So that's interesting. I've had that happen a couple of times where you might end up talking about personal things in SecureText and you're like okay, let's stop using SecureText. And you have to make it a point to then change the conversation to a different app.

As Shannon's quote shows, rehabilitation specialists felt they had to be mindful to keep SecureText work-related, while personal texting could involve both work- and non-work matters.

Personal-to-work life concerns for social work/case management. Participants in the social work/case management group also described the impact of bringing their personal devices into work life. Most participants, like those in child life and rehabilitation services, described how they would prefer not to use their personal cell phones at work. Participants explained the challenge of not wanting to have SecureText on their personal phones but felt the convenience of the tool for communication outweighed the personal invasion they experienced. As oncology social worker Claudia shared, "I resent that [SecureText is] attached to my [personal] phone. I mean I'd much rather have it [on my phone than not have it at all] because it's convenient, but there are times when I'm getting messages both ways [from work and personal life] and it doesn't feel like I can put it away." During an observation session, rehabilitation social worker Nicholas received a text message from his grandmother and a call from his mother on his personal phone while at work. He looked over at his cell phone, rolled his eyes, and exclaimed, "This is *so* distracting! Can't I just do my work?!"

Other participants, like case managers Joy and Marty, described how having SecureText on their personal phone matched their personal preferences. As Marty stated, "I don't mind having SecureText on my phone at all. Really, it's better. I like being in the know. I like being able to reach people, and I want people to be able to get in touch with me easily. And my personal phone gets better reception in here than anything else I use."

Joy shared the following: “I like the fact that we can do that, put [SecureText] on our [personal phone], because you're not always in your office, sitting at your desk. I'm walking around sometimes, and I might be SecureTexting two doctors.” Thus, these individuals described how having SecureText on their personal devices helped them stay informed, increased their efficiency, and better aligned with their workflow. Yet some, like social workers Claudia and Mary, countered that they felt like the hospital should provide them with devices that supported workplace communication. From their perspective, it should not be the employee’s responsibility to bear the burden of providing ICTs for the sake of better cell service and sustaining workflow.

Bringing Work Life into Personal Life

In addition to personal life infiltrating work life through use of their personal mobile phones, participants also described the reciprocal relationship: bringing work home with them through their ICTs, namely SecureText.

Work-to-personal life concerns for child life specialists. Not only did child life participants feel like they had no choice in using their personal phone while at work, but they also experienced challenges around work-related personal phone use when off duty. As the child life group had different shifts throughout the day (such as one child life specialist working from 5 AM to 2 PM while another worked from 7 PM to 4 AM), participants stated they received SecureText notifications “at all hours,” even when they were off duty from work. These shift differences—coupled with SecureText as their primary mode of group communication—made it difficult for child life specialists to set personal and professional boundaries. As cross-coverage child life specialist Patrice

described, “With the different [child life specialty] shifts, it's really hard [to set boundaries]. I get off at 2 PM. A lot [of child life specialists] are still working from 2 to 4 [PM] so I get a ton of SecureTexts in that period of time. That's usually when I'm doing my schoolwork, and I'm like, ‘Ah, stop buzzing!’” Imaging child life specialist Rachel also described this scenario well:

Our department wants to really encourage that work-life balance, so they don't want to contact people at home unless they absolutely have to. But right now, if somebody sends a SecureText to our team, it's going go to all of us [in child life], including the people who are at home. So people are getting texts all day long while at work here, and then if they're coming in late night [to work] and they're using [SecureText], we'll get the same messages [while off duty]. So it could be something that we can't even help with, or isn't a question directed at us, but it would still be going off on our phone.

Participants described how messaging at all hours was not a problem prior to adopting SecureText. Before child life utilized SecureText for group communication, all after-hours needs were targeted via phone call toward specific people who could assist, namely the child life manager. Now that SecureText was the norm, participants felt like their personal time was compromised by work requests. Consider the following exchange:

Angela: I think it's over-communication.

Penelope: Because before [SecureText] we didn't have that [messaging issue]. If someone had a question over the weekend, they just dealt with it or figured it out.

Patrice: Or called the manager.

Meredith: Or called the manager back late if it was something that was pressing.

Penelope: Yeah, it's almost like we're all too available now.

Here, we see how participants felt like the entire team was responsible for handling questions through SecureText that were once tackled by their manager, regardless of whether they were on- or off-duty.

One child life specialist, Jiminy, also described bringing her interdisciplinary unit relationships into her personal life. She recently joined the new Surgical Cardiac team, and her teammates did not use SecureText. Jiminy shared her personal number with her surgical contacts when they asked her for it, and she described the challenge she faced in setting boundaries with her interprofessional colleagues: “I gave [my personal phone number] to them, but I shouldn’t have, because they text me at all hours because they’re here at all hours and I’m *not*. So that’s been tricky with building the program with the team because I want to be available, but not too available.” Thus, not only was Jiminy receiving messages at all hours from her child life colleagues through SecureText, but she also had her personal text messages, as she described, “blowing up” with work-related messages from her unit colleagues when she was off duty.

Work-to-personal life concerns for rehabilitation services. Unlike child life, rehabilitation professionals did not talk about work violating personal time or receiving work-related messages while at home. They explained all rehabilitation employees worked during the same shift, 8 AM to 4:30 PM, and as a “non-emergent discipline,” they described their responsibilities as things that could be done within their set work time frame. As

physical therapist Sienna shared, “We know our hours. The hospital knows our hours. So I don’t get texts about work stuff when I’m off.” Occupational therapist Tammy elaborated:

In our discipline, typically we're not really working with emergent things that need absolute, immediate responses. So if someone didn't get therapy today, it can almost always wait until tomorrow. There are some patients that do require therapy daily to meet the requirements of their hospital stay, but we make sure to prioritize those patients during the shift.

Furthermore, rehabilitation specialists elaborated that much of their collaboration occurred via HospiPhones, and they did not carry those devices home with them.

Work-to-personal life concerns for social work/case management. Although social workers and case managers appreciated the convenience of SecureText in their daily work, they described SecureText as an invasive tool that infiltrated their time away from work. Consider the following exchange among Claudia (oncology social worker), Julia (palliative care social worker), and Joy (post-surgical/respiratory case manager) when talking about using their personal phone when off duty:

Claudia: I wanted to text my whole family, and I noticed that there was a SecureText. Not that I answer it, but it just feels like *enough*, you know? Don't you see it's 8:00 at night? So... But I guess we have to [use SecureText on our phones].

Julia: Because sometimes I feel like people use SecureText for things that could just be emailed. Like this [message] is not urgent. This is after hours. Why are you texting me about this? You know I'm not here [at work]. It's 8:00 at night. Why am I still getting SecureTexts about things?

Joy: It's that issue where it's just too much, but then that's what everybody is using. That's what we're depending on nowadays is technology. So, could we do our job as efficiently if we didn't have this mode of communication? Probably not because everybody else is using it. You'd be the ancient person in the office in the dark about everything. People would be trying to get ahold of you. I mean, [SecureText] is definitely more beneficial than back in the day when we didn't have all this [technology] for efficiency of patient care and accuracy. But it's almost like there's not really any way around [being attached to SecureText].

As we see in this exchange, participants felt the convenience of SecureText came at the cost of constant connectivity. This constant connectivity was particularly frustrating for participants when they were being interrupted by SecureText at home for matters they perceived as non-urgent, when they felt another ICT—such as Julia's suggestion of email—would be more appropriate to use. Furthermore, Claudia and Joy's comments demonstrate that SecureText's invasiveness was something they felt they simply had to accept because of their desire to be accessible to other professionals in the hospital and the nature of hospital work. Polly, a post-surgical/respiratory social worker, further elaborated on this conundrum:

I believe in setting my limits. If you don't take care of yourself, then it spills over into your home life. And also, I don't want to be SecureTexting at night when I may have had a glass of wine, and I may not be thinking as clearly as I normally would because I'm not in my professional mode. When I get home, it is mom mode, it is wife mode, and I don't ever want to change that. And so that's why I don't like [SecureTexting during off time]. But I also understand that when you work in a hospital setting, you can't always have everything done by five o'clock. And it really doesn't take a lot of my time to answer on SecureText, but I don't want to make that a habit [when I'm off duty].

Another common theme when discussing personal and work boundary friction was the “burden of being the expert.” Social work and case management described themselves as “the keeper to all the answers” when it came to community information, discharge planning, and at-home care. Mary, a NICU and cross-coverage social worker, described the difficulty in maintaining personal boundaries when serving this gatekeeper role:

We give a lot of information and education to our medical team that other people [in the hospital] don't have. We're the experts on so many things out in the community that we have become an important asset to the health care team, which can be a burden sometimes when they call you at 7:30 at night and say, 'I wouldn't bother you unless it was important, but please just give me five minutes.'

Similarly, oncology social worker Claudia described an instance where she felt the burden of professional expectations during her personal time:

Last night, we had a pretty complicated kid, and I did what I needed to do before I left work. For whatever reason, the doctors didn't process [the team communication on the patient] or didn't get it until later in the evening. So at 8:37 PM, I get the SecureText from Dr. A, who is a major player, with her assessment and her feedback. Well, I hated that because once I leave here it's my time. I could choose to ignore it, and yet the SW and the professional in me felt a responsibility to answer. So that's the downside to [SecureText].

Thus, as these quotes demonstrate, participants often felt the push and pull between wanting to protect personal time away from work, yet feeling organizational or professional responsibility toward their within-group and interdisciplinary teams even when away from the hospital.

In summary, by being required (i.e., child life specialists) or encouraged (i.e., rehabilitation service, social work/case management) to bring their personal mobile device

to work, participants experienced a personal role boundary. In all three professional groups, participants described how SecureText on their personal phone was more convenient for their workflow, yet this came at a cost of violating personal preferences and being distracted by personal life messages when at work. Furthermore, when off duty, participants in child life and social work/case management described how work-related communication infiltrated their personal life, given their professional group or unit colleagues had different shift times, or they felt a burden to answer given managerial expectations or their professional expertise. Table 5.5 synthesizes the personal role boundary findings for allied health professionals.

Professional Group	Bringing Personal Life into Work Life	Bringing Work Life into Personal Life
Child Life Specialists	<p>Support:</p> <ul style="list-style-type: none"> SecureText on personal mobile made reaching people more efficient <p>Challenge:</p> <ul style="list-style-type: none"> Receiving personal messages on their mobile phones distracted them from their work Preferred <i>not</i> to use a personal device at work, but their manager expected them to use their personal mobile 	<p>Challenge:</p> <ul style="list-style-type: none"> Different shift times and expectation to use SecureText for within-group communication (i.e., all child life specialists) and personal text for unit communication (i.e., Jiminy) led to receiving work messages when off duty
Rehabilitation Services	<p>Support:</p> <ul style="list-style-type: none"> SecureText on personal mobile convenient and efficient to use <p>Challenge:</p> <ul style="list-style-type: none"> Receiving personal messages on their mobile phones distracted them from their work Because some also used the personal text messaging app for work, they had to separate out work messages from personal messages 	<p>Support:</p> <ul style="list-style-type: none"> As they had consistent shift times and all worked occurred within their shift, they did not communicate after hours.
Social Work/Case Management	<p>Support:</p> <ul style="list-style-type: none"> Personal mobile easier and more convenient for workflow <p>Challenge:</p> <ul style="list-style-type: none"> Preferred not to and “resented” use personal mobile phone, but felt convenience of SecureText outweighed personal preference 	<p>Challenge:</p> <ul style="list-style-type: none"> Interprofessional teammates on their units did not work the same shift and would communicate after hours via ICTs Felt a “burden of being the expert” and felt pressured to respond after hours via SecureText, even though their manager did not set expectations for them to communicate when off duty

Table 5.5: The personal role boundaries of allied health professionals when using ICT repertoires

CHAPTER SUMMARY

This chapter explored the boundaries participants encountered when using their ICT repertoires. Data analysis revealed that child life specialists, rehabilitation service professionals, and social work/case management encountered three role boundaries when using their ICT repertoires: organizational role boundaries, professional role boundaries, and personal role boundaries. *Organizational role boundaries* emerged when participants discussed their ICT repertoires through their role as an organizational member (i.e., a Children's Hospital employee). Participants in the three allied health groups had varied access to ICTs (e.g., shared versus individually assigned tools), faced different expectations around how to use their tools (e.g., firm versus flexible managerial expectations), and they had unique workflows that influenced device use (e.g., degree of mobility, shift time, and method of assigning patients). These organizational conditions impacted how participants perceived and use their ICT repertoires for work purposes, and these conditions supported and/or challenged organizational roles via ICT repertoires in two ways: repertoire (mis)alignment and communication load.

Participants faced *professional role boundaries* when their ICT repertoires reinforced and/or clashed with their professional duties as a child life specialist, physical therapist, occupational therapist, social worker, and case manager. Child life specialists and the social work/case management group described how their professional roles felt compromised through their ICT repertoires by violating what they considered to be appropriate device use in front of patients. Yet child life specialist explained how ICT

repertoires also supported their roles by helping them establish professional legitimacy with their interdisciplinary units through SecureText use. Rehabilitation services described how their ICT repertoires did *not* align with their professional duties, as their work required hands-on assistance and they could not count coordination and communication through ICTs as billable time.

Lastly, allied health professionals encountered *personal role boundaries* through their ICT repertoires. As participants in all three groups were required (i.e., child life specialists) or encouraged (i.e., rehabilitation services, social work/case management) to use their personal phones for work purposes, they shared how using their personal phone at work meant violating their own preferences and risking being interrupted by people from their personal life contacting them during work hours. When off the organizational clock, work life infiltrated child life specialists, social workers, and case managers' personal time, as they received SecureTexts or personal text messages from colleagues who had different shift times and workflows. Child life specialists described feeling a burden to reply given unclear managerial expectations to be responsive, while social workers and case managers felt pressure due to their professional expertise and domain-specific knowledge. Rehabilitation services did not report receiving work messages when off the clock, as they described their work as “non-urgent, they only saw patients during standard work hours (8 AM to 4:30 PM), and they did not feel organizational pressure to be responsive after hours.

The results of this chapter suggest incongruences among participants' role boundaries in relation to their ICT repertoires. As participants made meaning of their ICT repertoires, tensions emerged when their organizational, professional, and personal roles

presented seemingly incompatible demands of their ICT use. In the next chapter, I explore in more detail the incongruences that occurred across role boundaries—such as organizational roles and professional roles clashing in relation to ICT repertoires—and how participants took action when they perceived their organizational, professional, and personal boundaries were at odds.

Chapter 6: Experiencing Role Incongruence and Performing Boundary Work through ICT Repertoires

This chapter answers RQ3a: *What incongruences emerge across allied health professionals' role boundaries?* and RQ3b: *When faced with boundary incongruence, how do allied health professionals manage role boundaries vis-à-vis their ICT repertoires?* As a reminder, *boundary incongruence* entails turbulence between two or more boundaries (Kreiner et al., 2009), such as organizational demands clashing with perceptions of professionalism. To address incongruence, people can perform *boundary work* (Gieryn, 1983; Llewellyn, 1998; Nippert-Eng, 1996), which is defined as “the activities [an entity] engages in to establish and maintain boundaries and manage interactions across those boundaries” (Faraj & Yan, 2009, p. 604).

The results of Chapter 5 pointed to tensions that emerged when organizational, professional, and personal roles presented seemingly incompatible demands of participants' ICT use. For example, some felt they needed to use SecureText on their personal phone to meet the demands of their organizational role, but they also perceived personal smartphone use at work was improper from the standpoint of their professional role. Thus, this chapter explores how allied health care professionals—who have diverse access to communication tools, different expectations for use, and varied workflows across professional groups—experienced boundary incongruence and performed boundary work strategies when faced with organizational, professional, and personal role incongruences in relation to their ICT repertoires.

First, I describe the boundary incongruence and boundary work of child life specialists, rehabilitation services, and social work/case management through their ICT repertoire when faced with organizational and professional role incongruence. Then, I explain how participants in all three professional groups worked through organizational and personal role tensions when using their ICT repertoire. I conclude with a description of how one child life specialist, Jiminy, and individuals in the social work/case management group took action when they experienced personal and professional role incongruence vis-à-vis their ICT repertoire, followed by a summary of chapter findings.

ORGANIZATIONAL/PROFESSIONAL BOUNDARY INCONGRUENCE & BOUNDARY WORK

Organizational and professional boundary incongruence occurred when participants experienced discrepancies between their role as a hospital employee and their professional role of child life specialist, occupation therapist, physical therapist, social worker, and case manager when using their ICT repertoire. In this section, I explore the boundary work performed by each professional group when managing organizational/professional incongruence.

Child Life Specialists and Organizational/Professional Incongruence

Child life specialists described a sharp difference between the hospital's expectations for ICT use and what they believed appropriate ICT use looked like for their professional role. This professional group faced strict organizational rules on which ICTs to use and how to use them: their manager mandated that they were to have their HospiPhone and personal mobile phone on them at all times, and she asked that they be

responsive to all messages. This organizational request to constantly carry and answer their HospiPhone and personal phone felt incompatible with their sense of what constituted professionalism. Child life specialists saw themselves as “the primary voice for kids” when it came to children’s comfort in the hospital, and they described the importance of building rapport with—and giving undivided attention to—patients and their families. Bringing in a suite of technologies—and answering these devices when around patients to meet organizational demands—felt inconsiderate. Participants in this group described how personal mobile phones did not look professional. From their perspective, smartphones were associated with personal—not professional—use, and they worried patients and families thought they were using their mobile phones for personal reasons, like texting a friend or checking social media. As cross-coverage child life specialist Patricia described, “For all they know, I'm looking at Instagram or something, and I don't want that perception in front of families.”

Furthermore, in addition to experiencing an organizational/professional tension when using ICTs with patients, they also felt tension when it came to communicating with their interdisciplinary work unit versus their child life team. Child life specialists felt other professional groups often misunderstood their role, but having ICTs like SecureText in their repertoire helped them establish their professional role within their hospital units. As Acute Care child life specialist Lola shared, “[Without SecureText], it was kind of like I was missing out on things... It was just hindering communication with that specific unit and group. Once I got [SecureText], it kind of legitimized me as a clinical staff member within that team.” Child life specialists shared how they wanted to be responsive to their

interdisciplinary colleagues in SecureText to maintain their professional status within their unit. However, this was difficult to do when they received “floods of messages” in SecureText from their child life group, and they felt an organizational pressure to respond given their manager’s mandate to reply to all messages in the child life SecureText thread. To manage these discrepant role boundaries, child life specialists enacted three types of boundary work: boundary straddling, boundary regulating, and boundary enforcing.

Boundary Straddling

I define boundary straddling as a strategy used by participants to try to uphold two or more boundary demands simultaneously. Just as a person can straddle a state line and be in two places at once, participants who straddled would attempt to meet two competing boundary demands concurrently. To manage competing organizational and professional boundary demands, some child life specialists described how they straddled the boundaries by always bringing their HospiPhones and personal smartphones in the patient room and simultaneously prefacing the purpose and use of their devices to the patients and families. As Emily shared, “There’s always this disclaimer. I pull out my personal phone and I’ll say [to the patient and family], ‘I’m not ordering on Amazon or on Facebook. We communicate with our team through this.’”

As child life specialists perceived the materiality of their personal phones did not signal professionalism, leveraging a communicative straddling tactic (via verbal disclaimer) signaled to the family that although they had to use a smartphone, it would be for professional, work-related purposes. Thus, child life specialists felt these disclaimers helped them to save professional face with the family, while also abiding by the managerial

preference for their workgroup to be responsive through SecureText on their personal phone.

Boundary Regulating

While some child life specialists took the boundary-straddling approach when faced with organizational and professional tensions, other participants opted to regulate the competing boundary needs. Boundary regulation comprises selective engagement and/or disengagement with one or more boundaries. In other words, it involves a prioritization of boundary demands. When managing organizational and professional role incongruence, child life specialists engaged in three boundary-regulating tactics: consider the context, screen the contact, and limit use.

Consider the context. Most child life specialists talked about their boundary management as ruled by situational context. In practice, this took the form of assessing the patient situation prior to using ICTs in the patient room. As Penelope, an Intensive Care child life specialist, described:

It varies on the person [if I use my devices in front of families or not]. Like today, I was talking to a family about how to tell their son that their other son died. So no, I'm not going to answer the phone in the middle of that conversation. I would silence it. But if I'm in a room [where I'm not dealing with a sensitive situation and my phone rings], like I will just say, 'Excuse me,' [to the family] and answer it just because I know a lot of my nurses will keep calling if I don't pick up. I'll just say [to the caller], 'Hey, I'm in the middle of something with a patient, but I will call you back as soon as I'm done.' And then hang up and will go on with my conversation [with the family]. And then when I get out of the room, I will call them back.

Here, Penelope considered the patient and family dynamic, as well as the communication norms on her interdisciplinary team, before choosing whether she would use her ICTs in the patient's room. In sensitive patient situations, Penelope prioritized the patient's needs and her sense of professionalism. In less severe patient scenarios, Penelope gave her interdisciplinary team the benefit of the doubt, would answer their calls in the patient room, and would propose to call them back if the situation on their end was not urgent.

Meredith, a day-surgery child life specialist, echoed Penelope's perspective: "I know if I'm in a room with a patient, I don't answer my phone, and I don't look at my SecureText. Unless it's dropping up to my having a casual conversation [with the patient and family], then I'll check and answer. But if we're talking about a procedure, I don't look at it right away. I wait until I'm outside the room." Here, Meredith described how she typically delineated device use based on space in the hospital, with patients' rooms being areas she typically opted not to use her phone. However, she also considered the type of interaction she was having with the family. If it was not a serious matter, Meredith was more inclined to check her device while in the patient room.

Participants also described how their ICT use depended on if they were expecting a phone call or text message. During an observational session with Cardiac Surgery child life specialist Jiminy, she checked her personal phone for SecureTexts approximately every two minutes when rounding with the cardiac care team. As she explained, "I have my phone on silent because I don't want my phone [noises] to interrupt rounds or wake up sleeping kids, but I'm expecting a SecureText from someone." She further described how she often kept her phones in her pocket when on cardiac rounds, as she liked to be present

and attentive so she could assert child life feedback when appropriate and establish her presence as a part of the interdisciplinary team. However, when she was waiting for an important SecureText or a phone call, she adjusted her ICT use accordingly, such as by pulling out and checking her personal phone every few minutes during rounds.

Limit use. Another way child life specialists used the regulating tactic to manage organizational and professional roles was through limiting use of ICTs within their repertoire. To prioritize professionalism with patients and families, some participants limited use of their HospiPhones and personal phones by still carrying their HospiPhone and personal phone with them, but they put their devices in their pocket and on vibrate when in patient rooms. For these participants, having their mobile ICTs “out of sight” and “out of sound” gave them a sense control in where they used their phones and helped them prioritize conversations with patients and families.

Emily, a child life specialist in intermediate care, shared how she liked to segment areas of the hospital as “no phone interruptions” spaces. In these areas—namely, patient rooms—she kept her HospiPhone on vibrate when interacting with patients and families. If she felt multiple vibrates going off during a short period of time—signaling back-to-back phone calls—she interpreted the multiple vibrates as something urgent may have occurred. In those instances, she used the material features of her phone—and the temporal frequency at which phone vibrations occurred—to signal if and when she checked her phone in front of patients and families, thus coupling the *consider context* strategy with her choice to limit device use when in patient rooms. Bernadette, an Acute Care child life specialist, echoed these sentiments:

I don't put my cell phone on ring [when in patient rooms]. Instead, I have it set on vibrate so I can feel it. And if I get a lot of [vibrates] and I'm not in a super intense conversation where I can't be interrupted, then sometimes I'll excuse myself to go outside and check to make sure there's not something crazy going on. Or I can do a quick look, be like, OK no [emergency], it's just child life. It's not from my medical staff. Then I know it's not as urgent.

Here, Bernadette regulated the organizational/professional boundary by keeping her personal phone in her pocket to keep distractions at bay while also using the materiality and temporality of multiple vibrates to signal that something urgent could be occurring. If and when she did check her phone, Bernadette coupled the *screen contacts* regulating tactic to see if the particular person contacting her was urgent enough to interrupt patient care. I describe this strategy next.

Screen the contact. As some participants received “a flood of SecureTexts” from their child life group and their units, they described how they would selectively answer their ICTs based on who was contacting them (what I label as *screen the contact*). Participants felt torn between professional and organizational boundary demands when it came to communicating with hospital employees. For child life specialists, it was important for them to maintain their sense of professional legitimacy with their interprofessional colleagues. Thus, participants discussed how they prioritized calls and texts from doctors and nurses they worked with over their child life teammates. Consider this interaction between Cardiac Surgery child life specialist Jiminy and Acute Care child life specialist Angela:

- Jiminy: This might be very taboo, and it may not be the right thing, but if [child life specialist] Meredith is calling me and I know it's her—because I can see that it's her—if I'm in the middle of something I won't answer. But if I can see that it's a nurse that might be calling me about a procedure, I will answer.
- Angela: I do the same thing if I know who's calling.
- Jiminy: Like screen it.
- Angela: Yeah. I will answer the medical team over child life.
- Jiminy: Right, and I can tell it's not something urgent [if child life is calling me]. You probably just have a question or something like that.

Interestingly, Jiminy and other child life specialists who regulated their ICT use in favor of their interdisciplinary team framed their decision as something that “may not be the right thing” to do, as they were told by their manager to be responsive to their child life team. Yet participants like Jiminy and Angela felt the needs of the child-life group did not hold the same urgency as their unit needs. Thus, they used the features of their phones, such as caller ID, to help them decide whether to answer.

Boundary Enforcing

Boundary enforcing was the final strategy employed by child life specialists when working through organizational/professional incongruence. Enforcement involves a strict separation of boundaries. While the regulation tactic involved strategic and shifting prioritization of boundaries, boundary enforcing occurred when one boundary was completely prioritized over the other. When experiencing organizational/professional role incongruence in relation to their ICT repertoire, child life specialists who engaged in enforcement completely restricted use of one or more ICTs.

Restrict use. Unlike child life specialists Emily and Bernadette, who kept their phones on vibrate so they limited their ICT use but were still aware of hospital communication through the vibration feature, other child life specialists described how they did not use ICTs in patients' rooms no matter the situation or type of conversation. Patricia described how she kept her devices in her pocket and on silent when in patient rooms:

If I'm in a patient room, my phones stay in my pocket, and I don't take them out in front of families. I just put my phones on silent. I just focus on that conversation, and then when I come out of the room, then I look at my phones. If I have a missed call, then I just call that person back and say, 'Hey, sorry I couldn't answer right then. How can I help?' My thoughts behind that are families get interrupted so much by so many people while they're in the hospital. Let's just finish this conversation, and I can figure out other stuff later.

By leveraging the silent feature on her phones and keeping the devices in her pocket, Patricia was able to physically separate out the spaces in which she used her devices. Yet participants noted how this spatial enforcement could come at a cost. Lisa, a cross-coverage child life specialist, described how she also put her personal phone on silent any time she entered a patient room, but using this feature to privilege professionalism toward the patient sometimes led to complications with her interdisciplinary team:

Our chaplain will SecureText me a lot when there's a code on the unit, which is great if I'm right on my phone but not if I'm in another patient's room because I don't check my SecureText in the room. So there have been times I've been in the room with a patient doing an extensive intervention for an hour, and I come out and I have three texts. They say something like, 'Oh, by the way this patient coded. I'm down with the family.' I'm like, well, it would have been nice to know more emergently than SecureText where I don't check that in the room.

As we can see in Lisa's quote, by prioritizing her professional boundary and restricting use of SecureText while in the patient room by silencing her phone, she felt she did not have a way of being reached if an emergency occurred and potentially missed urgent situations in which she was needed. Lola, an Acute Care child life specialist, echoed Lisa's concern of missing important information through SecureText when boundary enforcing: "Sometimes you can get so many SecureTexts that you miss something important. If you're in a room and you don't have your phone out when you're with family, you can come back to 15 or 20 SecureTexts. It can be a lot."

Interestingly, no child life specialist described completely restricting use by *leaving* their ICTs outside of the patient room. They still carried their devices on them at all times, thus not completely "breaking" the manager's request to carry their ICTs on their person throughout their shift. Yet using the silent feature prevented them from being distracted by rings and buzzes, and it gave them a sense of being able to fully prioritize their patients and privilege their professional duty while in patient rooms.

Table 6.1 summarizes the boundary work strategies of child life specialists when they experienced organizational and professional role incongruence.

Organizational/Professional Incongruence	Strategy Used	Empirical Example
~ICT use unprofessional in front of families, but manager required carrying personal phone at all times	~Boundary straddling	Emily brought her ICTs into the patient room, but she gave the family a disclaimer about how she used her mobile phones for work purposes only.
	~Boundary regulating – consider the context	Penelope considered the patient and family dynamic before choosing whether to use her ICTs in the patient room.
	~Boundary regulating – limit use	“I don’t put my cell phone on ring [when in patient rooms]. Instead, I have it set on vibrate so I can feel it.” —Bernadette
	~Boundary enforcing – restrict use	“If I’m in a patient room, my phones stay in my pocket, and I don’t take them out in front of families. I just put my phones on silent.” — Patrice
*Desired professional legitimacy with interprofessional colleagues, but wanted to restrain ICT use to be respectful to patients and families	*Boundary regulating - screen the contact	“I will always answer the medical team over child life.” —Angela

Table 6.1: Boundary work of child life specialists when faced with organizational/professional incongruence

Rehabilitation Services and Organizational/Professional Incongruence

Rehabilitation services, a different group consisting of physical therapists and occupational therapists, described how the ICT repertoire provided by the organization often did not support the professional needs and requirements of their role. These concerns were linked to the HospiPhone, as this professional group was organizationally assigned four HospiPhones to share among 12 people in inpatient rehabilitation. Those without HospiPhones felt their primary ICT, which was often an asynchronous tool such as texting or paging—did not align with their professional duties. Because the rehabilitation roles required hands-on assistance with patients, HospiPhone-less participants shared how they felt they did not have communication devices that supported their physical-labor needs. Furthermore, participants who typically carried a HospiPhone experienced other role support concerns. These individuals described how they spent a sizable portion of their workday transmitting calls to others, and the time spent communicating through and using ICTs did not count as “productive time” for their work: in other words, rehabilitation specialists, who worked off of billable hours, could not bill patients for time using ICTs, such as documenting in the EHR or answering a provider’s questions during a phone call. Thus, those carrying the HospiPhone described the conundrum they felt in answering the phone at the risk of being pulled into a lengthy conversation that could not be justified for compensation. To manage these organizational/professional incongruences, participants performed three types of boundary work: boundary ceding, boundary regulating, and boundary enforcing.

Boundary Ceding

Participants carrying the HospiPhone described their main way to manage organizational and professional boundary incongruence was by giving up their professional needs to uphold organizational role demands. I define this strategy as *boundary ceding*, in which participants yielded one boundary's role demands for the sake of another boundary's role demands. Both boundary ceding and boundary enforcing entail completely prioritizing one boundary over another, yet boundary ceding occurs when participants feel little to no agency or control over prioritizing a role boundary, whereas boundary enforcing occurs when participants can enact their own preferences to completely prioritize one role over another and restrict the competing role demands from interfering.

Rehabilitation specialists carrying a HospiPhone described the challenge of answering the HospiPhone, such as when they got back-to-back phone calls for 15 minutes and these calls needed to be directed to a different person in rehabilitation services. This time spent coordinating care through their ICT repertoire did not count as productive time for the group, who billed patients and received work bonuses based on their productivity. Clarabelle, who carried the Rehabilitation Unit HospiPhone, described, "For every call I get, that's not billable time for me. It makes it hard to want to answer the phone." Physical therapist McKenna echoed Clarabelle's perspective. She further described how she always answered when carrying the HospiPhone, even though she could not professionally count the calls as "productive time" for her work hours:

Sometimes I don't want to [answer my HospiPhone] because my productivity sucks, but it's a thing that's out of my control. We don't have enough phones, and

someone has to answer, so I do it. I don't want patient care to suffer across the board because I'm not answering the phones.

As McKenna shared, she felt it was out of her control that her group was not assigned enough HospiPhones. As HospiPhone calls were the primary way her professional group was reached by others in the hospital, she perceived that someone had to carry the phones in order for patient care not to suffer. Thus, participants like McKenna and Clarabelle ceded their professional role needs (to perform work that could be justified as billable time) for the sake of their organizational role to keep patient care communication flowing to their teammates.

Boundary Regulating

Another way participants in rehabilitation services carrying HospiPhones managed organizational and professional role incongruences was through boundary regulation. Similar to child life specialists, rehabilitation professionals selectively engaged and/or disengaged with a role boundary to prioritize one boundary over another. Participants regulated their boundaries by limiting use of certain ICTs.

Limit use. Rehabilitation specialists who carried a HospiPhone discussed the challenge of spending their time fielding calls when the time they spent communicating through ICTs did not count as billable work. Because of the boundary ceding that occurred with the HospiPhone (the organizational need to be reachable through the HospiPhone was prioritized over their professional role of what they could constitute as professional work hours), participants described how they would cut down on their time using certain ICTs to make up for the time "lost" on the HospiPhone. Physical therapist McKenna shared the

following on a day she carried the HospiPhone: “Me sitting here [documenting in the EHR] is not getting paid. You're not getting paid to document. Looking up patients, answering the phone, talking to doctors or nurses about a patient—like coordination of care stuff—we are not reimbursed for. So I try to make up for it with quick documentation.” Another physical therapist, Ginger, described how she only documented in the afternoons on days she carried the HospiPhone:

Theoretically, we should document after every patient we see. They would like us, at the very least, to document in the mornings and the afternoons—morning notes and afternoon notes. But when you carry the HospiPhone, that isn't going to happen. Something's got to give. So a lot of times [when I carry the HospiPhone], I'll find that I save documentation for only the afternoon.

Thus, participants would limit their time and use of the EHR in order to “make up for” time spent coordinating care through other ICTs, like the HospiPhone.

Furthermore, participants carrying the HospiPhone also described ways in which they limited use of SecureText. Physical therapist McKenna shared how she turned off text notifications from SecureText:

I don't get a text alert [from SecureText]. It will just show the number in the corner. In the corner of the app there will be numbers, but it doesn't buzz. So if I don't need to check the app, then I won't know [who sent the message or what the message says]. It doesn't pop up so if I don't want to open it, I don't have to. It helps me to set up the features that way.

As McKenna spent a chunk of her day coordinating care through the HospiPhone, she wanted to limit her use of other tools, like SecureText. By turning off SecureText

notifications and only seeing a number in the corner of the app for how many messages she had, McKenna felt more in control of how often she was using the tool.

Boundary Enforcing

The final tactic leveraged by rehabilitation service participants when organizational and professional roles clashed was through enforcement. Similar to child life specialists, participants in rehabilitation services—particularly those without HospiPhones—described how they *restricted use* of certain devices within their ICT repertoire, like SecureText on their personal phones, to manage organizational and professional boundary incongruence.

Restrict use. Some participants who used SecureText as their primary form of communication described how there were times when they did not answer SecureText. Because their professional role required hands-on assistance and they felt their repertoire did not support their duties, rehabilitation specialists who did not have HospiPhones and used SecureText instead described how their time with patients was ICT-free. As physical therapist Vanessa shared, “I don’t answer my text messages or personal phone when I’m with patients. I may use my [personal] phone at the start of the session to play the patient’s favorite music artist, but after that, no more phone.” When she did not carry the HospiPhone, occupational therapist Tammy also restricted her personal phone use when in session with a patient in order to prioritize hands-on assistance. As she described:

I do sometimes get lots of texts, and I'm with a patient for the full hour and I'm really hands-on with him, so then I don't get [the texts] until an hour later. But that

person chose to text me, and I was hands-on with a patient, so I can't help that I didn't check my text.

Interestingly, unlike child life specialists who worried about missing information through *their* enforcement choice, rehabilitation services described missing information through enforcement as falling on *the contact's* choice. As we saw in Tammy's quote, responsibility fell on the contact to reach them in a different way if they were more urgently needed.

Table 6.2 summarizes the organizational/professional boundary work of participants in rehabilitation services.

Organizational/Professional Incongruence	Strategy Used	Empirical Example
ICTs provided by the organization did not match the demands of their professional duties and activities	Boundary ceding	“I don’t want to [answer my HospiPhone] because my productivity sucks, but it’s a thing that’s out of my control. We don’t have enough phones, and someone has to answer, so I do it.” —Clarabelle, physical therapist
	Boundary regulating – limit use	“When you carry the HospiPhone, [morning and afternoon EHR documentation isn’t going to happen. Something’s got to give... I’ll find that I save documentation for only the afternoon.” —Ginger, physical therapist
	Boundary enforcing – restrict use	Occupational therapist Tammy did not check SecureText messages during patient therapy sessions.

Table 6.2: Boundary work of rehabilitation services when faced with organizational/professional incongruence

Social Work/Case Management and Organizational/Professional Incongruence

Social work and case management, the third allied health professional group examined in this dissertation, also experienced boundary incongruence between their professional and organizational roles. They discussed the challenge of ICT use and patient perceptions. For this group, many of their conversations with patients involved sensitive conversations, and being professional in these moments was of utmost importance. They described using ICTs in front of patients as inconsiderate and could potentially break trust with their patients. Yet they also felt a responsibility to their interdisciplinary team to be responsive to texts and calls, and they wanted to be available external contacts like Child Protective Services (CPS). Accordingly, social workers and case managers worked through these organizational and professional role incongruences in three ways: boundary ceding, boundary regulating, and boundary enforcing.

Boundary Ceding

One participant in the social work/case management group, Mary, described using the boundary ceding tactic to address her organizational and professional roles. Mary was hired as a Neonatal Intensive Care Unit (NICU) and cross-coverage social worker, meaning her main responsibilities fell in the NICU, but she was also responsible for working in other units when the patient census was high. Mary's office was located in the NICU on the fourth floor of the hospital, but she found herself covering patients in the PICU and IMC located on the second floor hospital most days throughout the week. Mary described spending at least half of the workday away from her office.

For calls and text messages, social workers and case managers had office landline phones, HospiPhones, and SecureText (on their personal phone or desktop computer) as a part of their ICT repertoire. Participants in this group described how they could have their missed HospiPhone calls forward to voicemail on their office landline phones. This capability was especially helpful in moments where they preferred not to answer HospiPhone calls, such as when they were having sensitive conversations with patients and their families. Like child life specialists and her social work/case management colleagues, Mary described how she did not want to answer her devices when she was talking with patients and families. Yet—unlike her coworkers who could let calls go to voicemail—Mary described how she felt compelled to answer her HospiPhone because of her limited access to her landline voicemail. As Mary explained:

It would be ideal to not answer the phone when I'm with patients or wrapped up in important conversations, but I'm all over the place [in the hospital]. Because I work with fourth floor and second floor, sometimes I'm away from my office the whole morning. For a while, I wasn't answering my HospiPhone [when out on the units]. I was noticing I was missing things for half of the day that I then had to take care of in the afternoon, which I probably could have taken care of in the morning. Or maybe it was something I *needed* to take care of in the morning. So I guess for me, maybe there's just so much more pressure to answer my phone because I don't want to miss something. It could be CPS [Child Protective Services] or the Mental Health Unit that I need to get ahold of. So I do answer my phone in the middle of a patient room.

Although she had no official mandate to answer every phone call, Mary felt heightened organizational pressure to answer all of her calls due to her increased mobility as an organizational employee who worked in multiple units and had limited access to her office

voicemail throughout the day. Although answering calls in front of patients and families violated her sense of professionalism, she worried about missing calls from other hospital professionals and outside organizations like CPS that required her professional opinion. Given her organizational role and lack of access to asynchronous ICTs like her office voicemail throughout the workday, Mary yielded her desire to not answer in front of patients for the sake of making sure she did not miss an important message.

Boundary Regulating

Another way participants in social work/case management worked through organizational and professional role incongruences was through boundary regulation. Like the other professional groups examined in this study, social workers and case managers selectively engaged and/or disengaged with a role boundary to prioritize one boundary over another. Participants regulated their boundaries in four ways: consider the context, screen the contact, limit use, and limit access.

Consider the context. Social workers and case managers described their ICT use during the workday as driven by context. As Nicholas, a rehabilitation social worker, shared:

We as social workers and case managers, we're going to default to what we feel is appropriate in that moment. While I may answer my phone on one occasion in one patient's rooms, I may not in another, and it's all based on context. Generally speaking, I don't want to be interrupted when I might be having a very sensitive conversation. You're at a point where you might be building rapport with somebody and they're opening up, and [if you answer your phone] it's so intrusive.

Thus, while he preferred not to be interrupted and invaded by ICTs when in patients' rooms, whether he answered depended on the situation he was presented with that day. Neonatal Intensive Care Unit (NICU) case manager Wanda described how she also managed the organizational/professional friction by placing her device use in context:

I will always answer [my ICTs] *unless* if I'm having a serious conversation with a family that I need to not break the stride for having a serious conversation. I'm going in and saying, 'I'm so sorry, your insurance company said there's no home nursing help for you.' I'll go back [to my office] and check who called, and call them after [the patient conversation]. Or I may answer really quickly and say, 'I can't speak right now. May I call you back?' If the answer is no, 'Can you text or email me? I can't have a conversation right now.' If I'm in a conversation with one of my doctors or one of the specialists about care or follow up, then I want to answer [the phone] because it could be related to that patient. But I know the manager knows if we're not answering, we're involved in something and we can't get to it. Or if I'm in a phone conversation that I'm in the middle of and this [HospiPhone] is ringing, especially if I've been on hold [on my desk phone] with insurance and finally got somebody to talk to, I'm not going to stop. You're going to answer the phone if you're able to answer the phone. If not, you've got something going on where you can't [answer]. I think we [as social workers and case managers] are all very good about being responsive not only to phone calls, but to emails and text, but we put it in context. You have to prioritize that in the moment.

Wanda framed her ICT use not only in the context of what was happening in the patient room, but also in terms of what conversations she was having (such as speaking with a physician versus the insurance company). Furthermore, because she felt she had the manager's trust and confidence in her ICT decisions, she felt justified in her boundary management of contextually grounding her device use.

Screen the contact. The social work and case management group also discussed using a screening tactic when organizational and professional boundaries were at odds.

They talked about prioritizing Child Protective Services (CPS) over other callers because CPS was difficult to reach, and children's safety was tantamount to their professional duty.

Social workers Claudia and Julia and case manager Joy described how they screened calls:

Claudia: I'm always going to prioritize CPS because I'm here for the patient's safety, and if a kid is ready for discharge after the last MRI gets done, then somebody needs to tell me where this kid's going, who can legally pick-up this kid up, and more importantly is the kid going to a safe place.

Joy: Yeah, I screen my calls.

Julia: I know the phone number [of the people I prioritize].

Joy: And I'll answer it right away.

As shown in Claudia, Joy, and Julia's conversation, participants memorized the number of important contacts like CPS. If those organizations or individuals called, they made sure to answer the phone.

Social worker Nicholas shared how he did not like answering phone calls, as he found them highly intrusive when conversing with patients or his interdisciplinary colleagues, and he did not like to be caught off guard. As Nicholas explained, "I don't want to answer a call and be pulled out of whatever I'm doing. I need a buffer from you." To regulate his HospiPhone use, Nicholas described how he only answered calls that were internal to the hospital when at work. All other calls went to voicemail. As Nicholas shared:

My phone, unless it's an internal call, I let it go to voicemail. Leave me a voicemail, and I'll get back to you. If it's an internal call, OK let me answer this, because at least I know that it's something [from the hospital]. It's just a courtesy to my fellow colleagues. [I know it's internal] because it will be an extension only [instead of a full 10 digit number] or it will say "Inpatient Gym" or something like that. It'll be pretty clear. It's not an area code and numbers. If it's not [an internal number], I'll let it go to voicemail because I need to prep for the long message you have, whatever need you have. I'm like, what do you want from me? Let me figure it out first... It gives me a little control. It's a buffer. I don't want to be caught off guard and be asked questions I don't have the answers to.

Thus, by using his phone's caller ID feature, Nicholas was able to determine who was calling (internal contact versus external contact) and whether he wanted to answer. He found his decision to regulate phone calls via caller ID screening gave him more time to assess the issue the person was calling about and an opportunity to formulate a prepared response.

Some individuals described how they sometimes screened internal phone calls, but this presented challenges. As Acute Care social worker Polly elaborated:

The person's information can be wrong in the phone because it's not updated. Like my HospiPhone number, for example. When I call someone, the name that flashes on the caller ID is the social worker who worked here before me. So you can't always rely on the ID to give you accurate information about who's calling.

As the caller ID was not always updated in the hospital directory, participants described how they had to be careful when screening internally, as they may answer a call that they would prefer not to get pulled into or miss a call from a person that they really should have answered. Furthermore, screening the contact in SecureText also presented challenges. As palliative care social worker Julia described:

With SecureText, you can't see what someone is saying [on the home phone screen]. You just see 'Palliative Team has sent a SecureText.' When it gets to five or six [SecureText messages], I'm like, well, is someone else dying or do I need to leave [this patient's room] for an emergency? I feel like the only way that I know that is to look at my phone [and open SecureText].

Because her phone displayed only the group's name on the opening screen, such as "Palliative Team has sent a SecureText," Julia further described how there were times it would be helpful to see on the opening screen (1) who in the group sent the text and (2) what was the content of the message to be able to screen whether this message was truly urgent.

Limit access. A boundary-regulating tactic unique to social work and case management was limiting ICT access. Social worker Claudia prioritized her professional responsibility to be attentive in the patient room over the organizational preference to be reachable through hospital-assigned ICTs. She described how she carried her HospiPhone on her at all times, but she selectively gave out her HospiPhone number. As Claudia shared, "The unit [I work on] does not have my HospiPhone number. The unit has my office desk phone [number] and so do most people, because they can leave a message instead of interrupting me when I'm in a patient's room." Claudia further shared that if someone in the unit asked for her HospiPhone number she would give it to them, but otherwise they would call her desk phone. Thus, by strategically giving out her desk phone number as opposed to her HospiPhone number, Claudia was able to regulate the volume of calls she received when in a patient's room.

Limit use. Like child life and rehabilitation services, participants in social work/case management shared how they limited their ICT use to manage organizational and professional tensions. Social worker Polly described how she put her personal phone on the vibrate feature and kept her device in her pocket when visiting patient rooms. Just as child life specialists described, when Polly felt multiple vibrates going off within a consecutive period of time, she opted to check her phone in front of the patients and see who was messaging her in case it was something important, thus coupling the *limit use* tactic with a *screen the contact* tactic.

In addition to limiting use in certain spaces, others intentionally limited their knowledge of how to use the tools. Rehabilitation social worker Nicholas described how he limited use of his ICT repertoire by refraining to learn additional capabilities of his tools.

As he shared:

I like to avoid technology if I can. I don't like to get pulled into it, and I don't want to be interrupted. So I don't want to know what functions there are [for my ICTs]. Don't tell me. I don't care. Don't give me the handbook. Call and voicemail [is all that I'll use]. If I'm going to use these, I'll only do the basics.

As Nicholas had strong opinions about the invasiveness of technology and preferred face-to-face conversations to avoid miscommunication and interruptions, he limited his use of his devices by refusing to learn about additional features and functions of his tools. During the observational session, Nicholas further commented how “ignorance was bliss” when it came to his tools: if he did not know about an additional feature in a tool, he felt he did not have to use it and ultimately was not responsible for its use.

Boundary Enforcing

The final tactic leveraged by social work/case management when organizational and professional roles clashed was through boundary enforcement. One participant, case manager Roxanne, was unique in *restricting access* to of certain ICTs to enforce her organizational/professional role boundary preferences. Similar to child life specialists and rehabilitation services, social workers and case managers also *restricted use* of certain devices within their ICT repertoire, like SecureText on their personal phones, to manage organizational and professional boundary incongruence.

Restrict access. Case manager Roxanne shared that she did not give her HospiPhone number out on the unit. As she shared, “I don't want [the unit] to call me on this HospiPhone unless I give them the specific number to call me.” Roxanne further explained that when they asked for her HospiPhone number, she shared her desk phone number. Unlike Claudia, who would give her HospiPhone number out when asked (thus limiting access, Roxanne only shared her HospiPhone number with her social work/case management team and key interdisciplinary contacts, like physicians she contacted frequently or hospital leadership.

Roxanne justified the decision to not give out her HospiPhone number by further describing that she felt her desk phone was more reliable than her HospiPhone. As she stated, “This [HospiPhone] is a piece of crap. It cuts in and out all the time.” Additionally, she said that she sat at her desk for at least 80 percent of her workday, making her desk phone a likely place to reach her. Thus, Roxanne rationalized she was still highly

accessible through the desk phone even if she opted not to share her HospiPhone number with her unit.

Restrict use. Social workers and case managers also described restricting use as a strategy employed to tackle organizational and professional boundary incongruence. Establishing trust and showing empathy with patients was a key component of social work/case management professionalism, and participants described how they would not use one of the ICTs within their repertoire in particular hospital spaces to help them prioritize patient and family conversations. Social worker Claudia shared how she carried her HospiPhone when visiting patient's rooms but opted to leave her personal phone behind:

I leave my cellphone here [in my office]. ... I only have maybe ten or fifteen minutes to get what I need about the family so that I can assess their ability to go home with the sick child. That's why I won't take in [my personal phone to the patient's rooms]. Most of the time I leave it here on my desk when I go see patients and just take this HospiPhone, but very few people call me on this [HospiPhone]. I mean, that's how I set my boundaries, too.

As we can also see in this quote, boundary work strategies were not used in isolation. Claudia *restricted use* of her personal phone by keeping the device in her office and not taking it with her when speaking with patients and their families. She carried her HospiPhone with her when out on the unit, but by *limiting access* to this device through regulation, she ensured that an interruption through the HospiPhone would be from a person she deemed important.

Although NICU case manager Wanda based most of her ICT use on situational context, she described some instances in which she enforced firm boundaries around her tools to privilege professionalism. This occurred during particular events—namely during important meetings and when listening to the physician patient handoff in the morning. As Wanda explained:

When I'm in important meetings like a care conference, I leave my personal phone in my office. I carry my HospiPhone with me, but it stays on silent. If I don't silence it, [the volume] will be really low. If I'm expecting calls to come back, like from insurance or a key player [in the care conference], I may keep [my phone] to where I can at least notice that I've gotten a call. And because I come to work early, I don't start carrying [my HospiPhone] until later [when my shift starts]. So if I'm back there with the docs and we start our sign out—if we're signing out at 7:15 AM, I'm not going to have that phone back there.”

To display professionalism toward her interdisciplinary colleagues, Wanda restricted use by leaving her personal mobile in her office and by placing her HospiPhone on silent. As care conferences were meetings on sensitive, critical, or complex patients that involved multiple interdisciplinary stakeholders (e.g., physicians, specialists, case managers, social workers, nurses, dietitians, pharmacists, etc.) and were challenging to coordinate given that a meeting time had to work for five to 15 people's schedules, Wanda wanted to give these meetings her undivided attention. Yet even with these intentions, she still prefaced there were instances when she might be expecting an important return phone call from someone who had stakes in the meeting. In those instances, Wanda would regulate her organizational and professional roles by considering the context and would limit use of the device by monitoring the screen or keeping the volume on low so that she was aware she

was being contacted. Furthermore, Wanda did not carry her HospiPhone during the early morning physician hand off. She justified this decision because arriving early was her choice, and she technically was not on the clock until 8 AM. Thus, she felt she was still on “her time” and did not feel obligated to be responsive through the HospiPhone prior to the start of her shift.

Table 6.3 summarizes the boundary work strategies of social work/case management when faced with organizational/professional role incongruence.

Organizational/Professional Incongruence

Wanted to give patients undivided attention and establish trust, but also wanted to be responsive to interprofessional team and external organizations like CPS

Strategy Used	Empirical Example
Boundary ceding	Mary, who covered units on two different floors and had a more mobile workflow than others in her professional group, felt compelled to answer her HospiPhone calls because of her limited access to landline voicemail in her office: “It would be ideal to not answer the phone when I’m with patients or wrapped up in important conversations, but I’m all over the place... So I do answer my phone in the middle of a patient room.”
Boundary regulating – consider the context	“We as social workers and case managers, we’re going to default to what we feel is appropriate in that moment. While I may answer my phone on one occasion in one patient’s room, I may not in another.” –social worker Nicholas
Boundary regulating – screen the contact	Case manager Joy memorized the phone number for CPS and prioritized their phone calls over other calls, such as a call from a physician in her unit.
Boundary regulating – limit access	“The unit [I work on] does not have my HosiPhone number. The unit has my office phone [number] and so do most people, because they can leave a message instead of interrupting me when I’m in a patient’s room.” –social worker Claudia
Boundary regulating – limit use	Social worker Polly kept her personal mobile phone in her pocket on vibrate when visiting patient rooms. If she felt multiple vibrates, she opted to check her phone.
Boundary enforcing – restrict access	Case manager Roxanne did <i>not</i> give her unit her HospiPhone number, even when asked.
Boundary enforcing – restrict use	NICU case manager Wanda attended rounds every morning at 7:15 AM, but she did not start carrying her ICTs until 8 AM when her shift officially began.

Table 6.3: Boundary work of child life specialists when faced with organizational/professional incongruence

ORGANIZATIONAL/PERSONAL BOUNDARY INCONGRUENCE & BOUNDARY WORK

Organizational and personal boundary incongruence occurred when participants experienced discrepancies between their role as a hospital employee and their other personal roles outside the hospital—such as a friend, a spouse, and a parent. Participants at this hospital were required (i.e., child life specialists) or encouraged (i.e., rehabilitation services and social work/case management) to use SecureText on their personal smartphones, and some encountered requests to share their personal phone numbers for work phone calls or texts. Thus, participants described the clash they experienced in incorporating organizational life into something they owned personally. In this section, I explore the boundary work performed by each professional group when managing organizational and personal role incongruence.

Child Life Specialists and Organizational/Personal Incongruence

Child life specialists experienced strict rules around their ICT use, particularly with SecureText. Their manager required all child life specialists to download SecureText on their personal phones, and she further requested that they be responsive to all messages within the child life message thread. This created organizational and personal role clashes for participants, both at work and at home. Next, I describe how child life specialists managed organizational/personal incongruence when on duty and off duty.

On Duty: Boundary Ceding and Boundary Regulating

Boundary ceding. When at work, child life specialists described how they ceded their personal preferences for their manager’s requirement to download SecureText. As emergency department (ED) child life specialist Cindy and IMC child life specialist Emily shared:

Cindy: I feel like I *have* to have this [personal] phone with me.

Emily: Yeah, our manager said, ‘If we’re going to do this [use SecureText], we all need to do it.’ So we didn’t really have a choice [in using our personal phones at work].

Acute Care child life specialist Bernadette echoed similar sentiments: “I do find that very frustrating [that I use my personal mobile]. I prefer to not use my personal phone, and I wish we didn’t have to, but there’s no way around it.” Thus, child life specialists preferred not to use their personal phones for work purposes, but given their manager’s orders, they yielded their personal preferences to abide by the demands of their organizational role.

Boundary regulating. Child life specialists also described how they regulated the organizational/personal boundary when at work. As their mobile devices were also linked with personal tools, such as personal email, texting, and social media, participants described how they would not only get dings and vibrates from SecureText, but also from personal apps. As Rachel, a child life specialist working in the Radiology and Imaging Department, shared, “Not only do I get SecureTexts, but I’m also getting personal texts from friends and family, email notifications, social media notifications... It’s a lot.” To keep their focus on work, child life specialists described how they would screen their phone

whenever they felt or heard a notification. If the notification did not come from work and was related to their personal life, such as a text message from a family member or a personal email notification, they opted to dismiss the message until they had a break or were off work. During an observational session, child life specialist Jiminy pulled her phone out of her pocket after feeling it buzz. When seeing it was a notification for a personal email, Jiminy swiped the notification away and put the phone back in her pocket. “I try not to look at personal stuff while I’m working,” she shared.

Off Duty: Boundary Regulating and Boundary Enforcing

When off the work clock, child life specialists described the challenge of still being connected to the hospital. As child life specialists worked variable hours (such as one person working from 8 AM to 4 PM and another working from 2 PM to 10 PM), they described receiving SecureText messages from their professional team throughout the day and night, even when they were no longer at work. As they brought their mobile phones home with them and could see when they received a SecureText, participants described the challenge of whether to answer, especially when off duty. As Emily stated, “Our manager did tell us to respond to *every* text, and we’re like, well, is this one that we need to respond to? It’s not clear where the line is.” PICU child life specialist Penelope further elaborated, “When I’m not at work, I’m still getting a flood of SecureTexts. And it’s like, do I answer or not? It’s hard to decide what to do.” To manage this tension, participants described how they regulated and enforced boundaries with their ICT repertoire to protect their personal time.

Boundary regulating. Some child life specialists described using a screening tactic when they received SecureText messages on their personal phones during non-work hours. These participants shared that they still opted to check SecureText when they received a notification after work, but they would only reply to those whom they deemed worth answering. As day-surgery child life specialist Meredith described, “Some people will be more liberal at what they text at different hours versus, like if I know I'm getting a message from this person then it's really, really important. Whereas if I see this name pop up, I think, ‘Can I get to that tomorrow morning?’” Yet participants described how they had to be careful when regulating, as they could only screen the contact, not the message. As cross-coverage child life specialist Patrice shared, “It shows ‘read’ to the contact after you open the message, so you have to be careful about what you choose to open [when you're at home]. It'd be bad to read it and not reply.” Thus, as their screen would only show the name of the contact, such as “John Doe sent you a SecureText message” and participants felt they had to reply after opening the message given the read receipt, child life specialists had to rely on screening based on their relationship with the person contacting them, not the content of the message.

Boundary enforcing. Some child life specialists described how they enforced personal and organizational boundary separation when on personal time. These participants described how they used “Do Not Disturb” in SecureText to enforce a “no work zone” at home. Do Not Disturb was a feature within the app that, by selecting it, temporarily blocked the user from receiving app push-notifications. When selecting Do Not Disturb, the user could include a customizable “away message” that was sent to anyone

who messaged them when Do Not Disturb was turned on. Participants described how Do Not Disturb restricted their use of SecureText when off duty and helped them protect their personal time. For example, as child life specialist Jiminy described, “I put on Do Not Disturb every time I leave here, whenever I'm done with my shift. It keeps me from getting involved in the chatter after hours.” Furthermore, participants shared that the away message was helpful in signaling to their co-workers that they were not working. Yet one challenge participants experienced was remembering to turn Do Not Disturb off. Child life specialist Penelope described an instance when she forgot to reset: “There was something important going on and I had it on Do Not Disturb for a few days. I missed 25, 30 important messages.” Thus, participants found that enforcing personal boundaries could come at the cost of jeopardizing workplace communication.

Participants also described that even when they tried to enforce no workplace communication on their personal phone when off duty, participants who had SecureText on a regularly-accessed page on their smartphone found that they could still “see” when they had received messages: the app icon on the screen would display a number in the top right corner (a push notification) that would show how many messages were waiting for them (see Figure 6.1 for an example). As Patrice described, “Even though you won’t get buzzed every single time [a message comes through], it’ll still pop up in your icon, so that can be distracting.” Acute Care child life specialist Bernadette further elaborated:

Do Not Disturb is helpful, so it tunes out the sound, but it's still ... I see if there's a notification, that's a message waiting for me. So then it's kind of hard to really take a break when you're not working, to really get the self-care that we need so we can be better able to work.

Thus, seeing the push notification number in the top corner of her app affected Bernadette's ability to disconnect and engage in self-care.

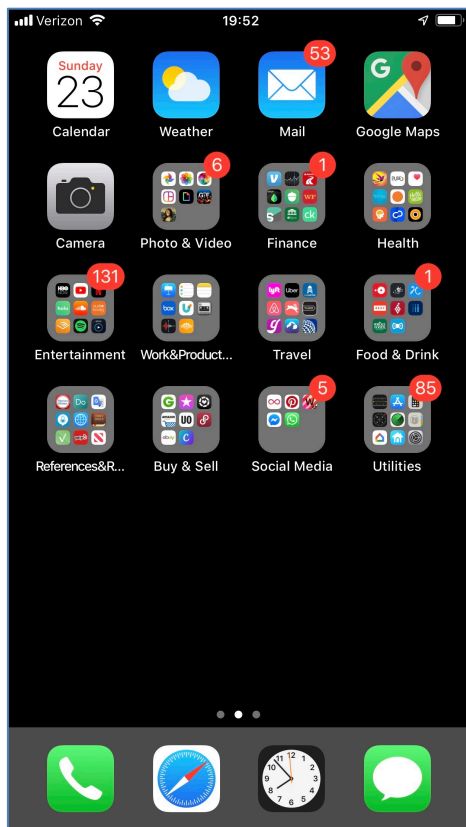


Figure 6.1: Example of a smartphone screen with push-notification numbers displayed. The numbers are shown in red in the top right corners of the apps and alert the individual of a notification within the app.

Furthermore, child life specialists described how turning on the Do Not Disturb feature felt questionable, considering their manager's request for the group to respond to

every SecureText message. Consider this conversation among Patrice, Penelope, and Helen:

Penelope: It makes work-life balance hard because [our child life colleagues] ask questions when I'm off, like if they need help or don't have the answer to something. But is the expectation that I have my phone and my SecureText on and I'm supposed to respond to these texts [when I'm not at work]?

Helen: Yeah, it makes separation hard because you can turn off notifications. But I've gotten a notification like Friday night or Sunday [when I'm off duty], and those things caught my attention. I'm like, 'Oh God, what's going on? Should I open that?'

Patrice: Right. And then I look at them at 7:00 on a Friday night.

Penelope: Or is it okay that I put it on Do Not Disturb and I don't answer their questions? But then I feel bad. They're working late or working on the weekends and they have a question and I'm just ignoring them. So it makes it hard to decide what you should do.

This exchange highlights many struggles. Participants wanted their off-duty time to be work free, but they also did not want to leave their teammates without assistance, nor were they certain if not responding meant they were "breaking" the manager's order to respond to all SecureText messages.

Although most of their conversation around bringing work into personal life centered around SecureText and their personal phone, child life specialists also shared they could check email at home. However, as email was not a primary form of communication for the group and all who participated aimed to disconnect from work when not at the hospital, child life specialists described how they enforced the organizational/personal

boundary by selecting to not use certain ICTs at home, namely email. As ED child life specialist Cindy shared:

We can't bring the HospiPhone or EHR home, thank goodness. We could probably get administrative permission to access the EHR on our own computers, but I'm not going to do that. And I'm not going to check email either. There's nothing time sensitive on [email], and that can wait.

As participants already felt compelled to check certain ICTs within their repertoire like SecureText, they wanted freedom from checking other workplace communication tools when off the clock. As email was not a primary form of communication for the group and they were not required to check or respond to email regularly, participants opted to not check the ICT when away from the hospital. Furthermore, the HospiPhone did not work outside the hospital so they did not take it with them. Participants had to request special permission to get access to the EHR at home, which participants opted not to do to better enforce boundaries for themselves.

Table 6.4 summarizes the boundary management strategies of child life specialists when organizational demands and personal preferences clashed.

Organizational/Personal Incongruence	Strategy Used	Empirical Example
<p>~<i>AT WORK:</i> When <i>on duty</i>, they preferred not to use personal phone for work purposes, but their manager required them to download SecureText on their personal phone.</p>	~Boundary ceding	<p>“I feel like I <i>have</i> to have this [personal] phone with me.” –Cindy, Emergency Department</p> <p>“I prefer not to use my personal phone, and I wish we didn’t have to, but there’s no way around it.” —Bernadette, Acute Care</p>
	~Boundary regulating – screen the contact	When she received a notification on her personal phone, Jiminy in Cardiac Surgery would check to see who sent the message. If it was not from a work contact, she dismissed the notification.
<p>*<i>OFF WORK:</i> When <i>off duty</i>, they still received SecureText messages from child life teammates due to diverse shift times. Although they were off work, they felt pressure to answer given their manager’s desire for group responsiveness</p>	*Boundary regulating - screen the contact	“If I see this name pop up [after work hours], I think, ‘Can I get that tomorrow morning?’” –Meredith, Surgery
	*Boundary enforcing	Jiminy put her SecureText app on “Do Not Disturb” when she left the hospital. She switched the feature off when she returned to work.

Table 6.4: Boundary work of child life specialists when faced with organizational/personal incongruence

Rehabilitation Services and Organizational/Personal Incongruence

Those in rehabilitation services also described clashes with their organizational and personal roles. Their manager did not require for them to download SecureText, but participants recognized SecureText was a common mode of communication across the hospital. Additionally, participants who did not typically carry a HospiPhone needed a way to be reached, and SecureText on a personal phone, from their perspective, was the easiest way to do so. Next, I describe how participants managed organizational and personal incongruence when at work and away from work.

On Duty: Boundary Ceding, Boundary Regulating, and Boundary Enforcing

Boundary ceding. Despite SecureText being presented as an “optional” tool for rehabilitation professionals to use, one participant, physical therapist Vanessa, described how she did not typically carry a HospiPhone and thus felt obligated to use SecureText on her personal device: “I would prefer to have a company phone [instead of using my personal phone], but I feel like I don’t have a choice [in using my personal phone] if I want to reach people [at the hospital].” Vanessa elaborated that because so many of her professional teammates and interdisciplinary colleagues used SecureText to communicate and she was not at a computer frequently to use SecureText on a desktop computer, she felt she did not have a choice in using the app on her personal phone despite SecureText being presented as an optional tool to use. Thus, she ceded her personal preference and downloaded SecureText to use for workplace communication.

Boundary regulating. Participants in the rehabilitation services group regulated organizational and personal boundaries through screening. Some rehabilitation specialists relied heavily on their personal phone for workplace communication, and they commented on the challenge of receiving personal text messages throughout the day. Similar to child life specialists, they regulated the boundary incongruence by prioritizing work-related messages and closing out personal-life messages while working. As occupational therapist Bonnie described:

I don't mind using my personal phone [at work], but I've been getting texts all day that are personal texts, and that can be frustrating to see that with my work texts. I have to be constantly closing [personal text notifications] out all day.

Physical therapist Vanessa, who also relied on SecureText as her primary workplace communication tool, described how she screened her messages and did not answer personal contacts while on duty:

[With having my personal phone at work], I know if I'm treating a patient, I might text my co-worker about something important work-wise, but I'm not going to text my sister. But if I'm on a break and I'm like going to the bathroom or I'm like sitting at my desk for a minute, I might text my sister.

Boundary enforcing. The final tactic leveraged by participants when organizational and personal role boundaries clashed was enforcing a boundary. Some participants restricted use of ICTs at work by electing *not* to include certain ICTs in their repertoire. For example, physical therapist Zoe described how receiving personal messages during work hours would be a great distraction and get in the way of her completing her

daily work tasks. Despite recognizing SecureText as an easier and quicker way to access colleagues, she opted not to use the SecureText app and her personal phone. Instead, Zoe selected to use a pager as her primary form of communication in the hospital. She locked her personal phone up every day before work and retrieved the phone from her locker at the end of the day. Zoe stated the following about her decision:

I don't want my personal life distractions going on in the background of my work. It would be easier to be able to contact people via SecureText, but for me it's just a better route to not [use my personal phone]. Just to cut it out. But I guess part of my choice that I don't use my cell phone is that I'm making it difficult on myself. You know what I'm saying? It's my choice to not use it. I'm making the choice to not use my phone, but it's harder for me to get ahold of [people in the hospital]... I also wonder if it's frustrating for people sometimes that I don't have SecureText. But they do have a way to get ahold of me [through my pager], and we're not required to use SecureText or carry our [personal] phones. So it's better for me if I don't [use my personal phone and SecureText].

In Zoe's quote, she kept reiterating her enforcement was a choice, yet this choice made it difficult for her to communicate with people at work. She was also curious if others were frustrated by her device enforcement. As Zoe was the only in-patient specialist who used a pager, her teammates described how having to use an entirely separate communication system to reach her did, indeed, make it difficult to communicate with her. Physical therapist McKenna shared the following:

There are people who have refused to download SecureText, which is challenging for us while we're here [at work]. They'll refuse to use their personal device at work, and so they don't have SecureText at all. So we have to work around that and find another way to reach them. But it's not required of us either, so they have that separation if they want it.

Zoe made it clear, however, that she would be inclined to use SecureText and operate in a similar communication system as her colleagues if the hospital issued her a SecureText-compatible phone:

If work would give me a phone that just had SecureText on it, I would be more apt use it. I feel like it is easier to get ahold of and communicate with people [through SecureText] because you're not having to call them on the phone and wait for a phone call back. You can just send them a message. And [if it was on a work phone] I wouldn't have to worry about the distractions of my personal life during the day.

Off Duty: Boundary Regulating and Boundary Enforcing

Rehabilitation services did not openly describe boundary work when off work time. When asked about if they received workplace communication when off duty, occupational therapist Bonnie elaborated this was seldom the case. As she described, "Typically in our discipline, we're not really working with emergent things that need absolute, immediate responses." Rehabilitation services scheduled patients during regular business hours from 8 AM to 4:30 PM, and they reserved their team and interprofessional communication for these work hours. As physical therapist Sienna shared, "We know our hours. The hospital knows our hours. So I don't get texts about work stuff when I'm off." Occupational therapist Bonnie also described how their work was not urgent, and they could treat the patient the next day if a child missed their rehabilitation session.

Furthermore, patients were not assigned to one particular person. Instead, the group shared the patient load collectively. When providers placed rehabilitation orders in the EHR, the group received faxes for the orders in the rehabilitation office. Whoever was in

the office would then pin the order and patient information under the person with the lightest patient load for that day. At the end of the workday, the team shifted around the patients on the board based on who was working the next day's shift. As physical therapist McKenna explained, "The patients are *our* patients." Because multiple people in their professional group had their hands on the patients and one particular person did not hold domain knowledge or expertise over the patient's rehabilitation plan, this professional group rarely dealt with receiving work-related messages during personal time. When they did receive workplace messages at home, however, they managed the boundary incongruence in two ways: through regulating and enforcing.

Boundary regulating. Physical therapist McKenna described how there were times she would check SecureText when at home. Using the *consider the context* regulation tactic, McKenna shared that when she was out sick for the day and the replacement physical therapist typically did not work at Children's Hospital or had not treated someone in her patient load previously, she would tell the person to SecureText her if a question or need should arise. As McKenna explained, "If I've called in sick, especially if someone was covering my patients, [I'd check SecureText]. I'd say something like 'Hey, know you can reach out to me.' But that's a personal choice. No one would feel obligated in the rehabilitation department to answer from home." Thus, McKenna chose to check her SecureText when out sick to be considerate of her colleagues in case they needed help. She framed this decision as a personal choice rather than something she was required to do.

Boundary enforcing. Additionally, participants with SecureText on their personal phone described how if they wanted to set firmer boundaries with their personal device, they could use the Do Not Disturb feature in the SecureText app. As physical therapist Clarabelle shared, “You can turn on Do Not Disturb in SecureText, so you won’t feel that ding and you won’t feel like you need to respond, just like as if it were an email and you didn’t open it kind of a thing.” Yet all participants in this study who used SecureText described how they typically did not use this feature. As they rarely received messages after work hours on SecureText, they did not want the burden of remembering to turn on Do Not Disturb when they left and turn it back on when they arrived at work.

Table 6.5 summarizes the boundary work of child life specialist in relation to their organizational and personal role demands.

Organizational/Personal Incongruence	Strategy Used	Empirical Example
<p>~AT WORK: They were not required to use their personal phone, but there were not enough organization-provided mobile phones for everyone in the group to use.</p>	~Boundary ceding	“I would prefer to have a company phone [instead of using my personal phone], but I feel like I don’t have a choice [in using my personal phone] if I want to reach people [at the hospital].” —Vanessa, physical therapist
	~Boundary regulating – screen the contact	“I don’t mind using my personal phone [at work], but I've been getting texts all day that are personal texts, and that can be frustrating to see that with my work texts. I have to be constantly closing [personal text notifications] out all day.” –Bonnie, occupational therapist
	~Boundary enforcing – restrict use	Zoe refused to use her personal phone at work. She put her mobile phone away in a locker every day at work and instead used a hospital pager as her primary form of communication.
<p>*OFF WORK: Participants in rehabilitation services did not feel pressure to use their ICTs after work hours. If they did check messages, they described it as optional and not expected of them.</p>	*Boundary regulating – consider the context	Physical therapist McKenna described how she used SecureText on days she was out sick to help the person covering for her.
	*Boundary enforcing	Physical therapist Clarabelle shared how they <i>could</i> use Do Not Disturb in SecureText, but it was not necessary because they seldom received messages after work.

Table 6.5: Boundary work of rehabilitation services when faced with organizational/personal incongruence

Social Work/Case Management and Organizational/Personal Incongruence

The social work/case management group, like rehabilitation services, did not experience strict rules around how to use their ICTs. Their manager strongly encouraged them to use SecureText, but they had the option to use the app on their personal phones and/or desktop computers. Some participants described how having SecureText on their personal phone matched their personal and work preferences. As case manager Marty stated, “I don’t mind having SecureText on my phone at all. Really, it’s better. I like being in the know. I like being able to reach people, and I want people to be able to get in touch with me easily. And my personal phone gets better reception in here than anything else I use.” Yet others in the social work/case management group countered that they felt like the hospital should provide them with devices that supported workplace communication. From their perspective, it should not be the employee’s responsibility to bear the burden of using personal ICTs for the sake of better cell service and sustaining workflow. Furthermore, participants who used SecureText on their personal device described how distracting it was to receive personal messages while at work and vice versa. Thus, as organizational roles and personal roles met and at times collided through their ICT repertoire, I next describe how social workers and case managers used their ICTs when handling organizational and personal incongruence.

On Duty: Boundary Ceding, Boundary Regulating, and Boundary Enforcing

Boundary ceding. When at the hospital, some participants described how they would prefer not to use their personal device for work purposes, but the convenience of reaching others via SecureText on their smartphone outweighed their desire to stay off their

personal phone. As oncology social worker Claudia described, “I resent that [SecureText is] attached to my [personal] phone. I mean I'd much rather have it [on my phone than not have it at all] because it's convenient, but there are times when I'm getting messages both ways [from work and personal life] and it doesn't feel like I can put it away.” Mary, who worked in the NICU on the fourth floor and cross-covered the IMC and PICU on the second floor, described how she did not feel like she had much of a choice in using her personal phone at work: “Because I'm covering different floors, I feel like I have to use my [personal phone]. I'd rather not use my own phone for work stuff, but so many people I talk to mainly use SecureText, so I need to have my [personal] phone on me.” Mary further elaborated that she was away from her office over half the workday. Although she could technically use SecureText on her desktop computer only, as downloading SecureText on her personal phone was not required, Mary felt this option was not feasible for her workflow given the amount time away she was away from her office. She did not want to miss important or time-sensitive messages. Thus, despite the distraction of getting messages from both work and home and the preference to not use personal tools for work purposes, participants ceded their preferences to maintain a better communication flow and have greater reachability at the hospital.

Boundary regulating. Like child life and rehabilitation service specialists, those in social work/case management who used SecureText on their personal phones described regulating their smartphone use by screening the contact. If the message came from a personal-life contact, participants described how they typically opted to dismiss the message until they had a break or were off duty. Participants further described how they

coupled screening the contact with considering the context of their location at the time of receiving the personal message. If they were “out on the floor” (i.e., in the patient rooms, hospital units, or hallways), they opted to dismiss personal messages on their personal phones. As case manager Joy shared, “It doesn’t look good to answer personal messages around patients, their families, or other hospital professionals.” As the hospital units and hallways were visible spaces with many people walked around, participants did not want to be seen checking non-work related messages. Yet participants described how they did sometimes check personal messages when in the privacy of their offices. As social worker Gwen shared, “If I have some downtime and I’m in my office and I get a personal text, I’ll usually look at it.” As their offices were not under the watchful eyes of patients and other health care professionals (other than their social work/case management officemate), participants deemed their offices a safe space to look at personal messages when working.

Boundary enforcing. A few social work/case management participants described completely eliminating devices from their repertoire to respect their personal boundaries. For example, palliative care social worker Julia chose not to carry a HospiPhone. As she described, “I don’t have a HospiPhone. I just have a work cell phone that I pay for because it feels better to me to have two separate phones. If people want to get ahold of me, they can call my work cell phone or SecureText me.” Thus, Julia owned two mobile phones: one for her personal life and one for work use. She downloaded SecureText onto her work smartphone, and she shared her work mobile phone number with her social work/case management team, palliative care colleagues, and other interdisciplinary contacts. When at work, Julia described how she left the smartphone she designated for personal use in her

desk drawer and did not check it unless she was on a break or had some down time. Although this enforcement meant Julia paid for two phone plans (one for personal and one for work), she felt not carrying two devices—a HospiPhone *and* a privately-owned smartphone that also included her personal contacts and information—helped her minimize the number of devices she carried and helped her to work more effectively without the distraction of her personal life.

Case manager Roxanne also opted to not use her personal phone at work. To keep her personal and organizational roles distinct, she downloaded the SecureText app on her desktop computer instead of her personal device. Consider this exchange between Roxanne and Joy, another case manager:

Roxanne: When SecureText came out, I had a BlackBerry and it wasn't compatible with Blackberry. Then when I got my iPhone, I just never put SecureText on it. I just use the computer for my SecureText. I don't want to be bothered at home.

Joy: But I feel like it's more convenient [to have it on your personal phone]. I like the fact that we can do that, put it on our [personal] phone, because you're not always in your office sitting at your desk. Like I'm walking around sometimes, and I might be SecureTexting two doctors and doing stuff.

Roxanne: Well that's happened to me, but I don't care. Eventually I'll see [the SecureText] and it can't be—it's not life threatening. There's nothing I can't fix at that moment.

Although some social work/case management participants, like Joy, preferred the convenience and accessibility of SecureText on their personal devices, it was important for Roxanne to keep her personal and work lives as separate as possible. Roxanne justified

her decision to not download SecureText on her personal phone through the urgency of her professional role: she felt like there was no task she had to perform that was urgent or life threatening. Furthermore, as Roxanne worked from her office the vast majority of the day, having SecureText only on her computer allowed her to keep work apps off of her personal phone.

One social worker, Nicholas, described how he enforced rules with his friends and family around when they could contact him. He shared the following story of how he structured his communication during work hours:

Every time it's somebody's birthday, my aunt emails all the cousins, aunts, uncles, and she tells them, 'It's so and so's birthday. Wish them a happy birthday!' She and my family have already learned that with me, I've had to tell them, 'Don't text me. I don't want your happy birthdays while I'm at work because you're interrupting me. I already have to answer my phone for different things that are work-related. You don't know if I'm in a meeting, if I'm talking with someone over something serious.' And then I get a text and I feel like, oh I need to look at it. And it's just some cousin who I never hear from who's giving me the obligatory happy birthday. I'm like, don't bother me. So my aunt actually text me on Easter Sunday, and she's like 'Happy pre-birthday. We won't bother you while you're at work.' I'm like good. Don't.

Nicholas then went on to explain that this was not something he enforced only on special occasions or holidays. To better ensure the buzzes and dings from his personal phone were related to work, Nicholas enforced contact times with his family and friends (before 8 AM and after 4:30 PM) so that his personal phone could be used for Children's Hospital tasks when on the organizational clock.

Furthermore, Nicholas also described how he did not use the rest of his ICT repertoire for personal purposes. As he shared, "I will not use my HospiPhone to make

personal calls... I don't want my personal business attached in any way to somebody else's technology. I don't want someone else to have a record of my personal phone calls. That's my business." Case manager Willadean also did not use hospital devices for personal use: "My rule is I don't use my hospital tools for personal stuff. That just feels disrespectful. If I need to make a personal call or send a personal email, then I'll use my own phone or my personal email account, and I try to only do that when I have a break." By enforcing use of organizationally-assigned devices for workplace communication only, participants felt more in control of personal communication and information, and they felt they were demonstrating respect toward organizational property and work time.

Off Duty: Boundary Regulating and Boundary Enforcing

Social workers and case managers described how they did not feel an organizational obligation to answer Children's Hospital messages when away from work. As case manager Joy shared, "That pressure's not there. Our manager respects our time, and she doesn't expect us to do work outside of work. So it's up to us what we do when we're off the clock." Rehabilitation social worker Nicholas shared similar sentiments: "You're off the clock. If you want to read a SecureText, you can. If you don't, you don't. No one's breathing down our throats saying we have to [check work messages when at home]." Yet because many in social work/case management incorporated a workplace tool onto their personal devices, they described having to manage organizational and personal roles when away from the hospital. Participants worked through organizational and personal incongruence when off work through regulating and enforcing boundaries.

Boundary regulating. Some participants, like social worker Nicholas, described how they considered the context when replying to work-related messages when off the clock. Nicholas shared the following about answering SecureText after work hours:

I'll answer it if I'm intrigued, like there might be something interesting going on, or maybe something in the rumor mill. But I have no problem not answering. I'm just like dismiss. I'm very quick to look at it and just be like no [I'm not going to answer that message]. I'm just resigned to that. I'll only look at it if I want to look at it.

Here, Nicholas described how he only looked at SecureText messages if he was interested in looking at them. Yet his curiosity and interest had to be kept in check. Just as child life specialists commented about SecureText read receipts, if Nicholas opened the message, he then felt obligated to respond:

One thing I do have to think about is when I answer or don't answer because people can see when you read it. And I don't want to *read* it if I'm not in the mood to *respond* because then it's like, 'Nicholas read my text and he hasn't even responded.' And I think that's worse than, 'Oh, he just didn't answer.' Maybe I was at the movies. Maybe I didn't see it. Maybe I left my phone in the car. So it's being very strategic about it. I'm not going to read it until I *know* I'm in the mood to respond to it.

Boundary enforcing. The final strategy leveraged by the social work/case management group to address organizational and personal role boundaries when away from work was through boundary enforcing. Some participants opted to restrict the use of certain ICTs within their repertoire when off the organizational clock. Like other professional groups in this chapter, social workers and case managers also described using the Do Not Disturb feature when they left the hospital to restrict SecureText use. As Acute

Care social worker Polly shared, “It helps me keep work at work.” Yet just as child life and rehabilitation services remarked, participants in this professional group described the challenge in remembering to turn Do Not Disturb off. As Emergency Department social worker Flora shared about the Do Not Disturb feature, “You have to remember to reset it back in the morning because otherwise it blocks your messages. They're not getting your messages, and you're not getting theirs.”

Email was another tool used frequently by social workers and case managers. They could access email from home, but each person spoken with in this group said they opted not to use email when at home. As social worker Nicholas shared, “I *can* log in to email at home, but I don't. So no, I don't do work at home. I used to at my old job, but it's just a faster route to getting burned out. So I just have my boundaries and I'm like no, not going to happen [with email at home].” Thus, to protect himself from burnout, Nicholas restricted his email use to the confines of the workplace. Case manager Wanda reiterated these sentiments:

I don't check my work email at home. I'm done with work unless something comes up. I've talked to my manager about it, and told her I don't use my work email [when I'm not at the hospital]. I told her if she needs to contact me or if something has happened with the team, I said please just call me or text me because I do not check my work email at home. That is my cutoff. That's my little safety thing. Because I know the unit's not going to contact me unless I know it's something they're *really* concerned about. And I'm just not going to follow emails on the weekend. I don't want to be *thinking* about work all the time.

As much of her workday was spent in front of a computer checking email, Wanda described the mental break she needed from the device. Thus, she set the boundary of refusing to

check work email at home. She gave her manager the courtesy of knowing this information, and further coupled her decision with boundary regulating by giving her phone number to select individuals in case they needed to reach her for emergent purposes. Thus, Wanda displays how the boundary work strategies performed by participants to manage organizational and personal roles were not used in isolation.

Table 6.6 synthesizes the boundary work of social workers and case managers when faced with incongruent organizational role demands and personal preferences.

Organizational/Personal Incongruence

~*AT WORK:*

Their manager strongly encouraged them to use SecureText. While they were not required to download the app on their personal phone, SecureText on a mobile phone was the most efficient and common form of communication.

Strategy Used Empirical Example

~Boundary ceding “Because I’m covering different floors, I feel like I have to use my [personal phone]. I’d rather not use my own phone for work stuff, but so many people I talk to mainly use SecureText, so I need to have my [personal] phone on me.” —Mary, NICU and cross-coverage social worker

~Boundary regulating – screen the contact Social worker Gwen dismissed messages from personal contacts in areas visible to patients, but they were more likely to answer personal messages in the privacy of their own offices.

~Boundary enforcing – restrict use Social worker Julia used an entirely separate mobile phone mobile phone designated for work purposes. She kept her personal mobile phone in her office desk drawer during the workday to minimize distractions.

****OFF WORK:***

Their manager did not expect them to answer work messages after hours, but because many had their SecureText on their personal phones, work messages could be difficult to ignore.

*Boundary regulating – consider the context “I’ll answer it if I’m intrigued, like there might be something interesting going on, or maybe something in the rumor mill. But I have no problem not answering.” —Nicholas, social worker

*Boundary enforcing “I do not check my work email at home. That is my cutoff. That’s my little safety thing.” –Wanda, NICU case manager

Table 6.6: Boundary work of social work/case management when faced with organizational/personal incongruence

PERSONAL/PROFESSIONAL BOUNDARY INCONGRUENCE & BOUNDARY WORK

While personal and organizational incongruence occurred when participants experienced discrepancies between their personal needs and their role as an employee of Children's Hospital (given their professional group's ICT repertoire and hospital communication norms), personal and professional role incongruence occurred when individuals experienced tension between their personal life roles (such as being a parent, friend, and sibling) and their professional role (such as a therapist or a social worker). Only two professional groups—child life and social work/case management—described experiencing personal and professional role incongruence in relation to their ICT repertoire. In this section, I described how child life specialist Jiminy and individuals in social work/case management worked through personal/professional incongruence in relation to their ICT use.

Child Life Specialist Jiminy and Personal/Professional Incongruence

Child life specialists shared how they often felt that other professional groups in the hospital did not understand their line of work, and, consequently, did not consult child life or leverage their expertise on patient cases. As Acute Care child life specialist Angela shared, "Some people in the hospital don't know what we do, so we have to vouch for ourselves and teach people what our role is about so they know to consult us." Helen, a Trauma Surgery child life specialist, echoed similar sentiments: "[Other hospital professionals] don't know what a child life specialist is or when they're doing procedures, they're not calling you. You have to seek them out and make sure that you're visible and

that people know what your role is.” Participants described how their ICT repertoire, particularly SecureText, helped them connect to their interdisciplinary teammates and made them feel more involved in patient care, especially those working in Acute Care units. Furthermore, child life specialists described how having a diverse ICT repertoire increased their accessibility to other health care professionals, in turn helping them feel more understood in their professional role and a more integral part of the patient care team.

Yet not all professional groups had a diverse ICT repertoire. Many professionals working in the cardiac surgery unit—such as nurse practitioners and physicians—did not use SecureText or have HospiPhones, and they instead used *personal* phone text messages and calls to communicate with one another. The cardiac unit’s child life specialist, Jiminy, described how this presented a professional and personal challenge for her, both when at work and when at home. I next describe how Jiminy managed personal and professional role incongruence when on and off duty.

On Duty: Boundary Ceding

The cardiac surgery unit was new at Children’s Hospital (only running for three months at the time of this study), and Jiminy shared how she wanted to be visible and available so that the team understood her role and consulted with her on patient cases. As she explained during observations, “I try to be present so they know about child life.” Jiminy felt her ICT repertoire was an important key to professional legitimacy. Thus, she inquired early on about the best way to reach her teammates via ICTs. She found, however, that their communication norms violated her personal preferences. As Jiminy explained, “When I started in this role, I asked [my interprofessional teammates] do you all have

SecureText? And they said no. Then they go, ‘What’s your personal number?’ So I gave it to them, but I shouldn’t have.”

Jiminy described how she preferred not to use her personal texting for work purposes. In theory, she felt she *could* have said no to her teammates when they asked for her personal phone number and instead offered her HospiPhone number for phone calls, but she explained texting was the cardiac unit’s primary way for getting in touch with one another. As Jiminy shared, “For work stuff, [personal texting is] how they all communicate, so that’s what’s easiest for them. So I do it, too.” Since her interdisciplinary teammates did not have SecureText and Jiminy wanted to make sure that child life’s perspective was included within the patient care plan, Jiminy ceded her personal phone texting preferences for the sake of her professional role.

Off Duty: Boundary Straddling

When off the work clock, Jiminy described how she still received personal texts from her cardiac team. She elaborated:

I gave [my personal phone number] to them, but I shouldn’t have because they text me at all hours because they’re here at all hours, but I am *not*. So that’s also been tricky with building the program with the team because I want to be available, but not too available.

Other child life specialists did not describe receiving after-hours communication from their interdisciplinary teammates. As child life participants worked during their units’ busiest times, they described how they worked similar shifts as others in their unit and were at the hospital when they were needed most. However, this was not the case for Jiminy. As the

cardiac unit was new at this hospital and an emergency cardiac patient could arrive at any time, the cardiac team's work schedules were not synced. Thus, given they worked different hours and personal texting was the primary form of communication for this unit, Jiminy shared that she could receive personal text messages at any time of the day or night from her cardiac team.

Jiminy felt a sense of professional duty toward child life, as she wanted her discipline's perspective to be included in cardiac care decisions, yet she also wanted to protect her personal time. To manage her personal text messages when off duty, Jiminy described how she straddled her personal and professional roles by always replying to her cardiac team's messages (to maintain her professional role) and simultaneously reminding her interdisciplinary teammates that she was technically off duty (to uphold her personal role). Jiminy shared the following example:

A good example is Wednesday. I left work early because I was coming back to work a late-night event. I got a text from one of the nurse practitioners asking me, 'Hey can I call you for a second?' I said, 'Actually I'm gone but I have to come back later. If it's time sensitive, call Penelope, who's the PICU child life specialist. Her HospiPhone number is this. If it's not time sensitive, I'm happy to call you tomorrow.' But I would say, [personal texting me after work hours] doesn't happen too often, and it's usually things that can wait.

Jiminy described how it was hard to completely take a break from work when she was still answering messages from her cardiac surgery teammates after hours. Yet she justified her decision to straddle personal/professional roles instead of leveraging another tactic (such as regulation or enforcement) as the majority of work text inquiries were infrequent

(occurring a few times per week), and the texts typically came to a halt after she reminded her work contacts that she was off duty and the issue they texted about was non-emergent.

Social Work/Case Management and Personal/Professional Incongruence

When it came to using their ICT repertoire, social workers and case managers did not receive instructions about device use and were aware that they were not required to answer messages after hours. Yet some individuals in this work group described a pressure they felt to respond to work messages when off duty due to their professional, rather than organizational, role. Participants in this group talked about the “burden of being the expert” and described themselves as “the keeper to all the answers” when it came to community information, discharge planning, and at-home care. Mary, a NICU and cross-coverage social worker, described the difficulty in maintaining personal boundaries when serving this gatekeeper role:

We give a lot of information and education to our medical team that other people [in the hospital] don't have. We're the experts on so many things out in the community that we have become an important asset to the health care team, which can be a burden sometimes when they call you at 7:30 at night and say, 'I wouldn't bother you unless it was important, but please just give me five minutes.'

Furthermore, as social workers and case managers were the sole points of contact for community information within their units, they did not have the option to “hand off” their responsibilities after hours. Thus, participants described how they sometimes felt a pressure to respond when away from the hospital as they—as social work or case management experts—were the only ones who had the answer. Next, I describe how the

social work/case management group managed personal and professional roles in relation to their ICT repertoire through boundary regulation.

Off Duty: Boundary Regulating

Consider the context. Case manager Wanda described how she did not mind answering calls or texts from her unit on her personal phone when off duty. As she shared:

I'll answer work messages at home. It's just easier for me to talk something out with folks if they're having a dilemma than them having to angst on it. Yeah, I'd just rather do that. We pretty much have a hard and fast rule that's mine, and that's no non-emergent admissions at night, on the weekends, or national holidays. So if we're thinking about bringing a baby over that could be urgent, let's talk about it. Is his status changing? That might take some perspective. Are they talking heart surgery on Monday and it's Sunday afternoon? Then yes, bring the baby. Just bring the baby. Sometimes we just have to talk about these things.

As Wanda did not want others to be unsettled by issues she could potentially resolve in her professional role, she wanted her unit to call her no matter the time *if* the issue was emergent. Wanda described how she had a "hard and fast rule" on her unit that they were not to call after hours or on holidays unless it was an emergency or an urgent admission (given that Children's Hospital was not a birthing hospital and all babies were transferred from other health care facilities). By setting expectations around what her unit could call about when she was off duty, Wanda was able to regulate the purpose of the after-work messages and knew that their call or text was about something important. As Wanda shared:

They respect my time when I'm off, which is important to me because I respect their [time]. So I know when they contact me, it's not for frivolous things. If they're reaching out to me, there's an important question. And it may be a one-minute

conversation, and it's taken care of. And it does not happen very often. It's not required after hours for us to respond. Although I think most of us [in case management and social work], if our docs or units reached out, we would respond. Just because we're so tied into everything that goes on.

Rehabilitation social worker Nicholas shared how he also used the *consider the context* tactic when regulating personal and professional boundaries through his ICT repertoire. When he had a particular patient case that was complicated or required additional monitoring, Nicholas would check SecureText after hours. As he explained:

I'll read [SecureText after work hours] when I *know* there's a specific case that we have going on where I'm like, I'd rather know about this now than walk up and be caught up in it tomorrow morning. So sometimes I feel obligated to [check] in those instances because I'd rather know something than not know it when it comes to some sort of tenuous case or some sort of fragile situation... anything that could potentially end up being some sort of problem or threat, some sort of derailment. I want to know about it right away. I don't care what time of day it is. I want to know. But if there's nothing serious going on, there's no pans in the fire, and I'm getting a text [when off duty], I can choose whether I read it or not.

For serious or complicated patients, Nicholas felt it was his professional obligation to be aware of any changes in the case and available if any psychosocial needs should arise from the team. By checking messages after hours, Nicholas felt more in control of the situation and "in the loop" with the patient care plan.

Screen the contact. Social worker Claudia shared how she resented answering work-related messages when off duty, yet she recognized her professional expertise was sometimes required when she was not at work. To keep her personal life protected so she could prioritize her roles of grandmother, mother, and wife, Claudia described how she

would only answer certain people when off, namely physicians within her unit who would only contact her if something important came up. Claudia shared the following example:

Last night, we had a pretty complicated kid, and I did what I needed to do before I left work. For whatever reason, the doctors didn't process [the team communication on the patient] or didn't get it until later in the evening. So at 8:37 PM, I get the SecureText from Dr. A, who is a major player, with her assessment and her feedback. Well, I hated that because once I leave here it's my time. I could choose to ignore it, and yet the social worker and the professional in me felt a responsibility to answer... So I answered it because I knew she was a person who would message me for a good reason.

Limit access. Participants also regulated their personal and professional boundaries by limiting their ICT access when off duty. Case manager Roxanne, who did not use SecureText or email after hours, described how she selectively gave out her personal phone number to people at the hospital in case they needed to reach her:

I just don't want to be interrupted in my home life. I want to keep it separated. Only special people [get my personal phone number]... my manager, the Chief Hospitalist, the Chief Medical Officer, important physicians on my unit... People who may *really* need me and may need to consult my professional expertise. They never abuse it. There's no reason to get ahold of a case manager after 5 PM very often because there's nothing we can do about it. Everything that we do happens during the day. The companies we deal with are shut down—they get out at 5 PM also. So what are they going to text me about? Not much. Only 'Did you get the wheelchair?' or 'Do you have this set up?' There's nothing I can do about it actually after five o'clock anyway.

Roxanne only gave out her phone number to individuals in noteworthy leadership positions and people she deemed as important who may need her professional opinion. She justified their access because she trusted they would not “abuse” the privilege of having her personal

phone number. Furthermore, she rationalized her choice to limit access when off duty because problem solving on her end typically had to wait until the following workday, as her primary contacts operated on a similar work schedule. Thus, she felt when giving out her personal number for professional purposes, she likely would not be interrupted when off duty. Table 6.7 summarizes the boundary work of Jiminy the child life specialist and social work/case management participants when they experienced conflicting personal and professional role demands in relation to their ICT repertoires.

Professional Group	Personal/Professional Incongruence	Strategy Used	Empirical Example
Child Life Specialist Jiminy	<p>AT WORK: The Cardiac Surgery team did not have SecureText, and they asked for Jiminy’s personal phone number. She did not want to use her personal phone for work, but she also wanted to be an active member of the care team.</p>	Boundary ceding	Jiminy gave her interdisciplinary team her personal phone number despite her preference not to share her personal phone number for work.
	<p>OFF WORK: Her Cardiac Surgery colleagues worked different hours and would contact her when she was off duty.</p>	Boundary straddling	Jiminy answered their messages but told them she was off work and asked if the request could wait until the next workday.
Social Work/Case Management	<p>OFF WORK: After work hours, social workers and case managers described wanting to leave work at work to be a grandmother, mother, or wife, but they felt pressure to respond to work messages because of their domain expertise (i.e., “burden of being the expert”).</p>	Boundary regulating – consider the context	“They respect my time when I’m off, which is important to me because I respect their [time]. So I know when they contact me, it’s not for frivolous things.” —Wanda, NICU case manager
		Boundary regulating – screen the contact	Social worker Claudia answered her personal phone after work hours when certain physicians in her unit contacted her.
		Boundary regulating – limit access	“I just don’t want to be interrupted in my home life. I want to keep it separated. Only special people [get my personal phone number].” — Roxanne, case manager

Table 6.7: Boundary work of allied health professionals when faced with personal/professional incongruence

CHAPTER SUMMARY

This chapter explored how allied health professionals performed boundary work through their ICT repertoires when faced with incongruences among their organizational, professional, and personal roles. Data analysis revealed that child life specialists, rehabilitation services, and social work/case management enacted four types of boundary work to manage role tensions in relation to their ICT use: *boundary ceding*, *boundary straddling*, *boundary regulating*, and *boundary enforcing*.

I defined *boundary ceding* as a strategy in which individuals yield one boundary's role demands for the sake of another boundary's role demands. Ceding was a strategy used by all three professional groups, yet instances of use varied. Child life specialists used boundary ceding to manage organizational/personal and personal/professional tensions (with personal boundaries ceded in both cases). Rehabilitation services and social work/case management, on the other hand, used boundary ceding to work through organizational/professional and organizational/personal incongruence (with organizational boundaries taking preference in both cases). In instances of boundary ceding, participants felt little to no control over their boundaries and described prioritizing one role over another despite their preferences, such as relinquishing personal role preferences to uphold managerial orders (i.e., child life specialists), work around deficits of hospital-issued devices (i.e., rehabilitation services), or match the mobile demands of one's job (i.e., social worker Mary).

Boundary straddling occurred when participants attempted to uphold two or more competing boundary demands concurrently. This strategy was unique to child life specialists, who were the only professionals facing overt rules from management on what ICTs to use and how to use their tools. When faced with organizational/professional and personal/professional role incongruence through their ICT repertoire, child life specialists described how they would offer disclaimers to patients and their interprofessional teammates so that they could maintain a sense of professionalism without violating managerial orders or their personal time away from work.

Boundary regulating was the most common type of boundary work found in the dataset. I defined boundary regulating as the selective engagement and disengagement of ICTs when role demands were incongruent. Participants in all three groups used tactics such as considering the context, screening the contact or message, and limiting use of one or more ICTs within their repertoire to work through conflicting role demands. Thus, participants ebbed and flowed in terms of what role they prioritized when using ICTs, such as not answering a phone call in a patient's room during sensitive conversations (i.e., professional role prioritized over organizational role) while at other times using ICTs in the presence of patients when they expected an important call, or answering work messages at home when a trusted physician—who rarely communicates after hours—sends a SecureText (i.e., organizational role prioritized over personal role). Social workers and case managers were the only group who regulated by limiting access to an ICT, such as social worker Claudia selectively giving out her HospiPhone number to reduce phone

interruptions and case manager Roxanne sharing her personal phone number with a few key people in case she needed to be reached after hours.

The final type of action taken by participants was enforcing their role boundaries. *Boundary enforcing* involved a strict separation of boundaries, in which participants aimed to enact only one of their competing roles through their ICT repertoire. Like boundary ceding, enforcing involved complete prioritization of one role over another. However, boundary ceding occurred when participants felt little to no control over their actions. Enforcement, on their other hand, occurred when participants actively chose to enact one boundary over another.

When boundary enforcing, child life specialists, rehabilitation specialists, and social work/case management professionals restricted access of specific ICTs—namely their personal phones or HospiPhones—in specific spaces (e.g., patient rooms), at particular events (e.g., physician handoff), or during certain times (e.g., after work) to manage tensions among their organizational, personal, and professional roles. Although child life specialists described restricting access by silencing their personal phones in patient rooms or turning on the Do Not Disturb feature when off work, they could not completely enforce boundaries, as they always carried their personal phones with them despite their preference not to and ,when off duty, they could still see when they received SecureTexts (via the pop-up number in the app). On the other hand, some participants in rehabilitation services and social work/case management described how they did not use their personal phone at work (such as physical therapist Zoe and social worker Julia), and

some refused to use SecureText on their personal phone (e.g., case manager Roxanne) or at all (e.g., physical therapist Zoe).

When regulating and enforcing boundaries, particularly in instances when organizational role demands were *not* privileged through ICT use, rehabilitation services and social work/case management framed these actions as acceptable and supported by management, given that they did not face strict requirements around ICT use. Child life specialists, in contrast, described ICT use instances in which they prioritized their professional or personal roles as “taboo” and perhaps “not be the right thing to do.” Despite this sense of discord, participants who engaged in regulation and enforcement found it more important to privilege professionalism and their personal boundaries over their manager’s desire for them to be responsive through their ICTs.

In the next chapter, the discussion section, I synthesize and expand upon the findings of chapters four, five, and six. I first juxtapose my results with contemporary scholarship and offer the theoretical and practical contributions of studying ICT repertoires and role boundaries in organizations like hospitals. I conclude by describing the limitations of this dissertation and directions for future research.

Chapter 7: Discussion

This dissertation extends scholarship by examining how an underexplored population of hospital professionals, *allied health professionals*, uses ICT repertoires to do their work. I contribute to theory and practice by showing how ICT repertoires and their use are not only situated within the organization and its structures (i.e., access, expectations, and workflow in this study), but also in the multiple role boundaries employees experienced. Although use of ICT repertoires can facilitate communication within and across professional groups, the findings of this dissertation paint a complex picture in which individuals largely described being constrained and *bounded by* their repertoires and roles.

As many health care organizations look toward ICTs as a path to improve interprofessional communication (Graves & Doucet, 2016; Graves et al., 2018; Lo et al., 2012), this dissertation provides concrete examples of how ICT use can instead further complicate interprofessional patient care coordination. Because routines of ICT use are entangled in organizational, professional, and personal practices—and these routines can vary across individuals and teams—hospital professionals can experience ICT repertoire misalignment with their colleagues. When repertoires are not in sync, communication over- or underload can occur, and professionals may miss important patient care opportunities.

In this chapter, I first discuss the theoretical contributions of this dissertation. I then offer practical contributions of this work. I conclude by outlining the limitations of this study, followed by suggestions for future research.

THEORETICAL CONTRIBUTIONS

This dissertation contributes to organizational communication theory in three overarching ways. First, this study advances research on multiple ICT use in organizations by exploring how ICT repertoires, and the organizational structures in which they are grounded, impact communication for allied health professionals. Second, the findings expand repertoire and boundary literature by linking ICT repertoire use to *multiple* role boundaries—namely, organizational, professional, and personal roles in the context of this study. Third, this research offers empirical evidence for in-between boundary work when role demands are perceived as incongruent and pushes against previous literature that frames ICT repertoire use and boundary management strategies as a “choice” for employees, particularly in the context of allied health work. I describe each of the contributions in the proceeding sections.

Exploring ICT Repertoires and their Factors of Use for Allied Health Professions

Although previous studies have made great strides in understanding how and why ICT repertoires are used in various organizational contexts (Jarrahi & Sawyer, 2015; Stephens et al., 2016; Walden, 2016; Watson-Manheim & Bélanger, 2007), these studies either assumed repertoire similarity for users or professional groups (Jarrahi & Sawyer,

2015; Stephens et al., 2016) or they identified the degree to which repertoire selections “matched” across communicators as a limitation of their study and a direction for future research (Watson-Manheim & Bélanger, 2007). As calls have been made to provide more robust research on “the routines and activities that link various organizational units” (Ballard & Seibold, 2003, p. 382) and to better understand communication processes through contextualized, multilevel approaches (Conrad & Haynes, 2001; Flanagin, Park, & Seibold, 2004; Kozlowski & Klein, 2000; Lammers & Barbour, 2006), the present study builds upon previous scholarship and contributes to theory by examining how allied health professionals, who hold multiple team memberships, communicate *within and across their teams* through *similar and diverse* ICT repertoires given their situated experiences of three organizational structures: *ICT access, managerial expectations, and workflow*. Furthermore, through participants’ experience of organizational structures in relation to roles and their and others’ ICT repertoires, allied health professionals shared how they perceived repertoire (mis)alignment and communication load to impact the efficiency and quality of their work. I summarize and expand upon these contributions next.

Communicating within and across Groups through ICT Repertoires

A major contribution of this dissertation is that it demonstrates *many different ICT repertoires can exist within an organization, and those differences can explain important issues like coordination of care*. By separating out child life specialists, rehabilitation services, and social work/case management as three “user communities” (Watson-Manheim & Bélanger, 2007, p. 270) in the hospital, the findings of the present study point to each group using similar and different ICTs and establishing unique patterns of use

through their ICTs to coordinate patient care (see Stephens et al., 2016, for a similar finding on physicians, nurses, and pharmacists).

Furthermore, the results of this study also point to how *repertoires can vary within and across user communities*. Within professional groups, ICTs included in the professionals' repertoire, and use of these ICTs, was not always consistent (see Mazmanian, 2013, for a similar result). This finding was particularly indicative of rehabilitation services' experiences because they *did not* all use the same ICTs. As communication tools varied across the group, so too did use routines. This meant each person in rehabilitation services not only had to learn what tool(s) their professional-group colleagues carried, but also their individual preferences in using their ICT(s).

ICT repertoire similarities and differences also emerged when communicating across professional groups. As allied health professionals were responsible for communicating with interprofessional colleagues across hospital units (and with external organizations, as was the case for social work/case management), participants in this study also considered *other professionals'* ICT repertoires in relation to their own ICTs, such as whether their interprofessional contacts had access to the same ICTs and had similar or different expectations around ICT use. Thus, the findings of this dissertation point to the importance of taking a more fine-grained approach when exploring a "defined community" of users (Watson-Manheim & Bélanger, 2007, p. 268) in ICT repertoire research. To date, repertoire studies predominantly have examined the organization as the unit of analysis without scoping ICT similarities and differences at the meso-level (see Stephens et al., 2016, for an exception). Similar to the approaches of Mazmanian (2013), Stephens and

colleagues (2016), and Leonardi (2011), the findings of this dissertation theoretically advance scholarship by demonstrating the importance of exploring teams, professional groups, units, and other forms of meso-level membership when conducting ICT repertoire research, as repertoire use differences that affect communication can emerge within and across groups.

Organizational Structures and ICT Repertoires

This dissertation also progresses understanding of the organizational structures at play in a hospital when using ICT repertoires. Building on the foundations of structuration theory (Giddens, 1984) and technologies-in-practice (Orlikowski, 2000), Watson-Manheim and Bélanger (2007) argued ICT repertoires must be studied in relation to organizational structures (i.e., the rules and resources members draw upon in their practices; McPhee, Poole, & Iverson, 2014), such as the physical layout of the workplace (Watson-Manheim & Bélanger, 2007) and ICT use policies (Stephens et al., 2017b), that enable and constrain use behaviors. The present study identifies three organizational structures that influenced how participants made sense of and used their ICT repertoires when communicating within and across professional groups: access to ICTs, managerial expectations for use, and workflow.

Access to ICTs. First, the findings revealed *nuances of access to ICTs and how ICT access affects interprofessional communication*. Previous research has investigated *patients'* access to health care technology (e.g., Gordon & Hornbrook, 2016; Kontos, Blake, Chou, & Prestin, 2014) or they have explored health care providers' *acceptance* of ICTs in the workplace (Chau & Hu, 2002; Schaper & Pervan, 2007). The results show that

not only do allied health professionals use technology in different ways, but also these use differences can be traced to the ICTs they are *assigned by the organization*. Participants in child life and social work/case management had expansive ICT repertoires—including tools such as HospiPhones, landline phones, and desktop computers—and each professional in the group was individually assigned their own ICTs by the hospital. Rehabilitation services, on the other hand, had limited access to ICTs, as the group had to share four HospiPhones and eight desktop computers. Because of this deficit, rehabilitation therapists who did not carry a HospiPhone supplemented their repertoires with their personal smartphones, or they used outdated technology like pagers to communicate.

Participants with limited access to ICTs—particularly those who carried only an asynchronous communication tool when working with patients, such as SecureText on their personal phone or a pager—shared how they worried they would not be able to reach others quickly if an emergency occurred. Watson-Manheim and Bélanger (2007) point to perceived urgency as an important contextual element when selecting an ICT within a repertoire, but the results show not everyone had access to a diverse repertoire selection. Indeed, some participants only carried an asynchronous texting application to communicate in the hospital. Stephens and colleagues' (2013) work points to the advantage of having synchronous communication devices in crisis situations: individuals perceived the most urgency when receiving redundant messages through synchronous communication channels, such as phone calls or face-to-face interactions, and those receiving messages through asynchronous ICTs felt the lowest sense of urgency. Although

the degree of urgency participants perceived with each of their ICTs was not a central focus of this study, the results do highlight how allied health professionals with expansive access to synchronous and asynchronous ICTs felt they had more opportunities to reach colleagues in urgent situations.

Managerial expectations for use. Furthermore, this dissertation contributes to ICT repertoire scholarship by highlighting how *managerial expectations are entwined in routines of practice*. Some managers in this study expressed strict guidelines for ICT use, such as always carrying mobile ICTs at work and being quick to respond to group messages. Other supervisors were more flexible in their expectations and encouraged their group members to use their devices as they deemed appropriate for their workflow. This study contributes to a line of research examining ICT use in the context of supervisor-subordinate relationships (e.g., Bhattacharjee, 1998; Erhardt & Gibbs, 2014; Kroon, 2019; Leonardi et al., 2012; Myers, 2015), and the findings of this study propel research forward by demonstrating empirically how different managerial expectations—namely, firm versus flexible orientations to ICT repertoires—affect employees’ use behaviors. Indeed, employees with firm managerial use expectations shared how they were overloaded by within group communication and found it challenging to prioritize interprofessional needs, while those who had highly flexible ICT use described the challenge of having to learn and adapt to the ICTs and use preferences of their rehabilitation *and* interprofessional colleagues.

Scholarship on continuous change and contextual ambidexterity in organizations can help explain the tensions employees experienced in firm versus flexible managerial

expectations. In their foundational work on continuous change, Brown and Eisenhardt (1997) found that providing clear guidelines for work, coupled with open communication for change and employee autonomy, gave employees freedom to improvise in their roles. In organizations where rules were not enforced and responsibilities were unstructured, employees experienced a chaotic and confusing work environment. Work on contextual ambidexterity, defined as “the behavioral capacity to simultaneously demonstrate alignment and adaptability across an [organization]” (Gibson & Birkinshaw, 2004, p. 209), also contributes to this line of theorizing. By combining insights on alignment (i.e., coherence among organizational activity patterns and goals) and adaptability (i.e., ability to reconfigure and change quickly to meet environmental demands), these scholars argue contextually ambidexterous organizations can maintain stability in their practices through alignment, but have enough fluidity to adjust as needed given their orientation to adaptability.

The findings show allied health professionals did not feel they could adapt their ICT use when managerial expectations were too firm, and they did not perceive their ICT use patterns aligned when expectations were too flexible. In high reliability organizations like hospitals, employees need consistent enforcement of responsibilities *and* the ability to adapt in an unpredictable work environment (Sutcliffe, 2011). As ICT repertoires are woven into organizational practices, this dissertation shows how health care managers must consider how their use instructions enable and constrain ICT repertoire alignment and adaptability for their employees.

Workflow. Lastly, the present study points to *three aspects of workflow—work mobility, patient assignments, and shift times—that can play a role in ICT repertoire use in health care organizations*. Research holds work in hospital settings is “characterized by extensive mobility, rapid contexts shifts, changing work priorities, and close interactions between different actors” (Dahl, Alsos, & Svanæs, 2010, p. 446; see also Bardram & Bossen, 2005; Reddy, Dourish, & Pratt, 2006; Sørby, Melby, & Nytrø, 2006), and I contribute to these assertions by showing how ICT repertoire use is tangled in the flow of hospital work.

Degree of mobility. First, the degree of mobility (i.e., mobile versus stationary work) impacted how allied health professionals used their ICT repertoires. Although work is often considered in the context of being co-located or distant, an in-between space—called *mobility work*—exists where employees in a co-located organization move throughout the space to do their work (Bardram & Bossen, 2003, 2005; Stephens et al., 2017b). Research shows mobility work makes hospitals unique from traditional office environments where employees spend of the majority of their day communicating from a desk (Dahl et al., 2010; Stephens, 2018), as hospital professionals can spend much of their work time physically moving around the organization to coordinate patient care (Stephens et al., 2016, 2017b).

At the present study’s research site, those who practiced a high degree of mobility work, such as child life specialists and rehabilitation therapists, relied on mobile ICTs to communicate with their teams. Mobile technologies like HospiPhones and SecureText on personal phones facilitated communication between allied health professionals and their

hospital colleagues when on the move, yet challenges arose when their ICT repertoire did not facilitate their mobile communication needs. Thus, this dissertation supports previous research that argues for considering mobility work demands when implementing ICTs in organizations (Sørensen, 2011; Stephens, 2018).

Patient assignments. How patients were assigned also impacted allied health professionals' ability to coordinate patient care through ICTs. Namely, child life specialists and social work/case managers were more likely to coordinate with their interprofessional colleagues directly, as there was only one child life specialist, social worker, and case manager assigned per patient (see Figure 7.1 for an example). On the contrary, the rehabilitation team often had to coordinate through multiple steps, in which the provider called the HospiPhone requesting information about a particular patient, and the HospiPhone carrier had to then transfer the message to the rehabilitation therapist assigned to the patient that day. The therapist caring for the patient then had to find a way to connect with the provider, such as through a landline phone (as displayed in Figure 7.2) or SecureText if the provider and the therapist both used the app. It is important to keep in mind that this transfer of information was reliant on the HospiPhone carrier knowing who was responsible for that particular patient that particular day: if the HospiPhone carrier was not aware of who cared for that patient, she had to either go to the office and check the patient assignment board, call an office desktop phone in hope that someone would answer and share the board listing, or call a rehabilitation technician and ask the tech to gather the patient assignment information—further lengthening the coordination process.

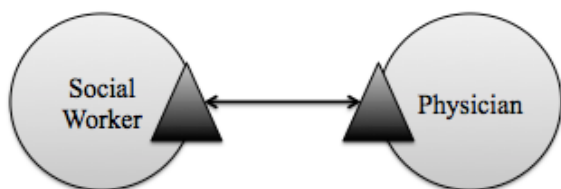


Figure 7.1: Example of one-step coordination between a social worker and a physician. Triangles represent SecureText.

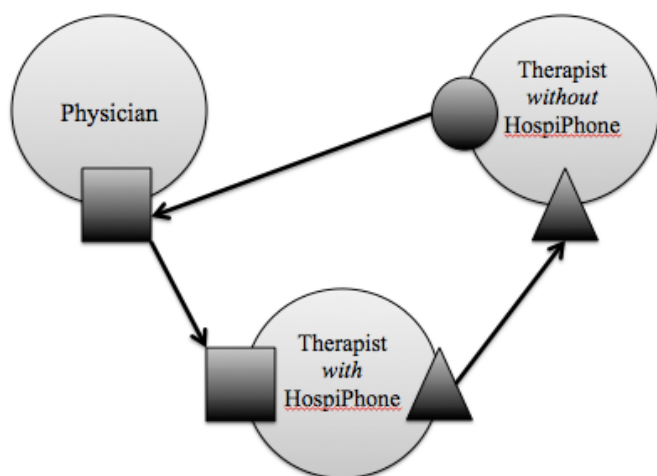


Figure 7.2: Example of multi-step coordination between a physician and two rehabilitation therapists. Squares represent HospiPhones, triangles represent SecureText, and the circle represents a landline phone.

These empirical findings contribute to theorization on *microcoordination* (Ling & Lai, 2016; Ling & Yttri, 2002), in which ICTs are used to coordinate in-the-moment tasks and everyday logistics. Ling and colleagues' work focused on interpersonal contexts, and in her research, Stephens (2018) argued that microcoordinating in work contexts is different from microcoordinating in personal life. Indeed, the findings of the present study support and expand upon Stephens' assertion that microcoordinating—as simple of a

process as it may seem—can be quite complex, particularly in health care contexts. As Stephens (2018) explains, “Microcoordination allows people to coordinate directly without the need for a manager [or middle person] to help them accomplish their goals” (p. 161), yet microcoordination is not feasible when the person who needs to be reached for a patient care concern is unknown. As the findings suggest, coordination was more streamlined when it was clear which health professional was assigned to the patient, involving a quick SecureText or phone call to the right person. However, when it was unknown who was responsible for patient care, many ICT communication chains were created to get the right people connected.

Furthermore, it is important to note that microcoordination was not a guarantee for allied health professionals who were individually assigned patients. The ICTs people had in their repertoire also played an important role in reaching one another. Even if a provider knew the specific allied health professional to contact, the ability to microcoordinate was reliant on having an *ICT in common*. Thus, this dissertation contributes to research by showing how a technological link between the communicating parties is necessary, but not a guarantee, when microcoordination is intended among hospital professionals.

Work shifts. This dissertation also points to theoretical implications for shift work, as the specific hours in which participants were on-duty played a role in ICT repertoire use when coordinating within and across professional groups. Specifically, those who had varied work hours in their professional groups and interprofessional units described more after-hours communication and personal-life interruptions than allied health professionals who had unified shift times or work hours that were understood across the hospital. Most

research on shift work has examined medical residents and nurses, with these studies exploring how shift hours are associated to individual outcomes such as quality of sleep, physical health, and work performance (Alshahrani, Baqays, Alenazi, Al Angari, & Al Hadi, 2017; Ferri et al., 2016; Nena et al., 2018), and team outcomes such as errors in patient handoffs (Ernst, McComb, & Ley, 2018; Militello et al., 2018; O'Brien, Flanagan, Bergman, Ebright, & Frankel, 2015), yet scholarship has yet to explore the relationship between shift work and ICT use in team communication. I argue the impact of shift work cannot be overlooked in organizations where employees have constant connection to the workplace through their ICT repertoires and their teammates work different hours.

Further, the results have implications for research on interruptions in health care. The ways health care professionals are interrupted at work through their ICTs, and the consequences of these interruptions, have been of great interest in the literature (e.g. Ash, Berg, & Coiera, 2004; Balint et al., 2014; Brixey et al., 2007; Vaisman & Wu, 2017; Werner & Holden, 2015). These findings suggest it would be advantageous for future research to focus on how health care professionals are interrupted *outside* of their work hours, as well as the implications of these after-hours communication practices.

Outcomes of Repertoire Use: (Mis)Alignment and Communication Load

This dissertation highlights various outcomes of using ICT repertoires. First, *similarities and differences in ICTs and routines of use affect communication within and across professional groups*. Indeed, when repertoires were aligned (i.e., communicators used similar ICTs and developed shared practices for use), allied health professionals described communication as “efficient” and “predictable,” as aligned repertoires

streamlined their communication flows, and they spent less time and cognitive energy figuring out how to send a message to their colleague. On the other hand, communicating through misaligned repertoires was described as “inefficient” and “frustrating,” as the professionals had to find another communication path to reach their contact, taking up vital time needed for patient care.

Repertoire (mis)alignment contributions. The repertoire (mis)alignment findings contribute to the body of research investigating ICT alignment in organizations (Azad & Faraj, 2007; Leonardi, 2009; Mark & Poltrock, 2004; Mazmanian, 2013). This study supports Mark and Poltrock’s (2004) finding that people who belong to multiple organizational groups can experience ICT use tensions. The authors further argue that all organizational members must adopt and use the ICT in similar ways in order for the technology to function effectively. However, Mazmanian (2013) suggests that *dissimilar* ICT use can be effective in organizations. Studying lawyers and salespeople working at a footwear manufacturer, she found that when a group shares the assumption of heterogeneity, they could develop a stable norm that does not lead to conflict. In the present study, similar to Mazmanian’s (2013) findings, individuals in the rehabilitation services group developed “a *shared* assumption for *heterogeneous* practice” (p. 1226; emphasis included in the original), yet tensions emerged for this group when coordinating patient care. Namely, rehabilitation specialists had to remember *what* ICTs their rehabilitation teammates used and *how* they used their ICTs. Furthermore, these challenges arose for all three allied health groups when communicating across the hospital, as they had to learn the ICTs and use preferences of their interprofessional colleagues. These differences, at the

professional group and interprofessional unit levels, led to lengthy communication chains that took away from time with patients and potential missed patient care opportunities.

Although heterogeneous practice can work for salespeople at a manufacturer using one device to communicate, such as a BlackBerry in the case of Mazmanian's (2013) study, the results demonstrate how assuming heterogeneity may not work in organizations that require intensive coordination among team members using a suite of ICTs. Furthermore, in high reliability organizations like hospitals where efficiency and safety are paramount (Baker, Day, & Salas, 2006; Chassin & Loeb, 2013; Gaba, 2000; Sutcliffe, 2011; Vogus & Welbourne, 2003), inconsistent and unpredictable ICT repertoire use among team members could lead to inefficient patient care processes and errors.

Communication load contributions. The findings also highlight the *relationship between ICTs repertoires and communication load*. In their theoretical development, Stephens et al. (2017) identified seven dimensions of communication overload: *using many ICTs, compromising message quality, having many distractions, feeling responsible to respond, pressuring for decisions, overwhelming with information, and piling up of messages*. This study provides empirical support for Stephens and colleagues conceptualization of communication overload, specifically in relation to *using many ICTs, overwhelming with information, piling up of messages, and feeling responsible to respond* (see Harrison & Stephens, 2019, for similar empirical support).

These findings also advance Stephens et al.'s (2017) conceptualization by contextually grounding overload within the structures of the organization. For instance, child life specialists, social workers, and case managers had expansive *access* to ICTs, as

they used devices such as SecureText on their personal phones, the EHR on their desktop computers, and HospiPhones on a daily basis. These professionals described feeling overwhelmed by using so many ICTs. Furthermore, highly mobile individuals whose *workflow* involved coordinating with multiple groups through one ICT, such as child life specialists who used SecureText for within-group and across-group communication and rehabilitation therapists who carried their group's HospiPhones, described being overloaded by the piling up of messages and being overwhelmed by information. Finally, child life specialists described feeling pressured to respond to messages, given the perceived *managerial expectations* for quick responses.

The results also suggest a dimension to communication overload that has not been explored previously in the overload literature. Specifically, allied health professionals described feeling overloaded by *learning others' ICTs and ICT preferences*. Indeed, one of the greatest challenges participants experienced was keeping up with which ICT(s) their colleagues had and how they used these ICTs, both within their professional group (i.e., rehabilitation services) and across professional groups (i.e., child life specialists, rehabilitation services, and social work/case management). As this finding is grounded in an environment where *multiple* ICTs are at play, communication overload may be conceptualized differently depending on whether one or multiple ICTs are used in a given context.

Communication underload was also revealed in these findings. Allied health professionals described instances where they did *not* have enough ICTs and were underwhelmed by ICT messaging. This was particularly poignant for rehabilitation service

participants who did not have access to a HospiPhone. For example, physical therapist Zoe, who only carried a pager, described how not having similar ICTs as her rehabilitation and interprofessional colleagues made it difficult to reach and be reached by others, and it limited her access to information. As scholars interested in communication load have situated their studies by and large in the concept of overload (e.g., Eppler & Mengis, 2004; Harrison & Stephens, 2019; Lee, Son, & Kim, 2017; Stephens et al., 2017), I suggest exploring scenarios where employees experience the other end of the communication load spectrum (see van den Berg, 2016, for a similar argument).

Connecting the Repertoire Contributions

Although I have discussed the multiplicity of ICT repertoires, organizational structures, and repertoire use outcomes in separate sections, it is important to note these findings are intricately linked. Watson-Manheim and Bélanger (2007) hypothesized, “While communication technology can facilitate more efficient communication and increase the geographic scope of interactions, large repertoires of communication media may actually increase complexity of work practices” (p. 287). The results of the present study show how *large and small repertoires, the organizational structures that facilitate and constrain their use, and experiences of repertoire (mis)alignment and communication load all affect the complexity of work practices among allied health professionals who work on multiple teams.*

Figure 7.3 demonstrates one example of the complex coordination web weaved in a hospital when allied health professionals use their ICT repertoires to facilitate patient care processes. Not only do employees communicate with their professional groups (child

life specialists, in this figure), but they must also communicate interprofessionally with their units (represented by Arabic numerals in this figure). Additionally, allied health professionals use various ICTs (represented by shapes) in their repertoire to reach people within and across their teams, depending on their and others' ICT access, expectations, and workflow. Yet ICTs, and their patterns of use, do not always align for health care professionals. When ICT misalignment occurs (represented by lightning bolt symbols), workarounds are performed (represented by equal signs) to reach the right person, which takes additional time and energy for employees.

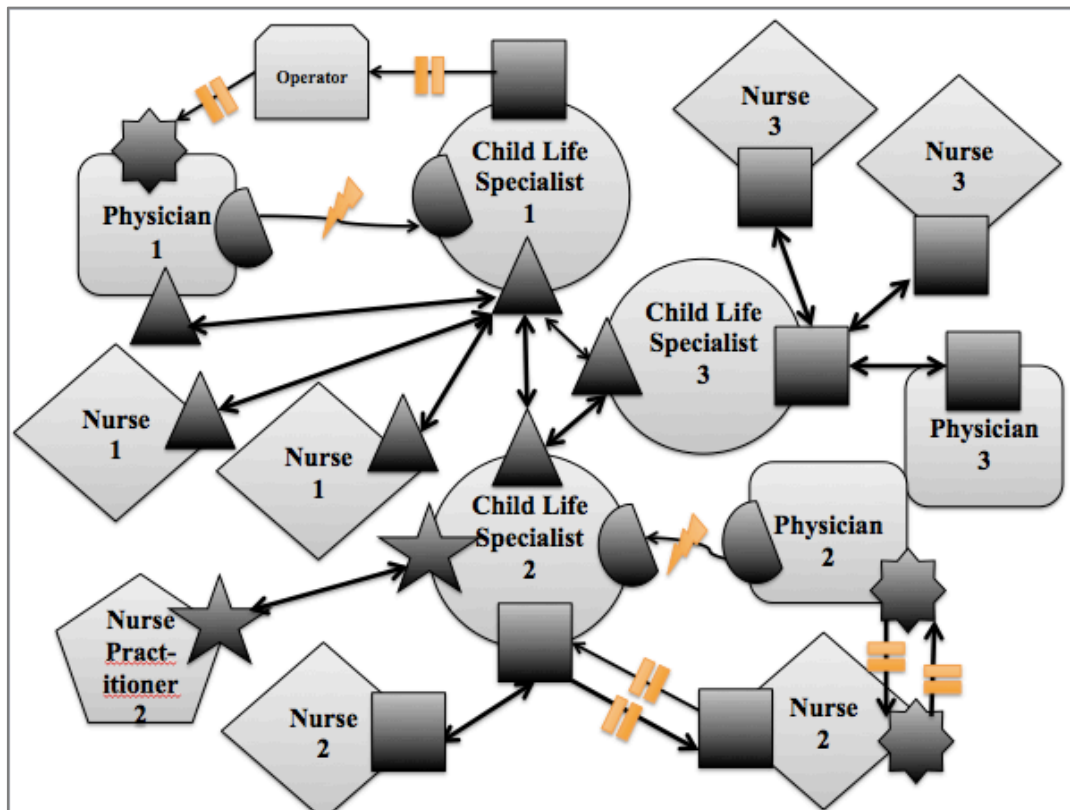


Figure 7.3: A visual representation illustrating communication challenges with disparate ICT repertoires

Linking ICT Repertoires to Role Boundaries

This study is the first to explore ICT repertoires through the lens of boundary theory, and this theoretical positioning revealed that *allied health professionals orient to ICT repertoires through organizational, professional, and personal role needs*. The idea that employees hold multiple roles is not new to the literature; foundational boundary research shows that people walk through life wearing many identity hats (Ashforth et al., 2000; Ashforth & Mael, 1989; Pratt, 2000), such as that of a mother, a friend, and a CEO. Yet what is nuanced and theoretically interesting about the findings is allied health professionals in all three groups drew distinct lines between *organizational* repertoire use as a hospital employee and *professional* ICT repertoire use as a member of a professional discipline. By and large, boundary research to date has considered “organizational” and “professional” as synonymous (e.g., Dumas & Sanchez-Burks, 2015; Foucreault, Ollier-Malaterre, & Ménard, 2018; Rothbard & Ollier-Malaterre, 2016). By taking a within-organization boundary approach, this study problematizes those categorizations, as researchers may miss important distinctions in their data when they do not parse out professional boundaries from organizational boundaries, particularly when studying ICT use at work.

Theorization on the communication of professions (e.g., Abbott, 1998; Barbour & Lammers, 2007; Lammers & Barbour, 2006; Lammers & Garcia, 2014; McAllum, 2018) can help explain these organizational and professional identity distinctions. As an *institutionalized occupation* (Abbott, 1998), professions transcend any particular organization (Garcia & Barbour, 2018) and are characterized by “established knowledge

claims, rule-like standards, autonomous action, and participation in associations external to work organizations” (Lammers & Garcia, 2009, p. 363). Research holds professional affiliation impacts organizational communication experiences in health care. Barbour and Lammers (2007), for example, found that physicians’ knowledge claims of self-regulation, autonomy, and openness to management shaped their communicative practices. In their systematic review, Rouleau, Gagnon, and Côté (2015) described how ICTs can jeopardize nurses’ value of immediacy with their patients. Furthermore, professionalism can act as a control mechanism for organizing work and workers (Carvalho, 2014; Poutanen & Kovalainen, 2016). As McAllum (2018) summarizes, “By deciding who and what counts, professionalism shapes occupational norms, work practices, and personal, organizational, and social relationships (Ganesh & McAllum, 2012) and acts as a form of regularizing control that guides behavior (Flyverbom, Christensen, & Hansen, 2015)” (p. 539).

Scholarship has argued health care has become a contested space between managerialism and professionalism as organizations become more performance-driven, standardized, hierarchical, and cost-conscious (Dent & Whitehead, 2002; Evetts, 2006, 2011; Goodrick & Reay, 2011; Hinings, 2005; Kuhlmann, Rangnitt, von Knorring, 2016; Kuhlmann & von Knorring, 2014). Scholars such as Håland (2012) hypothesize that communication technology “might promote [managerialism], focusing on control, transparency, standardization, and accountability, while [health care professionals] work to hold onto their occupational professionalism, focusing on the human contact with patients and other internal professional judgments of that which is important in [their] work” (p. 772; see also Baker, Warburton, Hodgkin, & Pascal, 2018). The findings of the

present study offer empirical support for this line of theorizing, as the professional norms and practices of allied health professionals were shaken when organizational structures, such as the material properties of assigned ICTs and managerial instructions for ICT use, clashed with professional norms and values. Additionally, participants in this study experienced competing points of control: either follow organizational ICT repertoire use demands at risk of defying professional scripts and values, or abide by professional use demands at the risk of violating organizational norms and rules.

These tensions were further complicated through the enforcement of a BYOD policy that asked employees' to bring their *personal mobile ICTs* to work. Allied health professions expressed tensions in using their personal phones for organizational purposes, as it breached not only their personal role preferences but also their sense of professionalism. Thus, although the use of personal ICTs at work can cut overhead costs for health care organizations (Harris, Ives, & Junglas, 2011; Moyer, 2013), these organizational rules can violate workers' personal preferences and professional demands (see also Stephens et al., 2017b).

Finally, researchers hypothesize that as ICTs are continuously adopted and implemented in the health care sector, health care professionals will likely "have to engage in more complex negotiations in different arenas and on different levels," thus blurring even more intensively the boundaries between managerialism and professionalism (Graves, Doucet, Dubé, & Johnson, 2018, 2012, p. 773; see also Noordegraaf, 2016). Scholars have argued organizational role identification and enactment may be less likely among professionals (Brown, Dacin, Pratt, & Whetten, 2006; Roberts, 2005), particularly

when there is a “lack of congruence between the goals or expectations” of organizations and professions (Ashforth & Mael, 1989, p. 29). If professionals increasingly become pushed to meet managerial standards of efficiency and effectiveness (Goodrick & Reay, 2011) through their ICT repertoires, scholars and practitioners should be mindful of how these demands may backfire on intended work outcomes given health care workers’ strong orientation towards professionalism.

Unearthing “in-between” Spaces in Boundary Work

These findings elaborate on boundary incongruence and boundary work literature by providing a conceptualization of the practices between segmentation and integration for hospital professionals when using ICT repertoires and facing conflicting role boundary demands. Namely, allied health professionals engaged in boundary *ceding* (yielding a role demand for the sake of another), *straddling* (attempting to uphold both boundary demands simultaneously), *regulating* (strategic prioritizing and shifting of boundary demands), and *enforcing* (fully enforcing a role boundary’s demands over another). These findings provide empirical support for a continuum between integration and segmentation (Allen, Cho, & Meier, 2014; Bulger, Matthews, Russell, & Hoffman, 2007; Rothbard & Ollier-Malaterre, 2016; Sayah, 2013; Stanko & Beckman, 2015), with *ceding* most closely linked to ICT integration and *enforcing* most closely associated with ICT segmentation.

Scholarship has argued most individuals are not full integrators or segmentors when using their ICTs (e.g., Allen, Cho, & Meier, 2014; Ammons, 2013; Hislop & Axtell, 2011; Stephens et al., 2017b; Wepfer, Allen, Brauchi, Jenny, & Bauer, 2018). Most research has

studied ICT integration and segmentation behaviors in relation to personal preferences (e.g., Derks, Bakker, Peters, & van Wingerden, 2016; Gadeyne, Verbuggen, Delanoeije, & Cooman, 2018; Liu, Kwan, Lee, & Hui, 2013; Richardson & Benbunan-Fich, 2011), but the findings here support organizational scholarship arguing for *control* as an essential component of how individuals interact with their boundaries and the consequences of their boundary management decisions (Beaudry & Pinsonneault, 2010; Piszczek, 2017; Stanko & Beckman, 2015; Stephens, 2018). Indeed, many participants in this study *wanted to be* pure segmentors with their ICTs at work—i.e., only using organizational ICTs at the hospital, not their personal phones—yet they felt they *could not* enact their preferences and fully segment given organizational and professional demands. Indeed, the structures of the organization (i.e., access, expectations, workflow) *pressured integration* of personal ICTs on allied health professionals: as some had limited *access* to organizational devices, experienced strict managerial *expectations* on what ICTs to use and how to use them, and had mobile *workflows* in which they were dependent on mobile technologies for patient care coordination, participants described how they had little to no choice in using their personal mobile phones to do their work.

Additionally, individuals who *did* opt to segment in their ICT practices described the negative consequences of their boundary work. Participants in rehabilitation services who refused to download the SecureText app and *enforced* no personal phone use at work described feeling left out of conversations and having a difficult time reaching people, as SecureText was described as the most prevalent, and easiest, way hospital professionals communicated. Participants in child life who practiced strategic segmentation through

regulating their boundaries, such as by screening the contact and prioritizing interprofessional conversations over professional group conversations, shared how they worried their actions may be “wrong” and their manager may disapprove if she learned about their behaviors.

Further, those who integrated their personal mobile phones into their ICT repertoires felt an additional layer of conflict, as using their personal mobile phones when performing patient-facing work clashed with their professional ethics. For example, participants who *ceded* their boundaries shared they were better able to keep up with organizational demands, but they felt yielding their professional preferences meant potentially jeopardizing patient trust, respect, and satisfaction. Thus, in health care organizations where BYOD policies are enforced or strongly encouraged, health care professionals may be “damned if they do, damned if they don’t” no matter the type of boundary work performed.

It is also interesting to note that I did not find instances of pure integrators or people who *wanted* to fully integrate in the dataset. Previous research has shown the rise of integration behaviors in the modern workforce (Desrochers, Hilton, & Larwood, 2005; Gadeyne et al., 2018; Reyt & Wiesenfeld, 2015), but this may be because of organizational and/or professional deference rather than personal preference. Indeed, similar to the ideal worker literature (Dumas & Sanchez-Burks, 2015; Harrison, 2017), it may be socially desirable for people to claim they want ICT integration, given that integrating behaviors seem to best align with organizational requests and needs. Future research should seek out pure integrators in health care organizations and examine motivations for integrating

behaviors in relation to their ICT repertoires. Do integrators in health care organizations unite their roles for their own preferences, or are they doing so because of the structural and institutional pressures of their work and professional demands?

Unifying the Theoretical Contributions

In all, this dissertation contributes to ICT repertoire and boundary scholarship by demonstrating how ICT repertoires may not be uniform within or across professional groups, and they are not situated solely within the workplace. In complex organizations like hospitals, employees belong to many “user communities” in the organization through their within-profession and interprofessional teamwork, hold strong professional identities, and they may be asked—or required—to bring personally-owned devices to work that span work and home life. Thus, in addition to repertoire “routines of use” being defined by organizational rules and norms—which can vary from group to group and impact repertoire (mis)alignment and communication load—ICT repertoires are also informed by employees’ professional and personal boundaries. Health care professionals perform boundary work when organizational, professional, and/or personal demands of ICT repertoire use clash. Yet, when faced with limited ICT access, strict ICT use expectations, and a mobile workflow that necessitates use of a mobile ICT not provided by the organization, employees’ can privilege organizational demands at the expense of their preferences and other role needs. Thus, health care professionals, like those in this dissertation, may feel little choice in how they manage or prioritize their boundaries given their perceived lack of individual control over the organizational structures at play.

PRACTICAL CONTRIBUTIONS

The theoretical implications of this dissertation help scholars consider different ways of thinking about ICT repertoires, role boundaries, and their relationship in health care. In addition to contributing to theory, the present study also offers practical implications for those who are “on-the-ground” using, or making decisions about, ICT repertoires in health care organizations. Next, I describe how interprofessional and managerial communication can shape multiple ICT use and role boundaries, as well as offer suggestions for more effective repertoire use.

Implications for Interprofessional Communication

The findings of this dissertation have important implications for health care organizations, as they show how (in)efficiency of communication can stem from professional groups’ *collective use of similar and different* ICTs. It is crucial for health care leadership interested in improving (inter)professional communication processes to focus on the suite of ICTs health care professionals use—and *how* they use these ICTs—when they coordinate care. Indeed, many of the communication issues allied health professionals experienced at the study’s research site were related to ICT and ICT-use-routine mismatches. When organizational structures are not consistently implemented across professional groups, such as uneven distribution of HospiPhones and diverse BYOD implementation, hospital employees can encounter roadblocks when communicating and may engage in lengthy ICT workarounds. Workarounds, as suggested in the present study and reinforced by the literature (Blijleven, Koelemeijer, Wetzels, & Jaspers, 2017; Koppel,

Wetterneck, Telles, & Karsh, 2008; Spear & Schmidhofer, 2005), can run the risk of miscommunication and missed patient care opportunities.

Furthermore, these findings reinforce previous scholarship that argues certain ICTs are more or less suitable for specific professional groups (Stephens, 2018; Stephens et al., 2016). For example, providing rehabilitation therapists with ICTs that only have texting or typing capabilities can be problematic, as these professionals are hands-on for much of the workday and would have difficulty sending a text message when working with a patient. Research shows that when providers use communication technology that is outdated or does not mesh with their workflow, patient safety can be put at risk (Johnston et al., 2015; Martin et al., 2019). Accordingly, practitioners should be mindful of aligning ICT repertoires with professional groups' work needs, as well as focusing on how to sustain a system of ICT repertoires that fosters smooth communication flows among professionals.

Additionally, this dissertation has implications for interprofessional education and onboarding processes. Namely, the results show that effective communication depends in part on professionals knowing about *others'* ICTs and their use routines. Interprofessional education research has found that knowledge of others' roles improves communication processes (Barnsteiner, Disch, Hall, Mayer, & Moore, 2007; Bridges, Davidson, Odegard, Maki, & Tomkowiak, 2011). This dissertation shows that in addition to teaching about what other professionals *do*, educators would be wise to incorporate training and education about what technologies interprofessional teams *use*. For example, in health professional educational programs, curricula can include an introduction to ICT repertoires and the role they play in communication processes. Onboarding directors in health care organizations

could also incorporate training on what ICTs different professional groups use and how they use these tools to orient new employees to communication best practices.

Implications for Health Care Management

There are also importation implications for leadership in health care organizations. Previous research on hospital teams and high reliability organizing shows team members need flexibility in which to adapt and do their work (Mitchell et al., 2011; Roberts, 1990; Sutcliffe, 2011). As the results here suggest, when managers enact firm and seemingly inflexible repertoire use expectations, professionals can experience conflict in using their ICTs in ways that benefit patient care and interprofessional communication processes. Furthermore, research shows health care professionals, who value their autonomy (Barbour & Lammers, 2007; Bucher, Chreim, Langley, & Reay, 2016; Evetts, 2006, 2011), experience job dissatisfaction and lower levels of job commitment when they feel disempowered in their work (Laschinger, Leiter, & Day, 2009; Peterson & Way, 2017). As participants in this study largely perceived a lack of control over their ICT use, managers should be mindful of their employees' professional needs and aim to empower them to use their ICTs in ways that are meaningful to their work, yet still fall within the bounds of HIPAA compliance.

Health care leadership must also consider how managerial communication practices and other organizational structures place pressure on employees' ICT repertoire use outside of organizational time and space. Findings of this study show how managerial expectations to "reply to all group messages" and differing shift times from

interprofessional unit colleagues led to after-hours work communication for allied health professionals. Previous research shows that employees' use of work-related ICTs after hours is associated with increased work-life conflict, burnout, and turnover intentions (Barber & Santuzzi, 2015; Boswell & Olson-Buchanan, 2007; Gadeyne et al., 2018; Mellner, 2016; Wright et al., 2014). Scholarship further argues that distancing oneself from workplace communication after hours is essential for recovery and wellbeing (Boswell, Olson-Buchanan, Butts, & Becher, 2016; Braukmann, Schmitt, Ďuranová, & Ohly, 2018; Sonnentag, 2012; Sonnentag, Unger, & Nägel, 2013) and can increase productivity at work (Fritz, Yankelevich, Zarubin, & Barger, 2010). Thus, health care practitioners and managers should be vigilant in identifying processes that intrude upon health professionals' non-work time and work to encourage employees to disengage mentally from the workplace after work hours, particularly through their ICT repertoires.

LIMITATIONS

As is the case in all research, this dissertation has notable limitations. Although a strength of this study is its focus on allied health professionals, the exclusive attention to these professionals limits the scope of the findings. Specifically, participants described how role boundaries were enabled and constrained when communicating with other professional groups, such as physicians and nurses, through their ICT repertoires. However, the findings I presented did not offer a complete picture of repertoire use in the hospital, as I did not examine how other professional groups—such as those belonging to medical, nursing, and clerical groups—used their ICT repertoires to communicate with

allied health professionals. To develop a deeper and more comprehensive understanding of ICT use in a diverse network of health care professionals, scholars interested in ICT repertoires and coordinating patient care should investigate a wider range of professional groups in their research.

Because hospital employees have busy schedules with little free time, and they can be called away at any moment to attend to patient needs, I had to find creative ways to collect data. My “rolling focus groups” technique gave me exposure to hospital employees and doubled my sample size, but this approach limited my ability to ask a consistent line of questioning in the focus groups. I had to re-prioritize in each focus group to make sure essential questions were answered, as new people could enter the room at any moment. As my interview schedule was often more “unstructured” than “structured” in focus-group settings, those seeking a more standardized approach to their research methods should utilize other avenues of data collection.

Sample diversity is another weakness of this dissertation. Participants in this study were predominantly white (73%) and female (97%). Although these demographics were representative of child life specialists, rehabilitation services, and social work/case management at this particular hospital at the time of data collection, this sample is not representative of allied health professionals at large. In future studies, scholars should seek out the perspectives of allied health professionals in minority groups, as well as aim to incorporate more male perspectives.

Additionally, social desirability bias (Nederhof, 1985) is a potential limitation of this study. I prefaced each observation and interview session by stating there is no “right”

answer or behavior, but it is possible participants' reports and actions reflected what they wanted me to see and hear as opposed to the reality of their work experiences. For example, participants reported they did not look at personal messages on their smartphones while at work. Although I did see participants dismiss personal-life messages during observational sessions, this action may have been because they were aware of my presence and wanted to behave in the "right way." To help mitigate this problem, future researchers can spend extensive time in the field and follow the same participants over multiple observation sessions. This repetition could warrant greater familiarity, trust, and comfort between participant and researcher and help ensure authenticity in the data.

DIRECTIONS FOR FUTURE RESEARCH

In this dissertation, ICT repertoires, and the roles in which they were bounded, enabled and constrained work and non-work practices among allied health professionals in a pediatric hospital. As technology use has important implications for coordination and patient care processes, scholars should continue to explore ICT repertoires and their consequences on work in health care organizations. Based on the findings and implications of this dissertation, I next identify three directions for future research to help propel ICT repertoire and boundary research forward.

Examining Other Boundary Perspectives

One avenue for future research is to expand scholarly understanding of boundary perspectives in health care organizations, particularly in relation to ICT repertoires. The

present study offers extensive detail on the boundaries and boundary work of child life specialists, rehabilitation therapists, social workers, and case managers. However, as boundaries are “structural phenomena” that are both “the medium and outcome of interacting *social processes* between an individual and his or her environment (cf. Giddens, 1984” (Kreiner et al., 2009, p. 706, emphasis in the original), the rules and routines structuring ICT repertoire practices in other health care organizations and professions may proffer different boundary findings.

Furthermore, future research examining ICT repertoires may wish to more clearly parse out the non-work roles individuals’ experience. In the present study, roles separate from the workplace were categorized as “personal roles,” a common approach in extant research (e.g., Bulger et al., 2007; Golden & Geisler, 2007; Mellner et al., 2014; Sayah, 2013). However, in recent years, scholars have taken more specificity in defining personal roles, such as by exploring family roles (Allen, Cho, & Meier, 2014; Kossek & Lautsch, 2012) and romantic roles (Park & Jex, 2011; Methot & LePine, 2016) in relation to boundaries of work, profession, and organization. Thus, when ICT repertoires include technology that is personally owned or used for personal purposes, future scholarship may wish to explore more specifically the various personal roles that are implicated in ICT use and boundary management processes.

Finally, future research may wish to take a broader systems approach to ICT repertoire boundaries and boundary work. In the present study, I only observed and interviewed the three professional groups and did not get the perspectives of other health professionals they interacted with through their ICTs. A richer, more detailed picture of

ICT repertoire use and interprofessional boundary work can be painted by exploring all professional groups involved in the communication web, such as physicians, nurses, pharmacists, technicians, and respiratory therapists. Moreover, gathering data from professional associations and education programs, as well as upper management in the health care organizations, in relation to multiple ICT use can help proffer more robust perspectives of professional and organizational boundaries demands respectively.

Explicating the Affordances of ICT Repertoires in Health Care Contexts

Another avenue for future research is to study the affordances of ICT repertoires. As a branch of sociomateriality (Leonardi, Nardi, & Kallinikos, 2012), affordances are defined as the “mutuality of actor intentions and technology capabilities that provide the potential for a particular action” (Majchrzak, Faraj, Kane, & Azad, 2013, p. 39). In other words, affordances represent the bridge between technology design and use, the material and the social: they are action potentials that emerge through the technology’s features and the social context in which the technology is used (Evans, Pearce, Vitak, & Treem, 2017). As Faraj and Azad (2012) described, “Affordances represent the possibilities of using select features or combinations of features in a way meaningful to user’s goals, abilities, and lines of action” (p. 254). Thus, an affordance framework is helpful for discovering how ICTs are, or can be, used meaningfully by health care professionals.

Previous studies have identified affordances of specific ICTs (e.g., Azad, Salamoun, Greenhill, & Wood-Harper, 2016; boyd, 2010; Ellison, Gibbs, & Weber, 2015; Gibbs, Rozaidi, & Eisenberg, 2013; Treem & Leonardi, 2012; Schrock, 2015; Stephens,

2018), such as mobile phones offering affordances like *connectedness* (“the potential to engage with the mobile technology to establish connections”), and *identifiability* (“the potential to associate a mobile device or service with a single authorized individual), among others (Cousins & Robey, 2015, p. 46). Recently, scholars have begun to examine the affordances of ICTs collectively (Fox & McEwen, 2017; Rice, Evans, Pearce, Sivunen, Vitak, & Treem, 2017), such as Fox and McEwen’s identification of *accessibility* (the capacity to achieve or reach communication), *conversation control* (potential to manage and regulate an interaction), and *network association* (linkage or connectivity; ability to connect with others) as affordances of various communication channels, and Rice and colleagues (2017) finding organizational ICTs to have potential affordances such as *pervasiveness* (potential to constantly communicate with others), *editability* (potential to modify or revise communicative content), *searchability* (potential to find information), *visibility* (potential to see information and make previously invisible information visible), and *awareness* (potential to be cognizant of content and people).

Drawing on the affordances of ICTs have been shown to have positive effects on communication behaviors, such as the affordances of persistence and visibility increasing users’ access to information and social-learning opportunities at work (Ellison, Gibbs, & Weber, 2015; Leonardi, Huysman, & Steinfeld, 2013; Stephens et al., 2019), facilitating new connections (Chan, 2015; Vitak & Ellison, 2015), and enabling organizational fluidity—or the perception of heightened flexibility and flattened hierarchical structures within organizations, which can “be salient to many organizations’ survival, innovation, adaptation, and success” (Chatterjee, Sarker, & Siponen, 2017, p. 1). However, research

also shows affordances are not always positive experiences: rather, the capabilities of a technology may constrain or limit successful work practices as much as they enable them (Fonner & Roloff, 2012; Gibbs, Rozaidi, & Eizenberg, 2013; ter Hoeven et al., 2016) and can sometimes warrant undesired effects and demands (Majchrzak et al., 2013). For example, greater *connectivity* to accomplish one's work can create barriers through perceptions of over-connectedness (Leonardi, Treem, & Jackson, 2010), and *visibility* has been shown to inhibit productivity and increase workload (Gibbs et al., 2013), as well as jeopardize employees' abilities to work around rigid organizational structures and inhibit personalization of work (Timonen & Vuori, 2018).

In the present study, findings suggest employees felt paradoxical effects of affordances in relation to their ICTs. For example, rehabilitation specialists with HospiPhones described having greater *connectivity* to the rest of the hospital, yet this heightened connectedness impacted their productivity negatively. Participants in all three professional groups who used SecureText shared that *visibility* via the "read" receipt let them know whether someone saw their message, which was helpful for coordination. However, this read receipt became problematic when professionals were interested in seeing a message, but they did not want to feel pressure to reply given their colleagues' ability to see that the text was "read" by them. As affordances were not the emphasis of the present study, future scholars may wish to give more focused attention to the affordances of ICTs in health care, as it is a ripe context in affordance research (Anderson, & Robey, 2017; Goh, Gao, & Agarwal, 2011; Petrakaki, Waring, & Barber, 2016b). Indeed, health care organizations like hospitals are unique settings for exploring

affordances. As most organizational communication studies have studied affordances in relation to distributed work (e.g., Ellison, Gibbs, & Weber, 2015; Ellison & Vitak, 2015; Leonardi et al., 2010) and hospital professionals perform *mobility work* predominantly (Dahl et al., 2010; Stephens, 2018; Stephens et al., 2017b), the health care environment may present unique affordance findings. Furthermore, it would be interesting to learn how affordances are enacted across multiple levels and through multiple ICTs in health care settings, and how these action possibilities facilitate and/or constrain communication for health care professionals. Finally, by learning what affordances hospital professionals draw upon, or *wish to* draw upon with their ICTs (such as rehabilitation therapists without HospiPhones desiring greater connectivity), health care organizations may be able to better align repertoires to the action needs of their employees.

Exploring ICT Repertoires, Stress, and Burnout for Health Care Professionals

Finally, scholars should explore the relationship between ICT repertoires, stress, and burnout. In the data, there were many instances where allied health professionals described being stressed and overwhelmed when discussing how they use their ICT repertoires. Ragu-Nathan, Tarafdar, and Tu (2008) introduced the concept of technostress, or stress experienced when using technology in organizations, which has been associated with decreased organizational commitment (Tarafdar et al., 2008), reduced job satisfaction (Tarafdar et al., 2010), declined productivity (Tarafdar et al., 2007), and decreased mental wellbeing (Salanova, Llorens, & Cifre, 2013). In a similar line of work, ter Hoeven, van Zoonen, and Fonner (2016) found that communication technology use was related to

decreased engagement at work and burnout, or the emotional exhaustion and depletion a person experiences from prolonged stress (Maslach, 1982; Maslach & Jackson, 1984; see also Barley, Meyerson, & Grodal, 2011; Leung, 2011). Yet very little is known about how ICT use, and ICT *repertoire* use more specifically, impacts stress and burnout among health care professionals.

It is no surprise that health care organizations are inherently stressful workplaces (Vorell & Carmack, 2015). Health care professionals have some of the highest levels of work stress across industries (Ricker, 2014), and their stress impacts their ability to care for patients (Friedan, 2016; Ray & Apker, 2011). Additionally, research shows burnout is rampant among health care professionals (Embriaco, Papazian, Kentish-Barnes, Pochard, & Azoulay, 2007; Felton, 1998; Leiter & Maslach, 2009; Shanafelt et al., 2016; West, Dyrbye, & Shanafelt, 2018), which has been associated with heightened intentions to leave one's profession and suicidal ideation (Dybyre et al., 2017; Shanafelt et al., 2011, 2014). As research shows singular ICT use (e.g., Sergeeva et al., 2016; Stephens et al., 2017b) and repertoires of ICT use (as is the argument of the present study) have consequences for hospital professionals' work, it is imperative for scholars to learn more about how ICT repertoires affect processes of stress and burnout for health care professionals, as well as research ways to remedy these concerns.

Appendix: Interview Schedule of Questions

I. Pseudonym Introduction & Role

First, I'd like for you to say your pseudonym, how long you've worked here at Children's Hospital, and what's your job/role.

II. Professional Identity

1. What are your work roles and responsibilities?
 - a. What is your professional duty as a _____?
2. What does being a _____ mean to you?
 - a. What guidelines and principles [shape your work/do you live by] as a _____?
 - b. What are your goals as a _____?
 - c. What makes an excellent/successful/effective _____?

III. Your Technology Use

I'd like for you to think about your everyday routine and experience with communication technology here at work.

1. What technologies do you use to communicate at work?
 - a. Probe: mobile phone, EHR/desktop computer, social media, etc.
2. Do you use different communication technologies for different tasks? If so, how?
 - a. What are you supposed to use each device for?
3. Using your communication technology, how do you get in touch with other _____? [their professional group]
4. Using your communication technology, how do you get in touch with people outside of your professional group through your communication technology?
5. Are there any *formal* rules or policies on how to use these devices? If so, what are they?
6. Are there any *informal* rules or policies on how to use these devices? If so, what are they?
7. How did you learn the "rules" for how to use each device?

8. What kind of training did you receive on how to use these devices?
9. Think again about all of these different technologies you use as a whole. When you think about communication technology in general, what is stressful about using technology at work? As a whole, what is helpful about using technology here at work?
10. How does using ICTs as a whole help you accomplish your professional duty?
11. How does using ICTs as a whole hinder your ability to accomplish your professional duty?

V. Specific Technologies (e.g., EHR, Phone, Texting)

Now we're going to focus on specific technologies that you use. Let's focus on Technology A.

**Technology A, B, C, etc. depend on the technologies they identified in previous questions.*

1. How do you use Technology A in your work?
2. How do you know how to use Technology A?
 - a. Probe: What are the norms of using Technology A?
 - b. Probe: Are there any formal or informal rules in place for using Technology A?
 - c. Probe: How did you learn about how to use Technology A?
3. Does Technology A help you with your work? If so, how?
4. Does Technology A hinder your work? If so, how?
5. Can you tell about a time when using Technology A was challenging?
 - a. Probe: Can you tell me about a time when Technology A prevented you from reaching your goals?
6. What about Technology A is stressful to you?
 - a. Probe: What is it about the technology itself?
 - b. Probe: What about how you communicate through Technology A?
 - c. Probe: What about other people's use of Technology A?

7. Think about a specific time when Technology A was stressful. How did you handle that stress?
 - a. Probe: Are there any other ways you cope with stress in relation to Technology A?
8. Can you tell about a time when using Technology A was helpful?
 - a. Probe: Can you tell me about a time when Technology A helped you reach your goals?
9. What about Technology A is helpful to you?
 - a. Probe: What is it about the technology itself?
 - b. Probe: What about how you communicate through Technology A?
 - c. Probe: What about other people's use of Technology A?
10. How does using Technology A help you accomplish your professional duty?
11. How does using Technology A hinder your ability to accomplish your professional duty?

Let's focus on Technology B.

1. How do you use Technology B in your work?
2. How do you know how to use Technology B?
 - a. Probe: What are the norms of using Technology B?
 - b. Probe: Are there any formal or informal rules in place for using Technology B?
 - c. Probe: How did you learn about how to use Technology B?
3. Does Technology B help you with your work? If so, how?
4. Does Technology B hinder your work? If so, how?
5. Can you tell me about a time when using technology B was challenging?
 - a. Probe: Can you tell me about a time when Technology B prevented you from reaching your goals?
6. What about Technology B is stressful to you?
 - a. Probe: What is it about the technology itself?
 - b. Probe: What about how you communicate through Technology B?
 - c. Probe: What about other people's use of Technology B?

7. Think about a specific time when Technology B was stressful. How did you handle that stress?
 - a. Probe: Are there any other ways you cope with stress in relation to Technology B?
8. How does using Technology B help you accomplish your professional duty?
9. How does using Technology B hinder your ability to accomplish your professional duty?

Let's focus on Technology C.

1. How do you use Technology C in your work?
2. How do you know how to use Technology C?
 - a. Probe: What are the norms of using Technology C?
 - b. Probe: Are there any formal or informal rules in place for using Technology C?
 - c. Probe: How did you learn about how to use Technology C?
3. Does Technology C help you with your work? If so, how?
4. Does Technology C hinder your work? If so, how?
5. Can you tell me about a time when using technology C was challenging?
 - a. Probe: Can you tell me about a time when Technology C prevented you from reaching your goals?
6. What about Technology C is stressful to you?
 - a. Probe: What is it about the technology itself?
 - b. Probe: What about how you communicate through Technology C?
 - c. Probe: What about other people's use of Technology C?
7. Think about a specific time when Technology C was stressful. How did you handle that stress?
 - a. Probe: Are there any other ways you cope with stress in relation to Technology C?
8. How does using Technology C help you accomplish your professional role?
9. How does using Technology C hinder your ability to accomplish your professional role?

**If time, I will ask about more technologies that are used.*

V. Multiple Technologies

1. Do you use multiple communication technologies at once? If so, how?
 - a. Probe: Tell me about a time when you had to use multiple technologies simultaneously or close to at the same time.
2. Is using multiple technologies at one time easy or challenging? If so, how?

V. Others' Technology Use

1. What sort of relationship do you have with other professional groups?
 - a. Probe: doctors, pharmacists, MAs, lab
2. Do they have similar communication tools and systems as you do?
 - a. What ICTs do they have?
3. How do they use their communication technologies?
 - a. Do they use the technology in similar or different ways?
 - b. Is their use appropriate? Inappropriate?
4. Can you think of a time when you were frustrated by a communication technology interaction with someone in a different profession?

V. HIPAA

1. What does HIPAA compliance mean to you?
2. How do you employ HIPAA in your professional role?
3. How does HIPAA help you do your job?
 - a. What about in relation to technology use?
4. Are there times when HIPAA has made it challenging to do your job?
 - a. What about in relation to technology use?

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