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Changing Culture in Healthcare

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Abstract

Changing Culture in Healthcare

By Howard Chiou

The medical community has increasingly focused on changing its culture. The reasons for this are two-fold— first, culture is hypothesized as a significant driver of mortality from medical error. Second, the rising complexity of healthcare delivery has necessitated the shift from traditional models emphasizing the autonomy of individual practitioners towards interdisciplinary teams. Despite an intense focus on quality improvement, however, healthcare has proven resistant to change and knowledge of how to implement such changes remains extremely limited. The process of cultural change and its conceptualization needs to be better understood by both researchers in anthropology and the healthcare implementation sciences.

Ethnographic tools are critical for capturing this complex process of social and cultural change within hospitals. Drawing on methods from both cultural anthropology and healthcare quality improvement, this manuscript is a multi-sited ethnography of inpatient hospital units implementing an intervention called the “Unit-Based Care Model.” The UBCM was intended to facilitate teamwork between doctors and nurses—including bedside multidisciplinary rounds, safety checklists, and dyadic physician-nurse leadership. This ethnography builds comparative case studies of hospital units in the United States and Australia, drawing on data from participant observation, interviews, and quantitative safety culture questionnaires.

The central investigation of this manuscript is one of a curious and unexpected paradox. While the UBCM successfully disrupted norms on one American unit, the intervention had little effect on existing hierarchies on the other. In contrast, the Australian units utilized a different implementation strategy altogether. Explaining this variation requires an understanding of hospital units as cultural systems, and the interactions between UBCM and its local context. *Changing Culture in Healthcare* illustrates the social and cultural nature of a complex change, and highlights a fundamental epistemological tension between the values of medicine as an evidence-based science, and medicine as an applied practice. This research further demonstrates the utility of the anthropological concepts of meaning and culture, and the clear need for translational social sciences to bridge anthropology and medicine.

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- CH 1 -

THE FATAL PARADOX OF CHANGE IN HEALTHCARE

Primum non nocere

Doctors and nurses inadvertently kill more Americans every year than firearms, car accidents, or plane crashes.

In 2013, the U.S. Centers for Disease Control (CDC) reported 33,636 deaths from firearms, which included homicides (11,208), suicides (21,175), and deaths from accidents (505) (National Center for Health Statistics 2015). During the same year, the CDC attributed another 32,719 deaths to motor vehicle accidents, from cars (11,977), trucks (9,155), pedestrians (4,735), and motorcycles (4,668). Plane crashes accounted for 429 additional deaths (National Transportation Safety Board 2015). The total number of deaths due to firearms, car accidents, and plane crashes is 66,784, or equivalent to a Boeing 747¹ crashing once every two or three days.

Collecting this type of data for basic causes of death is challenging. The U.S. CDC National Vital Statistics System relies on death certificates to identify causes of death (Hetzl 1997). This system has been criticized as being unreliable, as physicians typically do not receive training in how to complete death certificates (Smith Sehdev and Hutchins 2001), and agreement on primary causes of death is poor between physicians (Messite and Stellman

¹ Aircraft passenger capacities vary dramatically based on carrier configuration. While passenger capacities for specific aircraft by carrier are publically available, passenger capacities for specific aircraft averaged by actual use are not. These calculations have assumed an average capacity of 400 – 450, which are considered most typical for Boeing 747s in use (Configuration design engineer, personal communication).

1996). Identifying a principal cause of death can also fail to capture the multiple morbidities that often underlie a single patient's death (Johansson, Westerling, and Rosenberg 2006)—for example, the most proximal cause of death for an individual might be cardiac arrest, but the same patient may have suffered from pneumonia, diabetes, and breast cancer.

In contrast, identifying preventable medical error is considerably more problematic². Medical errors are not recorded on death certificates, and identification of medical error requires a subjective determination that a preventable error was made. Considerable financial and legal pressure also exists for both individuals and institutions to suppress or otherwise under-report cases of medical harm (Mazor, Simon, and Gurwitz 2004). Consequently, most estimates of preventable medical error are dependent on time-intensive chart reviews, a process that is both subjective and expensive (Hayward and Hofer 2001).

Approximations of preventable medical error are therefore considered to be likely *underestimates* of the true rates, but every indication suggests that rates are very high. In a 1998 report entitled *To Err is Human*, the U.S. Institute of Medicine (IOM) famously estimated that between 44,000 and 98,000 deaths occur every year due to preventable medical harm (Institute of Medicine 2000). A more recent study of deaths from medical error, using a retrospective chart review based on data from 2008-2011, found the true death rates to be considerably *higher*, between 210,000 and 400,000 deaths per year (James 2013). The wide variation in these rates is reflective of the fact that the true error rate remains unknown, as systematic and reliable data sources for medical error simply does not exist.

² The methodological issues that contribute towards the wide variation in estimates of medical error are reviewed thoroughly elsewhere (Wachter 2012). In brief, the reasons are as follows: 1) Individual hospital systems largely rely on the self-report of doctors and nurses to generate incident reports, but these are voluntary, underused, and institutions have no obligation to report this data publically. 2) Consequently, researchers must conduct secondary chart reviews, or utilize “trigger tools” to screen chart reviews in a retrospective fashion (i.e., identify certain patterns of care that are suggestive of errors). 3) Delineation of what is considered a preventable medical error remains subjective, and reliant on the clinical experience of investigators. These methodological issues do not detract from scientific consensus that the true error rate is very high. Healthcare's approach to medical error should also be contrasted to that of aviation, where all accident investigation reports and statistics are available in a public database (National Transportation Safety Board, n.d.).

Within these ranges, however, medical error would be the eighth leading cause of death in the United States at best, and, at worst, the third leading cause of death. If measured in plane crashes, *these numbers were equivalent to one or two Boeing 747s crashing every single day.*

As a medical student, I was shocked to learn of these numbers. Medical error was not a topic taught within my medical school curriculum, and my experience is confirmed in parallel surveys of both physicians and the general public— both groups highly underestimate the prevalence of harm from medical error (Blendon et al. 2002). Official mortality reports from the U.S. Centers for Disease Control do not include estimates of death from preventable medical error. However, when I plotted estimates aside the other leading causes of death, medical error towered above mortality estimates for renal disease, influenza, diabetes, and Alzheimer’s disease. I felt as though I had discovered I was part of a conspiracy.

The lack of knowledge and action on preventable medical error is paradoxical and hypocritical. Medicine holds “First, Do No Harm” as central to its ethos. Yet every indication is that healthcare has been resistant to change, despite scientific evidence of harm and explicit clarion calls for change over the past decade. A study of hospitals in North Carolina, chosen for their high engagement for patient safety efforts, found no decrease in harm rates from 2002 – 2007 (Landrigan et al. 2010). In core measures of patient safety, the Agency for Healthcare Research and Quality (AHRQ 2008), found a median change of only 1% per year between 2000 and 2005 and 3.6% per year between 2012 and 2014 (Agency for Healthcare Research and Quality 2015). National patient safety surveys conducted in 2014 suggest that 56% of all hospital workers in the U.S. still report hierarchical cultures of blame in their workplaces (Agency for Healthcare Research and Quality 2014).

Research has further demonstrated that even the simplest changes in behavior have been curiously difficult to implement. There is clear evidence, for example, that surgical

checklists can reduce mortality by half (Haynes et al. 2009), yet resistance to actually using checklists is commonplace (Winters et al. 2009). Similarly, simple infection control procedures can reduce catheter-associated bloodstream infections by 66%, but both bedside staff and administrators can be highly resistant to their implementation (Dixon-Woods et al. 2013). It is also notoriously difficult to encourage hospital staff to wash their hands, despite clear evidence that doing so decreases the transmission of infections between patients (Chassin, Mayer, and Nether 2015; Erasmus et al. 2010).

If healthcare has a hierarchical structure with its central ethos to do no harm— with many commonalities with other industries like aviation that has been able to reduce error rates— *why has healthcare been so resistant to change?*

The Rise of “Pit Crew” Medicine

Outside of medical error, healthcare has changed remarkably quickly over the 20th century. In the first half of the century, medical scientists were first learning about ABO blood types, and new x-ray technologies were just starting to be used clinically. Hospitals were previously places where the homeless went to receive charity, food, and housing before they died, and American hospitals only began to be viewed as places of first resort for the first time (Risse 1999). In contrast, modern medicine now looks dramatically different. Hospitals have become gleaming places capable of delivering treatments that decrease

suffering and save lives. Medical knowledge has grown exponentially, and current estimates of medical knowledge encompass over 10,000 diseases, 3,000 medications, and over 1,100 different laboratory tests (Gillam et al. 2009).

One striking side effect of this rapid technological change is the new need for multiple, highly specialized caregivers. In the past, medicine was built for—and delivered by—individual caregivers who worked independently. Even our popular images of medicine have long been situated in the “cowboy” surgeon, “godlike” doctor, or a “burly” nurse, holding the model of healthcare providers working alone as ideal and desirable (Madison 1996; Cassell 1986).

Due to the rapid increase of medical technology and knowledge, however, modern biomedicine now requires the coordination of many people for increasingly complex diagnoses and treatments. “You can’t hold all the information in your head any longer,” writes Atul Gawande (2011), “and you can’t master all the skills. We train, hire, and pay doctors to be cowboys. But it’s pit crews people need” (*n. pag.*).

Even as the cowboy and pit crew analogy has limitations (Chang 2011), care delivery systems are rapidly transforming towards coordinated care, representing one of the most striking and rapid transformations in the history of Western biomedicine. There are many new models that prioritize teamwork and collectivism between physicians, nurses, and other health professionals—reflected in changes both within clinical practice (Salas, King, and Rosen 2012; D. P. Baker, Day, and Salas 2006; O’Leary, Haviley, et al. 2010) and the structure of care systems (Lawrence 2003; Milstein and Gilbertson 2009; Reuben 2011).

From an anthropological perspective, these changes will be remarkable as physicians have had an unparalleled authority in Western culture, including autonomy over their own work, and cultural sovereignty on matters related to health (Willis 2006; Calnan and Gabe

2009; Starr 1984). Described by scholars as “medical dominance”, this authority not only extends to power over nursing and other health professions (Hahn and Kleinman 1983), but is also structurally embedded within regulations and funding at the level of both institution and state (Bourgeault and Mulvale 2006). In the past ten years, there has been a “proletarianization” of physicians (Elston 1991), a “new professionalism” that emphasizes egalitarian multidisciplinary over older models of medical dominance (S. D. Scott 2008; Lane 2012).

Reforming the organization of work in healthcare, however, has lagged. Most hospitals are still organized around traditional physician practices and specialties, and hospitalized patients today face a bewilderingly large number of caregivers across multiple teams—for example, a complex geriatric patient in the hospital might have an internal medicine doctor as their coordinating physician, but their treatment might also be determined by other consulting doctors from infectious disease, cardiology, nephrology, palliative care, and rehabilitative medicine. This increased fragmentation of care within hospitals leads to increased medical errors from problems in communication (The Joint Commission 2015), as well as increased lengths of stay and costs (Epstein et al. 2010). For the patient, the sheer number of caregivers can be overwhelming and confusing. One study asked patients two days after hospitalization to name one of their hospital doctors—only 32% of patients could do so and only 11% correctly identified their role (O’Leary, Kulkarni, et al. 2010), a finding which has been found elsewhere (Arora et al. 2009).

I wanted to understand, however, what the shift towards pit crew medicine looked like at the bedside. What tensions did they manifest in the context of patient care? How was the practice and culture of medicine changing? What does this teach us about how the

change occurs within the institutions of medicine, and what does it mean for the future of healthcare?

The Challenge of Culture in Medicine

The rise of teamwork models within healthcare is often discussed as a dramatic cultural shift, even by those within healthcare. While some medical anthropologists have suggested that medicine considers itself to be a “culture of no-culture” (J. S. Taylor 2003a), medical error has resulted in a specific and intense focus by healthcare researchers on the institutional culture of medicine. Within the landmark *To Err is Human* report, the Institute of Medicine (IOM 2000) emphasized the critical nature of culture— comparing the culture of medicine against examples from aviation and the U.S. Navy, and highlighting how the isolated, authoritative, and hierarchical nature of medicine creates patient harm. “The biggest challenge to move toward a safer health system is changing the culture,” emphasized the IOM (2001) in a follow-up report, “from one of blaming individuals for errors to one in which errors are treated not as personal failures, but as opportunities to improve the system and prevent harm” (p. 79).

Interest in culture has only continued to rise in the fifteen years since the initial IOM report. Within the MEDLINE database, which catalogues biomedical literature, the rate of publications using the term has risen parametrically. In more recent recommendations, creating cultures of safety is the very first step recommended by the UK National Patient Safety Agency (NHS National Patient Safety Agency 2004), the US National Quality Forum’s “Safe Practice #2” (National Quality Forum 2010), and the Joint Commission leadership standards explicitly state that “leaders create and maintain a culture of safety and quality throughout the hospital” (Schyve 2009, 20).

Historically, the safety culture³ concept in healthcare was derived from its usage within engineering. One frequently cited definition used by the US Agency for Healthcare Research and Quality (AHRQ 2014) suggests:

The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management. Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures. (p. 1)

This definition of safety culture was initially developed by the UK Advisory Committee on the Safety of Nuclear Installations, and first popularized in the report on the Chernobyl nuclear accident (International Nuclear Safety Advisory Group 1992). The concept has been used extensively in aerospace, nuclear engineering, and other such 'high-reliability organizations' (HROs) where failure-free performance is expected (LaPorte and Consolini 1991).

The safety culture concept holds particular explanatory value for engineering. One example is the investigation of the space shuttle Challenger explosion—the proximal cause of the explosion was a technical failure of an O-ring seal in the right rocket booster, yet cultural failures within NASA were upstream of the technical errors. These included a NASA “can do” culture that normalized flaws as acceptable risk, and a social hierarchy that filtered critical information from high-level managers (Vaughan 1996). These “root causes” are cultural characteristics of NASA that would also influence the Columbia disaster in 2003

³ Many safety researchers distinguish between culture and climate, with one as the measurable component or a subset of the other. However, reviews have demonstrated that the two are largely used interchangeably with no true theoretical or practical distinction (e.g. Silbey 2009; Halligan and Zecevic 2011). I have chosen to use only the culture terminology here.

(Columbia Accident Investigation Board 2003). This usage of culture is typical for engineers, where the explanatory value lies in the assumption that culture affects behavior, which, in turn, affects propensities for error.

Amongst engineers, however, there is no consensus as to what culture actually is, and healthcare has similarly struggled to define it. Reviews of the concept can be found elsewhere (Guldenmund 2010; Haukelid 2008; Sammer et al. 2010; Halligan and Zecevic 2011), but commonly used definitions range from culture as behaviors to attitudes to beliefs to organizational processes. A systematic review of the medical literature further revealed that the vast majority of safety culture studies do not define the concept, and in those who do, substantial disagreement existed on its theoretical underpinnings (Halligan and Zecevic 2011). In an expert panel assembled by the UK Health Foundation (2013), the definition of culture that resonated most with their experts was “it’s what you do when nobody’s looking” (3). One researcher has suggested that within healthcare, culture “has the definitional precision of a cloud” (Reason 1997).

This lack of conceptual clarity has generated substantial debate within healthcare. Researchers have struggled to find ways to assess culture in healthcare that would be valid within a positivist scientific framework (Pronovost and Sexton 2005; Nieva 2003; Waterson 2012; Guldenmund 2007). The majority of research within safety culture utilizes questionnaires and surveys, often spanning specific domains (Halligan and Zecevic 2011; The Health Foundation 2013). These domains often include beliefs, behaviors, and structural characteristics thought to promote patient safety— for example, leadership, teamwork, evidence-based, communication, learning, just, and patient-centered (Sammer et al. 2010). This type of approach, however, has been criticized for likely missing the more

nuanced components of culture beyond the pre-established domains (Leslie et al. 2014; Reeves, Kuper, and Hodges 2008; Savage 2000).

Healthcare researchers have also struggled with the question of boundedness, asking if cultures are best delineated at the level of the staff characteristics, hospital units, or the hospital (Pronovost and Sexton 2005). The safety culture concept has been challenged by findings that culture, as assessed through safety culture surveys, varied significantly between ICUs in the same hospital (Huang et al. 2007), and that variation within hospitals is greater than between hospitals (Schwendimann et al. 2013).

These types of questions may appear to be only of theoretical or academic interest, but within healthcare, have real-world ramifications. A lack of understanding of culture in healthcare leads to wasted resources, as hospital administrators employ culture change interventions without understanding of the underlying mechanisms on how to change culture (Morello et al. 2013), whether or not it can be changed (Parmelli et al. 2011), and whether or not culture affects clinical outcomes (Scott et al. 2003). Evaluation of such interventions also becomes hindered, as assessing cultural changes is challenging when the underlying concept is unclear (S. J. Singer and Vogus 2013).

At its worst, however, the culture concept in healthcare has the potential to be abused, and threaten the improvement of patient safety. Some have advocated that there particular hospital cultures that are superior to others, and while these idealized versions may have substantial face validity, they often lack evidence of their superiority. For example, the Manchester Patient Safety Framework (NHS National Patient Safety Agency 2006) stages hospital cultures across five stages from “pathological” to “generative”, with generative as ideal. The framework is designed as a reflection tool to be widely used, but no studies exist

that link its stages of culture with clinical outcomes, and culture remains obscuring of underlying mechanisms of safety.

The obscuring nature of culture is also partially due to a lack of its definition, as the concept has been used to refer to both behaviors *of* individuals, and as a catch-all explanation *for* behavior. When used in this way, culture has the potential to obfuscate power, ignore structural relationships, and allocate responsibility to those with the least agency to create change (Silbey 2009; Szymczak 2014). For example, Szymczak (2014) analyzed how managers use culture to explain lapses in infection control practices, which results in a emphasis on the individual behavior of bedside nurses that can be addressed with training or flyers. This focus on culture, in turn, ignores the underlying political tensions with the respiratory therapists, the surgeons' refusals to attend training sessions.

These tensions about culture in healthcare have largely occurred without input from anthropologists. Reflecting on a systematic review of the culture concept within healthcare safety (Halligan and Zecevic 2011):

The missing piece in the study of safety culture in healthcare is culture itself. None of the reviewed studies were conducted by anthropologists or used ethnography as a methodology. Since anthropologists are considered experts in understanding culture, shouldn't more healthcare agencies and researchers consult these experts when conducting research on safety culture? (p. 341)

Consequently, one of the key aims of this project is to translate anthropological concepts of culture to healthcare. What are the best ways to think about culture in hospitals? How is the culture concept useful, if at all? How might its usage in applied clinical settings differ from academic anthropology?

Experts in Understanding Culture

Answering these questions requires an understanding of the rich anthropological literature on culture. However, while anthropologists are traditional experts on culture, the culture concept has become highly controversial within anthropology, and many cultural anthropologists shy away from the concept entirely. “Questions that so exercised an earlier generation of anthropologists—” writes Knauff (2006, 412), “what was ‘a culture’, how it could be defined, how coherent or disjunctive it was, how one culture intersected another—seem now anachronistic”. Yet, these are the very questions that are seemingly highly relevant in healthcare.

How does this discrepancy exist? Healthcare researchers have debated culture and its merits since the publication of the IOM report in 1999, but anthropological debates of culture date back to the 19th century (Kroeber and Kluckhohn 1952). These debates on culture— whether the concept is useful, how to study it, how to define it—have been vigorous but also highly polarizing (D'Andrade 2000). Reviewing this debate in a comprehensive manner is outside the scope of this manuscript, especially as multiple articles (e.g., Boggs 2004; Brumann 1999; Brightman 1995) and entire volumes (Kuper 2009; M. J. Brown 2008b; Fox and King 2002) are dedicated to the topic.

Given this limitation, I offer a truncated history as to enable subsequent observations. Overall, no anthropological consensus on the definition of culture exists. In a review of the definition of culture, Kroeber (1952) documented, by my count, at least 161 different definitions. Common definitions included culture as sets of symbols (L. A. White 1943), “webs of significance” (Geertz 1973, 5), or a “complex whole” (Tylor 1871, 1). Other definitions have included as information (Durham 1991), patterns of behavior (Geertz 1973),

social habits (Boas 1930), and social heritage (Malinowski 1931; also see review in Kroeber and Kluckhohn 1952). These definitions are provided here only as an indication of the diversity of approaches used within anthropology to study culture, as well as the vast and fuzzy boundaries of the concept.

Towards the end of the twentieth century, however, the centrality of the culture concept was questioned through postmodern critique. These criticisms primarily centered on how culture artificially reifies differences between groups of people, exaggerating boundedness, homogeneity, and timelessness (Brightman 1995; Boggs 2004; M. J. Brown 2008a; Kuper 2009). This perspective viewed any conceptualization of culture as intrinsically reductionist. For example, Abu-Lughod (comment in Brumann 1999) wrote, “The larger problem is that refining and redefining cannot solve the problems created by the fact that the culture concept carries historical accretions and takes its meaning from the many contexts in which it is and has been invoked. The concept is *always contaminated* by the politicized world in which it is used...” (S13, emphasis mine).

Although the discipline has slowly swung towards the center away from postmodernism (Barrett 2011), cultural anthropologists have tended to write about the “cultural” rather than drawing on “culture” as an explanatory concept (Knauff 2006). Anthropologists still study the symbolic or subjective dimensions of the human experience, but have more frequently drawn from concepts like power, discourse, knowledge, and political economy (D'Andrade 2000). Whereas anthropologists previously sought to analyze and compare differences between groups, the overall trend within cultural anthropology has

been to shift away from this type of comparison towards intense studies of the particular (Kuper 2009).⁴

If the culture concept has been so problematic within anthropology, does this mean the concept is not useful for healthcare? After all, as seen in the last section, researchers in healthcare have struggled with many of the same issues surrounding culture as anthropologists—including questions about its definition, boundedness, progressivism, and variation.

However, assuming that the culture concept will not be useful for healthcare simply because of its troubled history within anthropology is misguided, especially as anthropologists do not always explicitly discuss how culture is defined, for whom, and for what purpose. This conversation is critical in the translation of culture to healthcare, as at its very core, the fundamental enterprise of academic anthropological research is very different from the goals of healthcare quality improvement. As an example, Geertz (1973) wrote of anthropology:

Looked at in this way, the aim of anthropology is the enlargement of the universe of human discourse. That is not, of course, its only aim— instruction, amusement, practical counsel, moral advance, and the discovery of natural order in human behavior are others; nor is anthropology the only discipline which pursues it. But it is an aim to which a semiotic concept of culture is peculiarly well adapted. As interworked systems of construable signs (what, ignoring provincial usages, I would call symbols), *culture is not a power, something to which social events, behaviors, institutions, or processes can be causally attributed*; it is a context, something within which they can be intelligibly—that is, thickly-described. (p. 14, emphasis mine)

⁴ Anthropologists may or may not agree with my account of the discipline here. Ironically, writing this section recapitulates many of the problems with the culture concept—I have essentialized, generalized, and reified trends within the discipline. Notable exceptions to this account include many cultural anthropologists (see authors in M. J. Brown 2008b), and approaches from biological anthropologists, whose work with the culture concept have ranged from the natural selection of canoe design (e.g., Rogers, Feldman, and Ehrlich 2009) to culture in non-human primates (e.g., Sapolsky 2006; Koops et al. 2015). Within cultural anthropology, however, my argument is reliant on research and commentary from other experts. Future approaches studying the usage of culture within culture anthropology journals in a quantitative fashion would provide a better understanding of disciplinary trends.

This quotation highlights how the definition of culture can change based on the aim. Here, Geertz is considering culture as a network of signs for the purpose of understanding culture as context, and explicitly denies its ability to be predictive of behaviors⁵. In contrast, healthcare is seeking to do exactly the opposite—use culture precisely for its causal power to explain behaviors, which, in turn, allows for interventions that might encourage behaviors that help prevent medical error. As discussed later in this chapter, the traditions of cognitive and psychological anthropology offer conceptions of culture that are linked with motivation and behavior, and may be consequently less problematic and more appropriate for the end goals of healthcare.

Anthropologists have also argued that the culture concept is not *intrinsically* problematic. While the culture concept has been abused by both anthropologists and non-anthropologists, critiques of culture are not typically against how the concept is defined, but rather how the concept has been used (Brumann 1999). For example, accusations of culture as misleading (e.g., homogenizing, reifying, etc.) is fundamentally based on assumptions that ideas must be shared between all members of a society in order to be considered “cultural” (M. J. Brown 2008a). These assumptions of perfect boundedness, however, is a potential misunderstanding, especially as anthropologists have traditionally grappled with variation within groups decades before the post-modern turn (Borofsky 2008).

A postmodern critic might respond that the concept cannot be divorced from its context, and I would largely agree, arguing that the issue of boundedness poses *less* of a challenge within the context of healthcare. First, whereas much historical anthropological literature analyzed cultural trends within states or ethnicities, delineations of differences between professions is much more clear-cut. Empirically, a rich anthropological and

⁵ The quotation should not be considered representative of Geertz or interpretive anthropology, and Geertz would write differently about the role of culture throughout his life (see Parker 1985).

sociological literature has highlighted the process of socialization for the medical professions (Becker et al. 1961; Bosk 2003; Konner 1988; B. J. Good and Good 1993; Sinclair 1997).

This literature emphasizes how trainees learn not only medical knowledge, but are also explicitly and implicitly taught role expectations, values, and hierarchies— all of which are traditionally considered “cultural.” Especially due to differences in training and professional role, highlighting generalizations of differences between doctors and nurses is far less problematic than gross generalizations of nationalities or ethnicities.

Second, boundedness is also less problematic in healthcare, as the relevant size of social groups is smaller. Many hospital units and service lines are comprised of twenty or thirty individuals, and studying local variations in cultural features is much more feasible in this setting. Fine (2012) uses the term *idioculture* to distinguish the unique properties of small groups: “Since small groups can be observed and members questioned, culture need no longer remain [an] amorphous mist...” (37). Small groups can be uniquely studied as microcosms of larger systems, and diffusion and spread of cultural changes more easily examined.

Anthropologists have argued for decades whether or not the culture concept is generally useful, and whether or not it is generally valid. I do not wish to recapitulate those debates here. Instead, I pose the question of whether or not there are *particularities* within healthcare that creates a context where the culture concept has unique utility. After all, anthropological arguments to cease using the culture concept would likely fail within healthcare—the concept is already widely used and found useful in healthcare and engineering. This alone is insufficient to validate a concept, but the fact that culture is a frequently used emic construct should not be easily ignored. As Brumann (1999) writes:

Denying the existence of culture and cultures will be difficult to transmit to the many that see them, and they will very likely turn to others who may then disseminate their questionable expertise without serious competitors. Any scientific concept is a simplifying construct and has its costs, but once the advantages have been found to outweigh these costs it should be employed with a clear conscience. (p. S13)

If healthcare is to be encouraged to turn to anthropologists as experts in understanding culture, the costs and benefits of the culture concept within this context must be better understood.

The Experimental Unit

When I was initially developing my research plans, I often ended up in conversations where I would tell people I'm interested in cultural changes in hospitals. On multiple occasions, this would be met with a chuckle and followed with a variation on the same joke. "I'll tell you how to change medicine," they'll say, whispering as if telling a secret. "Wait for this generation of doctors to die."

A few months later, I found myself standing in the hallway of a new, experimental inpatient unit within Galen Memorial Hospital. What was most striking about the new unit was that it actually looked exactly the same as every other unit within the hospital. There were no flashy new pieces of technology, no shiny control screens, no experimental treatments. Instead, the unit was testing a simple, highly experimental idea— that doctors, nurses, and patients should all have input and coordination of a patient's care.

This unit was like no other I had ever seen, and it contrasted heavily with my memories as a medical student. Previously, I would be assigned to a team of doctors, and, in turn, the team would be assigned a list of patients scattered throughout the hospital. We would spend our day running between an average of eight different floors seeing our patients, and I learned quickly that writing down patients' room numbers was as important as any other vital sign. On each floor would be different hospital units, with a different group of nurses and social workers. The nurses largely operated independently, and we rarely interacted with them except through written orders or if something went wrong. If the medical student was tasked to coordinate with a nurse, social worker, or another consulting team of physicians, we had to make multiple phone calls and pages just to figure out to whom we actually were supposed to talk.

The experimental unit was different, and was the flagship unit for a new care model. The Unit-Based Care Model (UBCM) featured four main components. First, physicians and nurses only took care of patients on that unit, which made it easier for doctors and nurses to know each other by name. Second, the unit was run by a management team that included both a physician and a nurse—most hospital units only had a nurse as a manager, a consequence of the historical organization of hospital wards, but this nurse had only limited influence over the physicians. Third, clinical outcomes data was collected at the level of the hospital unit. In contrast, clinical outcomes were traditionally only known at the level of the physicians' service lines (e.g., cardiology or surgery), leaving unit managers with scant data to monitor how their quality of care.

The final component was also the most striking, a new daily ritual of rounding called Bedside Multidisciplinary Rounds (BMR). Once a day, the physicians, nurses, social worker, and pharmacist would walk into the patients' rooms together. The doctor would provide a

short medical update, followed by the nurse with a nursing update and a quality-safety checklist. The patient and their family members would also provide their own report, and ask questions. The social worker and pharmacist would then brief the team from their perspective. The rounds ended when everyone agreed on a plan for the day.

The rounds were like nothing I had seen before. The rounds were efficient—as the rounds were semi-structured, the teams seemed to spend no more than five minutes or so in each room. The rounding team also interacted in between rooms, joking and being friendly across disciplines. As opposed to my experiences as a medical student, the doctors and nurses actually appeared to be working as a team. “In my thirty years,” one of the nurses said smiling, gesturing towards the rounds, “this is the first time I’ve seen everyone on the same page.”

This was pit crew medicine, and rapid cultural change. And, I was excited to learn, they were forming a team to implement the new model of care elsewhere in Galen.

An Anthropological Mystery

Something unexpected happened. Originally, the implementation team sought to create the same change on multiple hospital units, using a standardized process to create nearly identical interventions. While the intervention looked exactly the same, they ended up having paradoxical effects—successfully creating a more collaborative culture on one unit, and ostensibly worsening the existing hierarchy on another.

How can we explain this unexpected finding? In this manuscript, I argue that an anthropological framework is critical for explaining this complex change. Hospitals are

messy, complex human systems, and anthropological tools are essential precisely because they can capture power dynamics, relationships, and culture— exposing motivations that cannot be captured with surveys and standard deviations.

This insight has only recently been discussed in healthcare. Although health sciences research has largely dominated by a focus on p-values and the control of variation, there has been an increasing call to recognize healthcare as a sociological, highly complex adaptive system (Sobo, Bowman, and Gifford 2008). The burgeoning field of implementation sciences has been focused on explaining these complex dynamics between local context and its effects on implementation.

Despite the parallels between the two fields, there have been minimal contributions from anthropologists despite the fact that the discipline is organized around culture as a central concept (Halligan and Zecevic 2011). In this research project, I seek to demonstrate how core anthropological concepts offer a theoretical framework with explanatory power for the relationship between context and implementation.

Simultaneously, anthropologists *should* pay closer attention to hospitals, which have been understudied by anthropologists (van der Geest and Finkler 2004). Hospitals remain the most powerful biomedical institution in Westernized countries, described as “modern cathedrals, embodying all the awe and mystery of modern science, all its force, real and imagined” (Konner 1993, 29).

Hospitals are particularly striking as they are simultaneously both culturally distinct, while they also reflect the social contexts in which they reside (Long, Hunter, and van der Geest 2008). Hospitals are total institutions with their own rules, rituals, and hierarchies (Goffman 1961). However, the sub-cultures within a hospital recapitulate its context— for example, the American tendency to discuss cancer as a “war” (Baer, Singer, and Susser 2003,

12), or how clinical interactions reproduce class, gender, or racial conflicts in greater society (M. Singer 1995).

Hospitals fulfill a unique role in Western society, and are worthy of anthropological investigation. Van der Geest (2005) draws parallels with magic and religion, as hospitals are “secular churches, where people perform acts and speak words, which express and recreate their beliefs in the canons of ultimate truth” (p. 145).

This dissertation therefore draws from two primary traditions within medical anthropology. The first is the study of biomedicine as a cultural system (Kleinman 1981). Viewing doctors with the same lens as those we view shamans from other cultures, biomedicine becomes a “sociocultural system with its own cultural framework of values, premises, problematics, explicitly and implicitly taught, and then enacted in social division of labor” (Hahn and Kleinman 1983).

Although anthropologists have long been interested in change at the macro level within societies, ethnographies of micro-level organizational change *within* healthcare, however, are relatively rare. Katz (1999) briefly described how a hospital transitioned towards becoming an academic center, demonstrating how variations in social relations, policies, and cultures affected surgical practice. Similarly, Kellogg (2011) described how surgical residents conducted “combat” in resistance to or support of new work-hour reforms. In this study, the frameworks offered in both of these works are not helpful— for example, resistance was not found to be a major factor.

The second major tradition is critical medical anthropology, which focuses on understanding power structures and hegemony, asking whose social realities are served within healthcare (2003), and how biomedicine performs social control within a capitalistic

context (M. Singer 1990). Critical medical anthropology is useful for uncovering the power relations that would otherwise remain hidden.

However, there has been an increasing recognition that critical medical anthropology has failed to impact healthcare in any meaningful way (B. Good 1994). This failure has largely been due to an aggressive stance against physicians (Scheper-Hughes 1990; Konner 1991), the denial of biological universals, and a disdain of any potential recapitulation of colonial exploitation (Hemmings 2005). These postmodernist approaches are fundamentally at odds with the Cartesian, rational, and empirical focus of medicine (Montgomery 2005), and has resulted in an “epistemological hypochondria” (B. Good 1994, 182) that undermined the ability of critical medical anthropologists to impact either biomedicine or the disenfranchised communities anthropologists purport to help.

While borrowing from tools developed in critical medical anthropology, this manuscript simultaneously aims to echo a “critical anthropological realism” (Baer, Singer, and Susser 2003) or the new vision of critical medical anthropology advocated by Pfeiffer and Nichter (2008)— recognizing that objective realities exist, and critical perspective should result neither in complete relativism nor skepticism. Rather, critical anthropological perspectives should be used to better understand existing cultural systems and provide counter-narratives to the status quo.

An Anthropological Approach

Anthropologists typically spend a year or more in participant observation with the people they study. This project necessitated a broader approach. I was interested in the

process of change within a hospital unit, and how beliefs, values, customs, relationships—culture— changed over time. Working with the implementation team, I chose as my focus two inpatient internal medicine units within Galen Memorial Hospital, and I would spend my time there before, during, and after the planned implementation.

Anthropological research also tends to focus on one cultural group. However, I rapidly discovered that the hospital unit was not as culturally homogenous as the literature (and hospital managers) frequently claimed, and it became rapidly evident that each professional group had their own subcultures within the same geographic space. Desiring a more comprehensive view of the hospital unit, I included in my sample doctors, nurses, administrators, and the other allied health staff working within a hospital unit. During my pilot research and working with an undergraduate student and a resident physician, I also included a small sample of patients.

Ethnographic research is also not usually thought to be generalizable. I wanted to push the limits, however, of what might be generalizable not only to anthropological theory, but also to a rapidly globalizing biomedicine. This project was designed with two main features to maximize its potential generalizability.

First, I used a multi-sited ethnographic approach (Marcus 1995), choosing my field sites to maximize the features of natural experimentation. The two hospital units within Galen were implementing the exact same intervention, and having two units within the same hospital allowed for a quasi-experimental design, controlling for institutional differences. Using a cross-case study methodology (Yin 2003), I established a baseline on each unit, followed the unit as they changed over time, and then compared the units against one another.

Second, in order to establish a greater generalizability across institutions, and, more importantly, across different cultures of biomedicine, I studied an additional hospital unit in Australia. This hospital unit had hired the implementation team from Galen to replicate the model, and I spent four months studying the unit nine months after the implementation was complete.

Extending my research to Australia allowed me to create a “cultural control”—Australian hospitals have similar levels of medical technology as the United States, but a unique history in its development of biomedicine (Baer 1989) and a dramatically different health care system (Blendon et al. 2003). By studying the same biomedical practice in a different cultural context, I wanted to test the unlikely hypothesis that biomedicine is universally practiced across cultures (van der Geest and Finkler 2004), and understand how cultural contexts might localize biomedical practice, even as it was globalized and transported to the other side of the world.

Ultimately, I spent 21 months conducting fieldwork across all three field sites, although the time I spent differed between each site in order to meet theoretical saturation (*Table 1*). At the first implementation site on Unit 3A, I observed the unit for five months before leaving for two months in Australia. Returning to Unit 3A, I conducted an additional five months of fieldwork before shifting my focus to Unit 2B, where I lived for four months. Prior to beginning my research, I also conducted pilot fieldwork at the flagship experimental unit at Galen for an additional three months.

Critics of multi-sited ethnographic research often maintain that ethnographic depth is lost as shorter time periods are spent at each sites (Falzon 2009). The target of this project, however, was to contextualize the intervention within each field site, and to interrogate the *dynamics* of cultural change. Traveling between field sites provided important comparative

data to characterize these dynamics, and I maximized my ability to generate “thick descriptions” by triangulating data between participant observation, interviews, and surveys.

Table 1: Study Sites

	United States			Australia	Implementation Teams	
	<i>Galen Memorial Hospital</i>			<i>Purple Mountains Medical Centre</i>	<i>Galen Memorial Hospital (US)</i>	<i>Healthcare Improvement Coalition (Aus)</i>
	<i>Flagship Unit</i>	<i>Unit 3A</i>	<i>Unit 2B</i>			
Structure		Pre-Post	Pre-Post	Cross-Section		
Duration	3 Months	10 Months	4 months	2 Months	15 Months	3 Weeks
BMR Launch Date	Sept 2010	March 2013	May 2014	October 2012	N/A	Various
Study Period	Nov 2012 - Feb 2013	Feb 2013 - June 2013 Nov 2013 - Mar 2014	Apr 2014 - Aug 2014	July 2013 - Sept 2013	Oct 2013 - Jan 2015	June 2013, Aug 2013, May 2015
Specialty	Med-Surg	Med-Surg	Renal	Med-Surg		
# Beds	24	50	24	26		
Bed Types	Private	Private	Private	Shared (4)		
Geographic MDs	Yes	Yes	Partial	Partial		
BMR Teams	Teaching	Non-teaching	Non-teaching	Teaching		
Patients per Nurse	4	4-6	5-6	4		

Capturing Insiders

At each field site, I immersed myself in the work of the hospital unit through participant observation— an anthropological research methodology that systematically generates knowledge through direct, personal experience (R. H. Bernard 2011). The ability to build rapport with clinical staff was made considerably easier by my status as a medical student, which was critical as access to biomedical spaces has traditionally been challenging for medical anthropologists (van der Geest and Finkler 2004). Being a medical student allowed me to conduct indigenous research, as I could fluently speak the language of medicine, assist in clinical work, and fit into an established social role.

I utilized the medical tradition of shadowing to conduct “negotiated interactive observation” (Wind 2008). As all of the hospital units were within academic centers, both physicians and nurses commonly worked with trainees, and I emphasized that I was a student with minimal medical experience and no nursing training. My participants guided me in what they wanted help with, if at all. I opened and closed doors, fetched items, threw out waste, and occasionally measured vital signs and helped maneuver patients. I found both physicians and nurses readily offered me clinical teaching, as well as conversation about work and life on the hospital unit. I also observed unit group activities, including daily huddles, meetings, trainings, and celebrations.

My role as a medical student allowed me to position myself close to the bottom and slightly independent of the medical hierarchy. I utilized a formal consent process to emphasize that I was an anthropologist-researcher working independently of hospital administration and a formal evaluation team. In public settings, I distanced myself from

hospital management and the evaluation team, and at each field site, I avoided any judgmental statements and emphasized my neutrality towards the intervention.

I was especially careful to associate myself with those lowest on the hierarchy first, working with nurses before working with doctors. My experience was similar to other medical ethnographers (Kellogg 2011)— it was easier to gain rapport as I progressed up the hierarchy, while doing the reverse would have been considerably more challenging. I also opted against wearing my white coat to avoid any physical markers of hierarchy, choosing instead simple professional dress and a clinical badge.

While my status as a medical student allowed me to rapidly build rapport with both doctors and nurses, my role also had several disadvantages. First, my ability to access high-level conversations with senior executives was limited, and I lacked the ability to systematically review quality and financial records of hospital units in detail. Much of my information in these guarded domains were drawn from frequent conversations with unit-level management, as well as key informants. Second, I could not be truly divorced from the existing hierarchy. Interviewing senior attending physicians were sometimes more challenging, for example, although I found that these conversations tended to be frank once they agreed to an interview. Finally, I could not conduct true participant observation, as my medical training was incomplete, and I lacked nursing training altogether. As a consequence, my perspective was not entirely “native” in the traditional sense of participant observation. Within the context of hospital work, however, true participant observation would be neither feasible nor entirely desirable, and utilizing the negotiated interactive approach simultaneously maximized my participation on the hospital unit, while also providing the flexibility to conduct time-intensive fieldwork.

The role I created for myself did generate some ethical tension around my medical expertise, even if limited. Throughout the process, I was careful to avoid contributing expertise in the care with patients. For example, nurses would sometimes ask for my opinion or advice— providing medical knowledge would otherwise threaten my positioning as a novice. The reality was that the nurses' clinical knowledge almost always greatly outweighed my own, although I did find myself intervening twice in order to prevent acute harm to a patient.⁶

When I began working at each field site, informants frequently joked about my status as a “monitor” or a “spy”. I found that this reactivity rapidly waned. Most of the hospital staff frankly shared their opinions and thoughts, included me in hospital gossip or social events, and acted in ways they wouldn't otherwise when hospital management was around. While I felt as I had minimal impact on my informants, however, I found my own objectivity challenged by the relationships I was building. It was hard not to empathize with the hospital staff, and I often found myself inspired by the doctors and nurses I worked beside. These were often amazing individuals, whom I admired for their dedication towards caring for patients.

This subjective immersion onto life on the hospital unit, however, was the primary goal for this type of research, as I embedded myself into the phenomenon I was trying to

⁶ I found it ethically necessary to break this protocol only twice. While working with a new nurse, the patient developed an acute change in level of consciousness. However, the new nurse hesitated to respond, while I was certain that the patient met the institution's criteria to call a medical emergency team. As she was getting a set of vitals, I prompted her to check her blood sugars and hinted towards the need to call a code. “Good idea,” she said, as she went to grab a glucometer.

The same nurse was later asked to perform a blood draw with a patient. After the draw was completed, as she was getting ready to leave the room, I noticed that she forgot to remove the tourniquet. I waited as long as I could, but then I broke my observer role, asking, “Is it now okay to remove the tourniquet from the patient?” “Oh yes,” she said— and then turned to me where the patient couldn't see, and silently mouthed, “Thank you!”

The ethical tensions between being a researcher and a clinician-in-training, however, were significant. I frequently saw doctors and nurses not washing their hands, or utilizing potentially dangerous workarounds in violation of institutional policies. Interfering or reporting to their superiors, however, would have ruined my ability to build rapport and gather data. I maintained a non-judgmental stance as much as possible, and interfered only if there was the possibility of acute harm to a patient.

study. “Becoming the phenomenon... is an objective approach,” writes Jorgensen (1989), “insofar as it results in the accurate, detailed description of the insiders’ experience of life” (p. 65).

Yet, this description is necessarily limited by my subjective experience, modulated by both my own personality and the interpersonal dynamics of my informants. As I inserted myself into the daily life of these hospital units, I also became part of the context. Understanding how the hospital units responded to my presence, however, was also productive in illuminating aspects of hospital life. As a consequence, I include myself in both the analysis and descriptions within the manuscript.

Triangulating Evidence

Conducting anthropological fieldwork within hospitals is highly challenging. The locals are either very busy or very sick, and many hospital spaces are private, privileged, and guarded by legal regulations. The population of each hospital unit is also very small, and in this project, varied between 26 and 50 nurses who worked on each unit.

These challenging conditions required the triangulation of data among four main sources (*Table 2*). First, I systematically generated field notes during participant observation with nurses, doctors, and other hospital staff⁷— before, during, and after implementation. These were highly inductive, and descriptive of interactions between healthcare workers, the nature

⁷ As this study aims to construct in-depth ethnographic cases of cultural data, a nonprobability purposive sample was most appropriate (R. H. Bernard 2011). However, purposive samples are inherently biased, and this study utilized a strategy that balances access to cultural insights against threats to validity.

A combination of quota and maximum variation sampling was used to recruit participants. Initial participants were selected utilizing a key informant approach. After shadowing and interviewing a key informant, I then asked the informant to recommend others. Subsequent informants were then chosen to maximize variation, in terms of individual demographics, roles, and attitudes towards the intervention. I then aimed to fulfill quotas, based on previous ethnographic research suggesting that sample sizes of 10-20 individuals is sufficient for a cultural characterization of a place (Guest 2006). Data were collected until theoretical saturation was met (Mason 2010).

of hospital work, and work cultures on the hospital unit.⁸ Participant observation also provided an opportunity for unstructured interviews (Kusenbach 2003).

Second, hospital staff was invited to participate in semi-structured interviews. I conducted a total of 87 interviews, ranging from 30 to 90 minutes in duration. Due to the busy nature of healthcare work, these sit-down interviews were critical in creating opportunities to reflect. I conducted these interviews in confidential, private spaces—conference rooms, empty patient rooms, and, once, a supply closet. All interviews were digitally recorded and transcribed.

The semi-structured nature of the interviews allowed participants to prioritize the issues most important to them, a strategy appropriate for capturing lived experiences and key domains in detail (Spradley 1979; R. H. Bernard 2011). These key domains included perceptions of the intervention, teamwork and culture of the unit, complaints and wishes of other professions, and personal histories.

⁸ Across 520 hours of participant observation, I generated roughly 190,000 words (~650 pages) of field notes. In addition, I also created 51,000 words worth of field notes from the pilot unit.

Table 2: Sampling Table

	United States			Australia		Implementation Teams		Totals		
	<i>Galen Memorial Hospital</i>		<i>Unit 2B</i>	<i>Purple Mountains Medical Centre</i>		<i>Galen</i>	<i>HIC</i>			
	<i>Pilot Unit</i>	<i>Unit 3A</i>								
Participant Observation (Hours)	32.5	168.73	78.2	107.8		56	76	519.23		
<i>BMR</i>	10	42.48	24.45	32.6			8	117.53		
<i>Nurses</i>	12.5	90.25	32.75	42.2				177.7		
<i>Doctors</i>	10	16	4.5	25.5				56		
<i>Other Obs</i>	0	9	8	6.5		12	68	103.5		
<i>Meetings</i>	0	11	8.5	1		44		64.5		
Participant Observation (N)*	3	13	22%	7	21%	9	12%	6	38	
<i>BMR</i>	13	50		49			6	118		
<i>Nurses</i>	1	11	42%	5	36%	5	13%	22		
<i>Doctors</i>	1	2	9%	1	8%	4	15%	8		
<i>Allied Health</i>	1							1		
<i>Nurse Techs</i>				1				1		
Interviews (N)	16	28	48%	19	56%	44	59%	2	4	113
<i>Nurses</i>		11	42%	8	57%	20	51%			39
<i>Doctors</i>	2	9	41%	6	50%	15	56%			32
<i>Management</i>		3	60%	1	33%	4	100%	2	4	14
<i>Allied Health</i>	1	5	100%	1	100%	5	100%			12
<i>Patients</i>	13									13
<i>Nurse Techs</i>				3	75%					3

*The number of BMR observations are not included in totals. Percentages above are rates of participation of the total eligible population.

	United States				Australia				Totals
	Galen Memorial Hospital		Unit 2B		Purple Mountains		Medical Centre		
	Unit 3A								
Questionnaires (N)	26	45%	28	82%	39	52%		93	
<i>Nurses</i>	21	81%	12	86%	29	74%		62	
<i>Doctors</i>	5	23%	6	50%	8	30%		19	
<i>Management</i>			2	67%	2	50%		4	
<i>Midlevels</i>			4	100%				4	
<i>Nurse Tech</i>			4	100%				4	
Questionnaires POST (N)	26	45%	24	71%				50	
<i>Nurses</i>	16	62%	13	93%				29	
<i>Doctors</i>	7	32%	8	67%				15	
<i>Management</i>	3	60%						3	
<i>Midlevels</i>			1	25%				1	
<i>Nurse Tech</i>			2	50%				2	
Eligible* Population (N)	58		34		75			167	
<i>Nurses</i>	26		14		39			79	
<i>Doctors</i>	22		12		27			61	
<i>Management</i>	5		3		4			12	
<i>Allied Health</i>	5		1		5			11	
<i>Nurse Techs</i>			4					4	

* Eligibility was defined as personnel assigned to the unit during the time of implementation.

Third, I invited participants to complete questionnaires. The questionnaires were a collection of previously validated surveys, including the AHRQ Hospital Survey on Patient Safety (HSOPS) (Agency for Healthcare Research and Quality 2014), the AHRQ TEAMSTEPPS Teamwork Perceptions Questionnaire (Battles and King 2010), measures of interprofessional collaboration (Kenaszchuk et al. 2010), relational coordination (Gittell 2011), and basic demographics. These surveys were chosen because they are commonly used, and form a comparison point for the ethnographic data.

Finally, I collected contextual data, including training documents, reports, and observations of the implementation team. I attended weekly meetings, formal trainings, and five “learning collaboratives”—large conferences where bedside staff, hospital management, and the implementation team discussed shared challenges and potential strategies for success.

Data were analyzed using a combination of three qualitative methodologies. While conducting fieldwork, I generated analytical field notes at the end of each study period using a grounded theory approach, identifying major themes and causal explanations based on a grounding within empirical data, enabling the construction of hypotheses and theoretical models based on the evidence (Creswell 2012; H. R. Bernard and Ryan 2009).

Initial findings were then shared with research participants in a modified focus group format. Focus groups have been established as useful for understanding why participants say or behave in the way they do (R. H. Bernard 2011) — however, I found focus groups useful to ensure validity. Sharing analyses of ethnographic data helps validate insights by gauging agreement, highlighting areas that were missed or unexplored, as well as generate additional data within the subsequent discussion (Cooper 2008).

After data collection was complete, all data were inductively coded within MaxQDA (VERBI Software 1989) to identify major themes within the text. Additional field notes were generated on this process (“memoing”), and this process repeated until no new themes are discovered. After saturation, the themes were compared to identify the most important, and refined into a final secondary codebook.

Throughout this process, a constant comparative method was used to isolate and refine themes, as well as generate causative models (H. R. Bernard and Ryan 2009; Boeije 2002). After analysis for all three hospital units was completed, a cross-case analysis was performed— activities, contextual factors, and thematic constructs that potentially modulated the implementation process was entered into a matrix. Explanatory models were then created using a grounded theory approach.

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Sensitizing Concepts

One of the theoretical goals of this dissertation is to ground explanatory theories in the collected data. This aim is the fundamental premise of a grounded theory approach, which is not meant to deductively test theory, but instead inductively develop explanatory theories grounded in evidence (Glaser and Strauss 1967). These theoretical discussions will draw from two main sources of evidence. First, as culture is an emic concept, how do

participants conceptualize and talk about culture? Participants may use the term explicitly, but they may also implicitly frame their discourse around popular conceptions of culture. Second, participant observation with the implementation teams offer a unique opportunity to better understand the theoretical needs of those seeking to change culture in healthcare. What components of safety change work leads to the popularity of the concept? What theoretical and pragmatic goals does the culture concept fulfill for this population?

In order to establish these goals, I draw on previous theory not to formally test them, but rather as sensitizing concepts (Blumer 1954; Bowen 2006). “Whereas definitive concepts provide prescriptions of what to see,” writes Blumer (1954), “sensitizing concepts merely suggest directions along which to look...” (7). Sensitizing concepts are meant to provide reference points and help guide the ethnographer towards what is relevant. Within social science, these concepts often do not have clear-cut boundaries, but are often instead very broad.

I draw from three central sensitizing concepts, all of which are related to the first: culture, mental models, and theories of impression management. *Culture* remains a primary sensitizing concept, especially given its widespread usage and perceived importance within healthcare. In an effort to partially resolve some of the tensions behind its usage, I draw from an understanding of culture as shared ideas. This conception is strongly influenced by other conceptions of culture as memes or transmittable particles of ideas (Dawkins 2006; Cavalli-Sforza and Feldman 1981). Within this conception, however, it’s important to recognize that the scale of an idea need not be particulate, and could vary from the name of a color to a social hierarchy to an entire religion (Durham 1991; Richerson and Boyd 2005).

The benefits of this particular definition are two-fold. First, the shared nature of culture is central in both anthropological accounts, as well as its popular usage within and

outside of healthcare. In a review of definitions of culture in introductory textbooks, the notion of culture as shared between members of social groups is nearly universal (Borofsky 2008). For its translation to healthcare, the shared nature of culture enables the analysis of differences between groups in behaviors that affect safety, and maximizes its potential as an explanatory construct.

Second, the ideational definition shifts an emphasis away from behavior, especially as defining culture as behaviors (as is common in healthcare) robs the concept of any explanatory power. If healthcare hypothesizes that culture drives behavior, defining behavior as part of culture is in fundamental conflict and ultimately tautological (D'Andrade 1999). An ideational definition instead shifts a theoretical question towards an empirical one capable of engaging with behavior—simply, when do ideas affect behavior, and when do they fail to do so?

The concept of mental models is useful to connect culture to behavior. Originally derived from the psychological concept of *schema*, a “conceptual structure which makes possible identification of objects and events” (D'Andrade 1992, 28), cognitive and psychological anthropologists have considered *mental models* as more general cognitive representations of reality (N. Jones et al. 2011). In turn, these mental models can act as a motivating force as goals for behaviors (D'Andrade 1992). Personal mental models can also be shared and institutionalized, and ultimately be considered cultural models (Shore 1996). Importantly, while individuals may not be conscious of their own mental models, qualitative interviews offer a methodology such that researchers can access underlying models (D'Andrade 2005).

Within this conception, mental models hold not only descriptive or symbolic information, but can also hold what Strauss (1992, 12) calls *episodic information*—previous

experiences and other emotional salience. There are many commonalities here between the idea of episodic information and Shore's (Shore 1996, 318) conception of meaning⁹, which distinguishes between *logical meaning* (i.e., the meaning *of* something) and "psychological meaning" (i.e., the meaning *for* someone). Mental models can be transmitted containing both dimensions.

This conception of mental models is neither deterministic nor completely unrestricted. Mental models are often necessary but not sufficient to affect behavior, and culture does not influence behavior all of the time (see edited volume in M. J. Brown 2008b; D'Andrade 2008; D'Andrade 1999). Similarly, individual mental models are not developed in isolation, but are produced under the influence of other individuals, cultural models, institutions, and ecology/environment, and are never transmitted perfectly (Shore 1996). This imperfect transmission is true of both mental models and ideas in general (Richerson and Boyd 2005; Henrich, Boyd, and Richerson 2008). As Sperber (1985) writes, "Your understanding of what I am saying is not a reproduction in your mind of my thoughts, but the construction of thoughts of your own which are more or less closely related to mine" (p. 75).

Finally, I draw on two key observations from dramaturgical analyses of social interaction, first pioneered by Erving Goffman. The first observation is that *interaction rituals* modulate social interactions—specific rules for interaction that are not biological universals, but are rather learned (Goffman 2008, 44- 45). The second is the individuals actively conduct

⁹ Perhaps anthropological theories of meaning ought to be considered a sensitizing concept as well, but I have discovered the literature on culture and mental models to be far more useful. The reasons for this are both theoretical and pragmatic. First, the meaning concept is highly complex but simultaneously underdeveloped within anthropology (Shore 1991). The literature contains a multitude of approaches with different agendas, ranging from the hermeneutic to the semiotic to the semantic to the psychological (See Dewey 1946; Molden and Dweck 2015; Mertz 2007; Keesing and Haug 2012; Shore 1996). Second, the methodology utilized in this project simply cannot access internal processes of meaning-making, as would be ideal for an anthropological project on meaning. Cultural models are used as an important and related concept, and I use meaning in the psychological and lay sense of an attribution of significance or purpose that mediates motivation (Molden and Dweck 2015; Chalofsky and Krishna 2009).

impression management in front of others, controlling how others perceive them through utterances, attire, or body language (Goffman 1959). Through this lens, behavior becomes a type of performance that is bounded by regions—for example, restaurant staff act very differently in the *frontstage* among customers' tables than in the *backstage* of the kitchen.

Dramaturgical analyses have the advantage of being compatible with conceptions of mental models, and although not its original intention, the framework could be potentially applied to cultural models. Goffman never explicitly uses the terminology of a mental model, but emphasizes that interaction orders and rituals have a strong learned component. These might be understood as learned cultural models, which, in turn, ostensibly affects the behaviors that Goffman observes. Dramaturgical analyses offer a convenient analytical frame to understand how behaviors might differ between frontstage and backstage settings within healthcare. (Lewin and Reeves 2011; Sinclair 1997).

This discussion of underlying sensitizing concepts is perhaps in more detail than might be typically considered sensitizing. However, sensitizing concepts can be highly refined and scientifically sophisticated—what is far more important is that the concepts are tested, improved, and refined inductively against the empirical (Blumer 1954). Like all models, these concepts are flawed, and only provide a starting place from which the utility of such theoretical models can be critically evaluated.

An Outline

Changing Culture in Medicine is an anthropological study of the complexity of implementing a culture change intervention in hospitals. In order to capture this complexity,

I present both a historical account of *how* the intervention was implemented, as well as an anthropological analysis of the dynamics behind shifts in ideas, authorities, and resources. The research sites consequently included not only the hospitals units implementing the change, but also the implementation teams who were initiating and facilitating change.

First, I explore how medicine was typically practiced before the implementation by examining the work of those involved at the front lines of hospital care—doctors and nurses. Chapter 2 follows a doctor and a nurse through a prototypical day of work, but I illustrate the fragmented nature of medical care within hospitals, and how medical work has become synonymous with communication. Doctors and nurses also have surprisingly distinct and separate hierarchies, priorities, and beliefs. As a consequence, doctors and nurses must be understood as not only distinct tribes within the hospital, but largely disconnected groups with limited opportunities to interact.

Chapter 3 presents the proposed solution, through a description and analysis of the intervention. I first present a description of the new rounds, but then dissect and examine each component of the rounds emphasizing how its designers intended it to function. This analysis draws from the perspective of the implementation team, highlighting both the intended process and the discourse used during trainings with bedside staff. The analysis is conducted in two portions—first, drawing from the medical literature to illustrate just how different the rounds are from standard practice. I then examine the rounds through the lens of anthropological ritual theory, examining how the ritual could disrupt existing practices and functionally modulate interactions between doctors and nurses.

The following two chapters are comparative case analyses of two hospital units with dramatically differing experiences with the intervention. Chapter 4 presents the striking case of Unit 3C, where nursing technicians (nearly the lowest on the hospital hierarchy), were

included in the rounds and dramatically elevated in status. I argue that medical knowledge played a major role in the construction of social capital for the nursing technicians, and an analysis of hierarchy and power demonstrate that the particular cultural context (and a lucky streak of events) led to the successful implementation on this unit.

In contrast, Chapter 5 explains how Unit 2B was located within the same institution as Unit 3C, and also benefitted from a carefully planned, highly resourced implementation. However, the ritual had an unintended effect— the new rounds failed to disrupt hierarchy, and instead reinforced the existing tension between doctors and nurses. One frequently offered explanation was that the unit was understaffed and dangerously busy. However, the picture was substantially more complex— through the lens of agency, there were competing cultural expectations that limited the ability of participants to challenge dominant cultural norms. As a consequence, there was a lack of meaning to the ritual, and the ritual worsened the existing hierarchy.

Hospitals are messy, complex human systems. These case studies illustrated the dynamics between context and implementation actually modulated the primary effect of the intervention. The case study is useful as it illustrates the social and cultural nature of a complex change, and an anthropological framework highlights how different components of culture change (or not) within the institution. Even the simplest technological change requires an alteration in behavior, beliefs, and culture. However, healthcare still conceptualizes these kinds of change interventions as a kind of pharmaceutical— one with essential qualities that work universally.

The strength of anthropology lies in its holistic nature, as there is no singular theory that explains all of humanity. Perhaps not unexpectedly, I found that no singular anthropological theory explained the dynamics of change in this project. Instead, certain

anthropological theories were more useful in explaining each case. As a consequence, one goal of this manuscript is to make explicit a few of the key concepts that comprise an anthropological framework of analysis.

Based on this research, I argue that if hospitals are understood as cultural systems, inductive approaches are needed to evaluate and design change. This idea, however, is in direct conflict with the values of the evidence-based medicine movement. This manuscript ends with a reflection on how hybrid approaches might be suggested for future researchers, and then reflect on anthropologically-guided approaches on changing the culture of healthcare.

- CH 2 -

TRIBES IN THE HOSPITAL

The worst error I made in medical school involved one of my best patients. Annie was eight years old, and she was admitted to the hospital because of severe vomiting. Every test we ran came back normal, and she rapidly regained her smiles and energy, finishing her meals without a problem. On hearing that she was going home, Annie surprised everyone by leaping out of bed, and running past the others to give me a big hug.

I smiled sheepishly at my supervising physician, who jokingly threw up his hands in the air, and we all laughed together. The hug and the laughter felt great. We declared that Annie likely had a viral infection, and pointed as evidence a sick child now back to her energetic, bubbly self. The tone in the room matched the bright colors of the children's hospital, and we celebrated before one last hug goodbye.

Annie came back to our service just three days later. She had started vomiting again the following day, and her mother even waited a few days before bringing her back to the hospital. However, her case was curious. Annie didn't complain of any pain, nausea, or any other symptoms. I examined her again, and she seemed just as normal when she left. Over the course of the week, I ran through her differential diagnosis, ruling out one cause after another, asking Annie to undergo test after test. All of them came back normal.

After about a week, I was flipping through Annie's chart at the nurse's station when her nurse happened to take the seat next me. "I'm totally perplexed by this patient," I confided. "What do you think is going on?"

Usually very friendly, she suddenly looked uncomfortable. "We're actually not sure," she said, "but none of us ever thought that her symptoms are real." She went on to describe how the nurses had never seen Annie vomiting, and, when asked to save the vomit, Annie's mother would either forget or show them what looked like small amounts of phlegm. The nurses also pointed out how her mother would strangely forbid Annie from going to the recreation room, even when it became obvious that she was well enough to play.

Stunned, I went to grab my supervising resident doctor with the news. The likely diagnosis was now not a viral illness, but *Münchhausen syndrome by proxy*, a type of child abuse and mental disorder where the parent exaggerates or induces physical symptoms in the child. We documented the case, called a consult with the psychiatric team, and alerted child protective services that they may need to be involved.

The ramifications of the case were perplexing, and haunted me afterwards. If the nursing staff was convinced that the vomiting wasn't real, why didn't they speak up earlier? Why weren't their suspicions communicated to our team? When we came to exam Annie, her nurse would often join us, eavesdropping on our conversation. It would've been so easy, I thought, so trivial for the nurse to stop us on our way out.

I also couldn't help blaming myself. Before starting my clinical training, one of the upperclassmen offered me advice: "Always check in with the nurses," she said. "They're your eyes and ears." And I actually followed this recommendation—I made a conscious effort to touch base with my patient's nurses at least once a day, until my last rotation in pediatrics. Why did I suddenly stop checking in with the nurses? Perhaps, I failed to

recognize that my increased confidence as a student meant that my patients were at their most vulnerable.

I suddenly remembered it was also my last day. I went back to her room to say goodbye, one last hug, and I never saw Annie again.

Annie's illness could have been prevented with a simple act of communication, and our failure to communicate across disciplinary lines is one example of how culture inhibited coordination. The advice that I received to check in with the nurses was largely against the norm—I would never receive that advice from other students, and I rarely saw other students doing the same. Medical students and the nurses occupied slots on the social hierarchy within medicine, and inhabiting different organizational silos. We had different training systems, occupied separate geographic spaces, and had our own individual rules for interaction. Doctors and nurses belonged to different cultures.

The purpose of this chapter is to describe how healthcare was delivered prior to the BMR intervention. Specifically, I wanted to characterize the work of doctoring and nursing, specifically focusing on interactions between the professions, and providing a day in the life between BMR. The following are a series of ethnographic vignettes that represent one day of work for two informants, and highlight the tensions within “cowboy medicine”. They are not meant to be representative of all healthcare providers' interactions— instead, I've selected them for their illustrative value. All names have been replaced with pseudonyms, and multiple informants across all field sites have been combined into a fictional but representative composite.

LOUIS EVANS, MD

6:05 AM

I was running late. The sky was still dark, but Galen Memorial Hospital began to stir at the promise of morning. As I ran through the lobby, the custodial staff was finishing their work from the night before, and night shift workers looked forward to returning home. I stepped into the elevator and glanced at my watch. It was 6:10 AM.

Walking quietly into the residents' lounge, I threw my bag into a corner and ran towards a computer bank on the same floor. There, I found Dr. Louis Evans, staring intently at the computerized medical record system. He had beaten me by at least thirty minutes, and already received handovers from the overnight admitters, the doctors who evaluated emergency room patients requiring hospitalization while Dr. Evans was sleeping.

Louis greeted me warmly as I pulled up a chair. He was one of my favorite attending physicians— one of the senior physicians on staff who took full responsibility for patients, as well as occasionally overseeing resident physicians and medical students. Dr. Evans was also easy to get along with, but I was specifically interested in shadowing him as many nurses identified him by name as one of their favorite doctors. “Dr. Evans is just so approachable,” one of the nurses pointed out earlier. “He doesn’t rush or intimidate you. He’s got such a pleasant disposition.”

During one late night on the ward, a nurse tugged at my shoulder and pointed down the hall. Wearing his long white coat, Dr. Evans was slowly walking with a patient, dragging

an IV pole behind him and assessing their gait. It was almost 7 PM, and most of the other physicians had already gone home. “See!” the nurse said. “Who else would be doing that?”

The following week, I asked Louis if I could shadow him. If I wanted to understand how “cowboy” medicine was practiced, I reasoned that examining how Dr. Evans worked would help illustrate the limitations of the system—he was an exceptional physician, and someone who worked hard and cared deeply. Anything I witnessed, I thought, would not be for lack of trying.

6:10 AM

Back at the computer terminal, Dr. Evans begins to review his patients from a paper list of those assigned to him. He goes through each patient one by one, shifting between the medical record in AccuRec, the Galen computerized system which holds clinical information about patients, and ComForce, a separate system used for both billing and handovers between attendings. In a small, black notebook, Dr. Evans keeps a handwritten page on each of his patients— name and age on top, diagnoses, medications, labs, notes. Working quickly, he shifts information about his patients between two paper and two electronic sources.

Currently, we had eighteen patients, four of which were new. “The difficulty of the day,” he said, “is directly proportional to how many new patients you have.” He pulled up each of the new patients as well, creating new pages for them in the black notebook, and getting a sense of the patients’ stories by reading their notes. At the same time, Dr. Evans

talked about how important it was to actually lay eyes on a patient— he told me a story about a patient who had an open abdominal wound, but was in reality quite stable— but, right now, Dr. Evans formed his initial impressions of each patient from AccuRec alone.

At 7:15 AM, his cell phone rang for the first time. It was the overnight cover, or the physician assistants who handled any issues that arose with patients overnight. Nothing dramatic to report. Two minutes later, his pager rang with a message reminding all physicians to update their master list in ComForce, the billing system. At 7:42 AM, he received a page activating the Medical Emergency Team, or a “code MET”. He shrugged; it wasn’t our patient.

Dr. Evans opened another chart in AccuRec, and shook his head. “If you’re going to order a urinalysis,” he said, “you should just go ahead and order the urine culture at the same time.” Someone had ordered antibiotics for this patient, but failed to order the culture.

“Who ordered the antibiotics?” I asked.

He shrugged. “Probably the ED.” Later on, I would find out that another consulting team had the same thought, and duplicated the order for urine cultures. The same patient was seen by not only the emergency room physicians and Louis, but also two additional teams of doctors specializing in infectious disease and nephrology.

The phone rang again, this time about a different patient. “Look,” Louis said, “I’m not the one ordering the tests. I’ve replaced the guy who ordered the tests, who ordered them on behalf of the interventional cardiologist.” The call was from the cardiology fellow, who had a very specific question regarding a peripheral vascular scan, and he recommended that they call the interventional cardiology attending instead. At this point, there were four groups of physicians involved in generating this scan— the last hospitalist who ordered the

scan, the interventional cardiology attending who was consulted on the patient and suggested the scan, the cardiology fellow about to conduct the scan, and then Dr. Evans.

Dr. Evans himself was a specialist in hospital medicine, a relatively new and fast-growing discipline. Previously, primary care physicians would see patients both outside and inside the hospital. In contrast, hospitalists are solely responsible for inpatients. The field has grown rapidly since 1996, and was largely driven by new changes in hospital reimbursements, resident work-hour reform, and concerns over patient safety (Wachter 2008).

However, the rapid rise of hospital medicine also reflected the increasing complexity of delivering care. The definition of hospital medicine penned by the Society of Hospital Medicine (2009) explicitly states how hospitalists conduct “collaboration, communication and coordination with all physicians and healthcare personnel caring for hospitalized patients.” Hospitalists are unique in their focus on collaboration— they carry primary responsibility for a patient’s diagnosis, treatment, and management, but also coordinate specialist physicians, bedside nurses, social workers, pharmacists, therapy services, and other allied health.

“It’s just fun,” one hospitalist described. “You have all the resources at the hospital to bring together to try to fix somebody.” Hospitalists are consequently simultaneously specialized and generalized— hospitalists are trained in general internal medicine, but specialized in taking care of patients in the hospital.

As a consequence, they also occupy a unique role within the physician hierarchy. “There’s a culture,” one hospitalist described, “of the hospitalist deferring to consultants in general. If you’re in the room at the same time as a consulting attending, then they would probably focus on their thing and leave... they would not stand there silently listening to the hospitalist.” Being a hospitalist is generally not considered to be as prestigious as the other

specialties, and within academic centers, many hospitalist departments lack an emphasis on research.

There's no doubt, however, that the hospitalists hold considerable power. After all, the hospitalists are the last contact point for the medical services before the patient. "I'm not a surgeon, I'm not a psychiatrist," a hospitalist declared. "Guess who the buck stops with?"

Back at the computer station, Dr. Evans made a note in his black book, and then snapped it shut. "All right," he said. "Let's go." He checked the list, and indicated that we should head for Unit 2A to see the first patient. Two hours had already passed.

8:17 AM

There was something wrong. At 8:17 AM, we knocked on a patient's door to no response. This patient was Mrs. Adams, an 89 year-old woman who was admitted from a nursing home to the hospital after falling. Opening her eyes briefly, she mumbled hello but almost immediately went back to sleep.

"Mrs. Adams?" Dr. Evans rubbed her shoulder. "I'm sorry to wake you." She opened up her eyes briefly, and then closed them again. She was very drowsy, and Dr. Evans pointed to the bandage on her forehead. "That's weird— that wasn't there yesterday."

"Did you fall again? Mrs. Adams? Did you fall yesterday?" Dr. Evans shook her shoulder, and the patient mumbled opened her eyes to say something incomprehensible. Her speech was too slurred to be decipherable. Mrs. Adams fell back asleep. "She wasn't like this

yesterday,” Dr. Evans explained while starting an examination, “but this bandage is new. We need to find the nurse.”

After examining the patient, we went back outside to the hallway to look for Mrs. Adams’s nurse. “Do you have 17?” he asked a nurse passing by, referring to the room number of the patient. She shook her head. We asked another nurse for help, but nobody was sure where Mrs. Adams was.

Dr. Evans walked towards the central nursing station, and retrieved a nursing note to confirm that the patient fell last night. Shaking his head, he wondered why he didn’t hear about this during the handover from the physician covering at night. As Dr. Evans ordered a CT scan to rule out any cerebral bleeding, I went to speak with the clerk to find Mrs. Adams’s nurse. We called the nurse on her cell phone at 8:56 A.M., and she confirmed the fall. She also told us about how she was more agitated than usual and didn’t sleep all night, which reinforced Dr. Evans’s decision to order the scan.

We didn’t get to check the results of the CT scan by the late afternoon. By then, a family member came to tell us that Mrs. Adams’s sleepiness was normal for her— she usually didn’t sleep well in the nursing home, and then would be drowsy all day. Perhaps the fall was minor, and she didn’t need the scan after all. I was relieved to see that the CT scan didn’t show a bleed. This story would end well.

Yet, I found myself disturbed. We only learned about the fall from a bandage on the patient.

8:57 AM

Dr. Evans was finishing up orders for Mrs. Adams when the phone rang. Another nurse was calling, asking Dr. Evans if they could stop a “q4” glucose order for another patient. The ED had written an order for the nurses to check the patient’s blood sugar levels every four hours, and although the patient was now stable and moved to unit, the order had carried over and still stood. Dr. Evans checked his black notebook, and shrugged. Sure, he said.

Louis groaned and pointed to the patient’s chart. “I hate calling ID [infectious disease] for something I can handle myself,” he said, “but this guy has been bouncing too much and he has these loculations that will cause you problems.” I read the chart quickly, seeing a patient who was “bouncing,” coming to the hospital frequently, and already on multiple courses of antibiotics for strange fevers.

Outside, he returned the page to a nurse, who asked if she could give water to a patient through a PEG tube— a feeding tube that pierces the abdominal wall directly to the stomach. Not yet, he said. At 9:13 AM, a nurse walked up to ask if a medication could be held before the patient was to be sent for a biopsy. Six minutes later, another page arrived, with a call-back number for a social worker from another floor.

At 9:57 AM, Dr. Evans paged the infectious disease team about the patient with lung problems. We wait a few minutes, but his hospital phone began beeping, improperly charged from the night before. Dr. Evans borrows one of the chargers at the nurses station, and leaves the phone there as he went off to see another patient.

We returned to the nurses station at 10:15 AM, only to see that we had missed a call from the ID team. Two minutes later, a physical therapist comes by and chats about the

plan for chest physiotherapy, and discussed whether or not to adjust the patient's diet to thicker foods. One minute afterwards, Dr. Evans sent another page to the ID team. This time, they call back within a minute.

“I think he'll be easy for you,” Dr. Evans said. “He's just been bouncing back.” Dr. Evans gives a quick overview of the backstory. “It's really hard for me to tell if it's lung cancer and pulmonary function are poor, or if there's an infection. I'm starting to lean towards infection. He's on thickened liquids, and we switched [antibiotics] from zosyn to unisyn, and his white count has gone up. He also has these loculations, and I'm wondering if there's some HCAP [healthcare associated pneumonia] hiding in there.”

Dr. Evans thanked the ID doctor, snapped his phone shut, and went to see another patient.

1:20 PM

At 1:20 PM, Dr. Evans received a phone call from the gastrointestinal consult team. They ask if we have a certain patient— they're looking for the “primary team”, or the primary hospitalist. Dr. Evans scanned his list, and apologized that the patient was not assigned to us.

Within the AccuRec electronic medical record, it is not always obvious which hospitalist or nurse is assigned to a patient. A nurse looking for a physician must hope that the chart has been updated, or guess from clinical notes. Similarly, a doctor looking for a

nurse must look at a white board inside the patient's room, or ask the clerk sitting at the nurse's station.

Doctors and nurses also cannot contact one another equally, an arrangement that reinforces the hierarchy commonly found in hospitals. Nurses have cell phones, and both doctors and patients can call those phones directly. Physicians, on the other hand, carry one-way alphanumeric pagers. Physicians consequently have the most amount of agency, as they can make the decision to return a phone call at their convenience, while nurses are generally expected to pick up their phones immediately.

This hierarchy of communication can be sidestepped with some creativity. While we were sitting at Unit 2B, Louis tried to track down another doctor who wasn't returning our pages. A nurse overheard our conversation, and suggested that we use their Rolodex. Sitting hidden behind the counter was a large Rolodex, containing cards with the cell phone numbers of multiple doctors. We flipped through the ragtag cards to find our physician, and gleefully called the number, as though we had beaten the system.

Individuals may also counteract the existing hierarchies. For example, as Dr. Evans continued to work with the patient's chart at the nurses station, a nurse walked by to ask for an enema for a constipated patient.

"Sure!" he said. He opened the constipated patient's chart in AccuRec. "Do you want fleets or enema?" The nurse looked surprised, and stopped to think. I was similarly surprised—doctors do not typically ask nurses for their opinion. Louis sensed her discomfort. "In your experience, which one works better?"

"Let's go with fleets," the nurse finally said. "Thank you!"

"No, thank *you*," Dr. Evans said, almost absentmindedly. He went back to finishing the discharge orders.

2:04 PM

We see two more patients. One was an elderly gentleman with pancreatitis, and we were discussing whether or not to continue a medication. “There’s some science behind it,” Dr. Evans explained to me, but there’s a lot of uncertainty, admitting that he wasn’t quite sure what to do. “It’s probably good for one week or two weeks to just take it.”

He sat down and placed four phone calls in a row— three to social workers, and one to discuss a treatment plan with the vascular surgeons. “This is what I do all day,” he said, smiling. “Be on the phone.”

Dr. Evans returned to another patient room to discuss the treatment plan with a patient. The discussion was serious, and the patient nodded his head. “You know more about me,” the patient said, “than I do myself.” We left the room to return to the nurses’ station.

At 2:16 PM, the pager rang. Dr. Evans spent a few minutes to complete writing orders, and then returned the page— whoever it was had paged the wrong physician.

Eight minutes later, he called the local public hospital to arrange for the Coumadin clinic for a patient. The clinic was very busy, and placed us on hold. Two minutes later, the nurse case manager came to discuss one of the other patients. Meanwhile, his cell phone and pager rang simultaneously. He threw me his cell phone— it’s the social worker, asking clarifying questions about a patient.

As I'm answering the social worker's questions, Dr. Evans finished the conversation with the case manager, and picked up another phone to return the page from cardiology, asking about a new consult that was placed. Louis had a phone on each ear, and I had a phone on mine.

Later on, he would recount that he wasn't sure who even consulted cardiology, and speculated that it might have been initiated by the emergency department. The patient had some atrial fibrillation, but nothing major that Dr. Evans felt he couldn't handle. He thanked cardiology for their time, and switched his attention back to the original phone call. Dr. Evans was still on hold.

3:59 PM

We finally walked out of the patient's room of the last patient. More than nine hours after the shift started, and we have seen all twenty patients. However, Dr. Evans hasn't written a single clinical note yet— although he was jotting down reminders in his black notebook, the day was hectic enough that he hadn't yet had a chance to sit down and input notes formally into AccuRec. Now, we had to prepare six discharges.

Dr. Evans sat down at a computer terminal to prepare the discharge paperwork. Meanwhile, he sent me to speak to the patient who was originally thought to have tuberculosis. My job was to tell him the good news that, although the original admitting physician was concerned, Dr. Evans felt strongly he wasn't likely to have tuberculosis. He could likely go home in the hour, and we needed his primary care physician's information to complete the paperwork.

At 4:07 PM, the pharmacy student approached us at the nurses station. “I was reviewing this patient’s medication, and I was wondering if you had meant to write the medication this way? I’ve never seen anyone write lisinopril that way before.”

Dr. Evans frowned, and clicked open the patient’s chart. Apologizing profusely, he realized that he had written the medication to be taken twice a day instead of once a day. Dr. Evans called the patient, apologizing to the patient for the mistake, and then thanked the pharmacy student for catching the error.

6:24 PM

“I’m almost embarrassed how much paperwork there is,” Dr. Evans said as he worked on the last discharge order. I make a comment about how nobody goes into medicine for the paperwork.

“That’d be weird,” he said, laughing. He admitted that he did enjoy writing the discharges. “I enjoy communicating with other doctors,” he said. “All the other paperwork is important, but I hate it.”

More than twelve hours after we began our day, Dr. Evans opened up ComForce to prepare for the handover to the next hospitalist. Today was his last day on service, and, for the next week, a different physician would arrive to take care of his patients. ComForce handled billing, but also had a separate page for the most important clinical information— issues, tests, consults, medications, tasks, bed number, race, age, sex, and resuscitation code status. He updated each of these items, moving between his black notebook and the medical record in AccuRec.

The next hospitalist called, and Louis began to run down the list. “Mrs. Chen in 2B14. She’s a lady discharged on the fourteenth for diastolic heart failure with a big dose of BP meds and Lasix. She started to feel bad with dysarthria and dizziness, and she felt so bad they put her in the unit. She’s gotten better with antibiotics and fluids, and creatinine now 1.8. I think she was overdiuresed, but I’m not sure based on her history. Her UA was sent down. I think watch her creatinine, and slowly adding back BP meds and Lasix now. She looks good. Her pressures are running in the 140s/80s, pulses in the 70s, she’s afebrile. Dysarthria not entirely clear— she’s status post MRI order this morning, but on her CT all she had were old infarcts.”

There was a lot of detail in the handover, and the oncoming physician interrupted frequently to ask clarifying questions. He finally reached the last patient, and the renal team really wants this patient to stay in the hospital to watch his INR. “I just appeased them,” he said warily. “But if you have more balls and want to fight it…”

Dr. Evans hung up the phone. It was now past 7 PM, and there was a flurry of activity as the nurses prepared their own handovers to the night shift. Dr. Evans, sighed, opened his black notebook, and began to write his first clinical note.

JUNIA MORGAN, RN**6:30 AM**

It was not my first day on the unit. It was, however, my first day working with the nurses at Galen Memorial Hospital. “Excuse me,” I said to the only nurse at the nurses’ station. “I’m looking for the conference room.” She smiled, and pointed me down a hallway to the right. I followed her directions, but ended up in a hallway off the unit. Retracing my steps, I found the same nurse, apologized, and asked for directions to the conference room again. A bit irritated, she pointed very clearly down the hall, indicating it was right there. Again, I went off the unit, and discovered only a row of locked doors. I started to wonder if this was a prank, as the nurse sent me off the unit each time I asked for the conference room. However, there was no one else around to ask.

I was in the middle of asking the nurse again, when one of the shift nurse managers I knew saw us talking, waving while she walked over. “No, no, no,” she said, laughing, placing her arm around me. “He’s with us!” She pointed me to the nurses’ conference room, only ten feet away from where the first nurse stood.

“I’m so sorry!” the first nurse apologized, blushing. “I thought you were with the doctors!”

I wasn’t even wearing my white coat, nor my badge. My ironed dress shirt, ethnicity, male gender, or the way I spoke perhaps gave me away. As medical students, we are socialized through medical school to develop dispositions that affect our expectations for

our roles and how we act. This is what sociologist Pierre Bourdieu might call *habitus*¹⁰ (Bourdieu 2013), which simultaneously generate and reinforce the existing hierarchy. Doctors and nurses are taught to act and interact differently across the professions, occupying very, very different worlds.

7:04 AM

“I’m totally going to work you!” Junia Morgan says, laughing. A self-described “army brat” who grew up in Japan, she spoke with more years of experience than her youthful appearance and demeanor. She had been nursing for about ten years, frequently mentored younger students, and came strongly recommended as someone to introduce me to the world of nursing. Still smiling, Junia knocked and then pushed open a patient’s door, beckoning me to follow. The nightshift nurse was already in the room.

“Good morning, Mr. Scott!” Junia said, cheerfully. Mr. Scott, an elderly gentleman, was sleeping when we entered the room. He opened his eyes briefly, smiled faintly, and then closed them again. Junia walked to the large whiteboard in the corner of the room, and erased the name and phone number of nurse from night shift. She wrote on the whiteboard in large block letters, “JUNIA AND HOWARD 838-958-2858.”

¹⁰ Surprisingly little is written about habitus among physicians and nurses. Bourdieu discussed doctors and nurses briefly in *Distinctions*, but primarily as proxies for their differences in social class. Medical sociologists more commonly conceptualize doctor-nurse relations in context of a *negotiated order* (A. L. Strauss 1978; ctd. in Allen 1997; Svensson 1996), which recognizes that the social order within the hospital is continually maintained via negotiation, and negotiation, in turn, creates the social order. Understanding the negotiated order and the limits of negotiation explains the broader hierarchies and structures observed between doctors and nurses hospital (Reeves et al. 2009; Rodriquez 2015; Nugus et al. 2010).

“Mr. Scott, this is Junia, who will be taking care of you today,” the night shift nurse said. Mr. Scott kept his eyes closed, but nodded briefly. She turned to Junia. “Mr. Scott came into the hospital with chest pain and shortness of breath, his EKG was normal but they wanted to evaluate him further. He’s got a lot of medications, but they put him on a beta blocker, some new blood pressure meds, and nitroglycerin. He didn’t have any more pain overnight.” Junia pulls up the medication list, and reviews them as she is receiving report.

“Mr. Scott was on BP meds at home, he has hypertension and diabetes. He’s on dialysis, end-stage renal disease. He had another EKG yesterday, which was normal.

“Temperature 37.2. BP 148/91, but has been coming down. Pulse 69, respirations 18 but he’s been satting 100%,” the night shift nurse continues, pointing at the vital signs in the chart. “He’s on two liters oxygen nasal cannula, and he’s getting normal saline 125. His IV on the left is a 20 gauge. They’re monitoring his troponins, and he should be getting an echo and down to dialysis today. He’s on tele. Mr. Scott hasn’t had any more pain, but he’s a one-assist and a fall risk. Isn’t that right, Mr. Scott? That’s why you have to remember to push to the call button if you want to go to the bathroom. We don’t want you to fall.” Mr. Scott nods, but keeps his eyes closed. “His wife is coming back this morning, and she’s helpful and feeds him.”

Initially, I found nursing reports difficult to follow, especially for the more complicated patients. I was previously trained in the presentation style used by the doctors, which emphasizes information relevance to diagnosis, management, and the overall clinical course. In contrast, nursing reports focused more on the management and implementation of care, and particularly the last twelve hours. The nurses often alerted each other on managing fluid lines, variations in giving medications, and the emotional states of patients.

Junia examines his lines, fluids, and oxygen, and performs a safety check, ensuring that the equipment is working properly. She also performs what she called a “focused assessment,” looking him over quickly to see if there’s anything relevant. Mr. Scott was looking very comfortable, so we quietly turn the light back off and leave the room. The night shift nurse begins to tell Junia about the next patient, and we head to the next room.

7:42 AM

Today, Junia had four patients, and I tried to keep the patients separate in my head as the night shift nurse briefed us on each. After saying goodbye to the nightshift nurse, she walked over to a nearby cart and grabbed a piece of paper. “I write everything down,” Junia said, “because I have too many gray hairs.” Junia folds the paper into three sections. In neatly printed letters, she labeled each column— one for the patient’s diagnosis and room number, another for vital signs and lab results, and the last for tasks. Based on the information that she gathered from report, she started to plan out her day, pointing out how easy it can be to fall behind schedule.

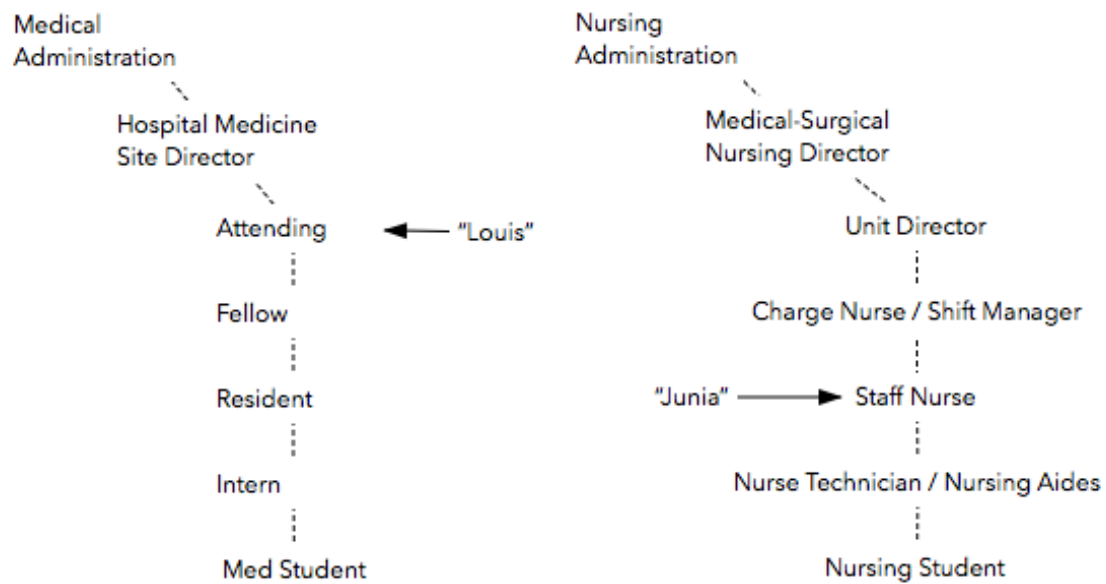
“You have to have a technique,” she said. “Everything is time management in nursing.”

Ms. Morgan is a registered nurse, working on a medical-surgical floor. “Med-surg is the backbone of nursing,” Junia asserted. Medical-surgical nurses take care of adults in hospitals, conducting assessments, developing nursing care plans, and administering treatments. In many ways, medical-surgical nursing is the foundational and historical nursing role, the very image of nursing grounded in a hospital nurse with a white pinafore apron and

cap. Medical-surgical nursing was once seen as entry-level nursing prior to further specialization, but now has its own professional society and certification programs (Academy of Medical-Surgical Nurses 2014).

There are many basic differences between the registered nurses and doctors. All doctors complete at least four years of graduate training and three years of residency, while registered nurses complete at minimum an associate's degree. Nurses are primarily women, with over 90% of licensed nurses are female (Budden et al. 2013; Health Resources and Services Administration 2013), while nearly two-thirds of internal medicine doctors are men — matching gender trends for doctors and nurses worldwide (World Health Organization 2014). Median of hospitalist salaries was \$233,855 in 2012, (Society of Hospital Medicine 2014), while full-time registered nurses earned median of \$65,470 in the same year (Bureau of Labor Statistics 2014). These salary differences can be complex— salaries be adjusted for dramatic differences in training time, school loans, hours worked, and access to labor unions—but fundamentally there is more than a three-fold difference in earnings.

The difference between the two professions, however, is real and exemplified by the ritual that opens the day. At all of the field sites in this study, I was surprised to see that the very first task of nurses on arriving at the hospital was to clock in. Globally, doctors almost never asked to clock in, with the exception of a recent attempt in Israel that resulted in considerable resistance and played a factor in the Israeli physician strikes in 2011 (Monk and Brown 1990; Weil, Nun, and McKee 2013). However, in the early morning at Galen Memorial Hospital, groups of nurses lined up to use a clock card machine or a telephone to punch in their personal codes, a ritual that reminded of hard hats rather than white scrubs.

Figure 1: Doctor-Nurse Hierarchies

7:45 AM

All handovers now completed, Junia starts to go see her patients. Junia decides to begin with Mrs. Brady, who is almost 90 years old and a former minister. She was hospitalized for pneumonia and a urinary tract infection, but her face brightens when she sees us enter the room. Junia walks in and signs her name on a sheet taped to the door. I learned later that we were participating in “intentional rounds”— the paper must be signed every hour during the day by a nurse or a nursing technician, making sure that someone comes in to check on the patient and to make sure that the room was in order.

Junia began her assessment— measuring her vital signs, checking the drips, looking for skin breakdowns, and listening to her lungs and heart. “Heart sounds aren’t my specialty,” she says to me, “but I’m listening for anything new or different from the previous day.”

After examining Mrs. Brady, Junia excuses us and we leave for the medication room to retrieve Mrs. Brady’s morning medications. At Galen Memorial, a physician must write an order for a medication, stating its dosage, timing, and route of administration. These orders populated in AccuRec, and were automatically pushed to a large gray machine that sat imposingly in the corner of the medication room. Junia pressed her finger against a fingerprint scanner on the machine, selected Mrs. Brady’s name, and the machine automatically populated with her ordered medications. Junia selected the ones she wanted dispensed, and lighted indicators guided Junia to the location of each medication in drawers within the machine. The machine had both an efficiency and regulatory function, keeping track of all items to be dispensed, reminding nurses of the medication order, and asking for a second nurse if a medication was restricted.

We returned to find Mrs. Brady awake, sitting up, and in good spirits. Junia opened each of the medications at her bedside, explaining what they were and why she was taking them. I found myself thinking that Mrs. Brady epitomized the art of being a patient. She was warm, appreciative, and kind, but most importantly, she paid attention to everything that was happening. She knew her own medical history, and her medications down to the individual doses. She communicated her pain and expressed her concerns.

“I shouldn’t be taking the calcium carbonate,” Mrs. Brady pointed out. “I already had some at 6 AM.”

Junia checks the order in the chart, and confirms that this was a real error. The medication machine may have warned Junia that the medication was early, but she was clicking through multiple warnings for many of the medications. “I got grab happy,” she admitted, pointing out that Mrs. Brady was the one who caught the error. “This is why it’s important to double check the medications. The orders were put in by a human being.” We returned to the room.

Junia asked about Mrs. Brady’s other concerns. Mrs. Brady was concerned about her gown, which was too small for her. Her pain was well-controlled. She told us that she had a bloody stool, and Junia and I went to check the bathroom. Junia pulled on a glove, and floated the toilet paper away to have a clear view of the stool. “Well, it looks like there’s blood,” Junia said, “but it’s not in the stool, just around it.” She flushed, washed her hands, and made a note on her sheet to add this to the chart later.

Mrs. Brady was what the nurses called a “total,” as she required total care in that there were very few things she could do by herself. With Mrs. Brady, the nursing role suddenly expanded beyond medical management, as locomotion and feeding and positioning and bathrooms were suddenly items to seriously consider. As Mrs. Brady was taking her

final medications, Junia began to simultaneously prepare her breakfast. Salting and buttering the grits, peppering the eggs, jam on toast, and she began to feed her. There was something very humbling about the intimacy of feeding a patient. After a few minutes, a nursing technician came to take over, freeing us to move onto assessments and medications for the next patient.

9:19 AM

Mr. Scott was in a bad mood. Junia smiled regardless, and cheerfully wrapped a blood pressure cuff around Mr. Scott's arm. The machine beeped, reporting a blood pressure of 188/118. "I need to call your doctors," Junia said, "because your blood pressure is high."

"It's always high," Mr. Scott replied.

"It's extremely high," said Junia. Mr. Scott craned his neck to look at the numbers on the machine.

"No, it's normal," said Mr. Scott, sighing. Junia repeated the blood pressure measurement on the other arm, told Mr. Scott we'll be back, and stepped outside. She smiles and rolls her eyes a bit, and moves towards the phone to page the hospitalist. She spends a few minutes to chart what she's found while we're waiting. He doesn't call back.

"I need to talk to dialysis," she said, "to know their intention." Mr. Scott was scheduled for dialysis later today, and, perhaps one of the renal physicians there could recommend a blood pressure medication. They don't pick up. She waits for a bit, dials again, and then hangs up the phone in frustration.

“Let’s ask him,” she said, brightening. “He’ll know.” We go into the room, and ask which blood pressure medications he normally takes before dialysis. He didn’t know. She steps back outside again, this time with a serious look on her face. “I need to give him something, because otherwise it’s on me if he strokes out.”

If Mr. Scott’s blood pressure continued to rise, Mr. Scott ran the risk of having a stroke, and Junia would’ve needed to call a code MET. However, some blood pressure medications can’t be given before dialysis, and then Mr. Scott wouldn’t receive the dialysis treatment he needed. Junia opened Mr. Scott’s chart, and looked at the PRN medications she could choose from— *pro re nata* or “as the circumstances require,” these are standing orders for medications to be given in case of high blood pressure as needed. None of the medications listed, however, indicated in the orders whether or not they were appropriate for dialysis.

This was striking because Mr. Scott’s blood pressure was an urgent issue, but Junia had very little support from physicians— mostly because they couldn’t be reached over the phone. She carried a ton of autonomy at this very moment, but in many ways, she was trapped. She didn’t want Mr. Scott to have a stroke, but she didn’t want to prevent him from receiving his dialysis treatment either. “A code MET takes two hours,” she would say to me later. “It takes me two minutes for clonidine.”

Junia ran her finger down the list, and chose a medication.

11:27 AM

Junia was hanging a bag of erythromycin for a patient. She had retrieved the erythromycin out of the machine, and at the patient's bedside, was checking the drug against the orders. She prepared to feed it into the patient's IV line, when the patient suddenly asked, "Why am I getting this?"

"I know that it's an antibiotic," Junia replied, "but I can't tell you if they're trying to prevent an infection or treat one or what."

"Why not ask the med student?" the patient said, smiling at me. I laughed, but then I realized I didn't know why either.

"I'm sorry, but I don't know you as a patient," I said, and I was embarrassed to admit that I, too, had no idea what the clinical justification was for the antibiotic. Granted, I reminded myself that the day was extraordinarily busy, and we were so focused on implementing orders that it was often hard to stop to ask why. I was pretty certain that a more experienced nurse would've been able to answer the question quickly.

Junia, however, checked the chart. The order was recently written, and medication orders do not typically include rationales. She also checked for a written clinical note in the chart, but there wasn't one either. However, the order was clear, and indicated that the erythromycin was to be given immediately. A further request for information would require placing a page to the doctor, and waiting for a response.

The patient indicated that they were okay with receiving the erythromycin without an explanation, and Junia continued to set it up. I found it striking, however, how often we

couldn't answer simple questions from the patient over the course of the day. One patient asked, "Why am I getting so many chest x-rays?" We didn't know. A nurse asked the plan for a new patient with pneumonia. We didn't know that either. Often, we were forced to make assumptions about the day— for example, we knew that a patient occasionally required dialysis, but we didn't know if the patient was actually going to receive dialysis *today*. As a consequence, it was better to assume that the patient was going to dialysis and administer medications that were compatible with dialysis, rather than accidentally administering a medication that would prevent his treatment.

Sometimes valuable information is transmitted from one nurse to another, either verbally, in nursing notes, or on handover sheets. However, nursing sheets are focused on management, not on diagnosis, and usually didn't include etiology. For example, Junia received a nursing report that the patient had encephalitis— as a medical student, I expected to hear greater specificity on the cause of the encephalitis, such as whether it was viral or bacterial or autoimmune. From the nursing perspective, this information could be relevant but is less important, as the nurse could implement care based on the orders.

Nursing notes were also rarely read by the other nurses. In contrast with physicians, who often have an intimate relationship with their notes, nurses at all three field sites rarely read nursing notes. Nurses spend a large amount of time documenting, completing vent notes, as well as forms documenting patient conditions. Much of this paperwork were structured checkboxes regarding assessment, and was tedious and not particularly useful to read.

Most nurses described their paperwork as a "waste of time." Nursing approaches to the medical record was dramatically different from physicians— doctors usually spent a lot of time reviewing and writing clinical notes, physician notes that contain the medical

narratives of the patient. In contrast, after receiving report, most nurses usually review vital signs, lab results, the medication administration record, and the patient dashboard.

As a consequence, the nurses developed other solutions. “We’ll ask the doctor together when he comes on his rounds,” was a common promise Junia made to a question we couldn’t answer. However, we never knew when the doctors actually arrived, and often we would be with another patient and miss them entirely. When I mentioned this to another nurse, she laughed and said that she often asked her patients to call her when the doctor arrived. It was a workaround, she admitted, but it often worked.

Several nurses also directly accessed and read physician notes, and across all three sites, tended to be the younger nurses. The physician notes were often lengthy, and required more amounts of time to process. Later in the day, Junia would do this for a patient for whom we were told on handover had a primary diagnosis of pneumonia. In the clinical notes, however, we found out that pneumonia was excluded and the working diagnosis was diverticulitis— a disease of the gastrointestinal tract. “This is the only way to get the plan,” Junia reflected,” by ‘talking’ to the paper.”

One of the other young nurses read clinical notes rigorously, and often referred to them when speaking with doctors. “I’m surprised you read our notes,” one doctor commented. “Nobody reads our notes, that’s great!”

“I always do,” the nurse replied, “because otherwise how the hell am I supposed to know what’s going on with my patients?”

1:45 PM

The morning was so busy that we didn't stop for breakfast. "I usually make sure to get my breakfast and lunch," Junia said. "You have to make that time." The nurses often emphasized the need to take breaks, and the fact that we had been working for five hours without a break was a deviation from the norm. June explained, "I'm big on breakfast, because otherwise you don't know when your next meal will be."

This practice contrasted dramatically from my memories as a medical student. Among surgeons especially, many doctors almost seemed to pride themselves on working through meals. On one particularly stressful service, one of my supervising resident doctors handed me some cash in the operating room. I ran down to the cafeteria, and we hastily and secretly scarfed down granola bars in the non-sterile hallway of the operating room corridor between surgeries. I remembered it was mid-afternoon, and my first meal since breakfast at 5 AM.

In contrast, the nurses emphasized self-care, and breaks for the mid-morning, lunch, and late afternoon were common. Nursing work was often highly physical, and the breaks provided an opportunity to rest and eat. The breaks also often served important social functions, as the nurses sat together, vented frustrations, and shared stories from the day and from their personal lives. These happened regularly, while socialization among physicians was less routine, and much more sporadic and spontaneous.

Socializing among nurses was also facilitated by a key *geographic* difference between doctors and nurses—nurses are hired by a hospital unit, and generally work only on one hospital floor. In contrast, hospitalists are hired by the hospitalist service, which takes care of patients across multiple units. The doctors were often transient, rotating through units, while

nurses permanently worked on a singular unit. As a consequence, the nurses saw the same group of people day after day, while the doctors would see as many as 8 or 10 different groups of nurses, and similarly the nurses would encounter scores of physicians.

Nurses often described their units as their “homes” and other nurses as their “family,” and socialization occurred easily within a group that was geographically contained. It was much more difficult for doctors or other outsiders to enter the nursing group. I was surprised to see that the nurses often made an effort to eat in the common space on the unit, while the doctors would eat in the general hospital cafeteria.

“You need to go,” Junia urged me, “especially because you didn’t get breakfast. I’ll eat afterwards.” She gently pushed me towards the elevator bank, laughing while waving me off. I ran to the cafeteria, grabbed a boxed lunch, and I was standing with lunch in my hand when an attending stepped onto the elevator.

“Actual lunch?” the attending said, not unkindly. “That’s rare. Good for you!”

2:40 PM

Junia is sitting out in the hallway and charting as I’m taking notes. All of a sudden, Junia turns her head. “Did you hear that?” I couldn’t hear anything at first, but Junia shushed me. I heard a strange sound, almost as if coming from an animal. “Where is it coming from?”

“I think it’s coming from this direction,” I said. We ran down the hall and opened a door to find Mr. James in bed, which was strange only because we had just previously moved him to his chair. Mr. James was elderly and had some dementia, and he must have moved himself to the bed. However, something seemed wrong. He wasn’t really responsive to questions, although his eyes were open. Junia walks out to grab a blood pressure machine, and takes a set of vitals. They are all normal.

It’s the first time in my fieldwork where I become very uncomfortable, as I was certain that such an acute change in consciousness met criteria for calling for a medical emergency team. However, Junia was hesitating, explaining to me how Mr. James could be very needy, not always cooperative, and would often “play games” with her.

“Can we check his blood sugars?” I asked. I wondered if I even should have made the recommendation, but I realized that I found it ethically necessary to intervene. Although I felt certain that Junia’s clinical experience usually outweighed my own, I was also fairly confident that Mr. James required urgent evaluation.

“Good idea,” she said. “I’m also going to go get the charge nurse,” she said, indicating I should stay with the patient.

The charge nurse was right outside, and the two came rushing back, discussing whether or not to call the code. Randy, the charge nurse, was ready to call it, but when she went to check his pupils for reflexes, she noticed that Mr. James was actively resisting her. She pulls out her cell phone, and starts to page the physician.

In the meantime, Junia pricked his finger, and measures a droplet of blood onto a glucometer strip. The machine beeped, and her glucose level was normal. The physician calls back, and Randy picks up the phone.

“Hi Dr. Young, this is Randy, the charge nurse on unit 1A, and I’m calling about Mr. James in room 26—” Randy begins.

“I’ll be on the floor soon,” the doctor said, hanging up. Randy glares at the phone.

“I think he’s at the elevator,” she said, and she walks to the elevator bank. He’s not there. She comes back, and indicates for Junia to call a code.

3:23 PM

While Junia is charting, she stops to share a story from nursing school. “I was asked by the lecturer what medication to give a patient who was experiencing chest pain. He told me we were in the hospital, the patient was in his early 40s with no cardiac or family history, and he asked what medication we would give the patient.

“I don’t think he liked my answer very much,” Junia said. “I said that I would give a patient nothing and call a doctor. ‘Oh, but in an ideal situation,’ he said. Realistically, I just wouldn’t have that many choices. Maybe one or two medications. At the end of the day, it’s up to the doctors.”

Later in the afternoon, the fact that nurses actions were limited by formal orders written by the doctors became apparent. Our patient with diverticulitis required a nasogastric tube, a feeding tube that traveled from the nose to the stomach. These tubes can be

dangerous if inserted improperly, and a radiograph is required to confirm that they are correctly placed.

A medication order was scheduled to be delivered through the tube. However, Junia needed a communication order to indicate that the tube was properly placed and could be used. Although Junia could read the report written by the radiologist, indicating that the tube was correctly placed, Junia could not technically deliver the medication without a formal order.

The physician wasn't returning our pages, and she paged the radiology service, hoping to find any physician willing to write an order authorizing the tube. The entire endeavor was frustrating and felt strange, especially as the radiologists weren't involved in the patient's day-to-day care, and they clearly wrote in their report that the tube was positioned correctly. "We can see the x-rays, but we cannot interpret it," Junia said. "We don't have the power. Doctors do."

There are other such examples of limitations on the clinical autonomy of nurses. For example, Junia explained to me that she couldn't use the words "gangrene" or "necrosis" in her nursing note, as those words were diagnoses. She described a patient's wound simply as green instead. "Being a nurse is nothing like I had imagined as a child," she said. "There's a lot less autonomy."

On the other hand, because nurses function as the final interface between the hospital and the patient, they have substantial power *because physicians are not present*. Junia does not have follow orders blindly— over the course of the day, she called a doctor to make sure that they really wanted five units of blood for a patient, an obvious error. While only physicians could sign orders, Junia's signature could discontinue them.

Opening the AccuRec system, she discontinues the excess four units of blood, stopped a topical agent for a medical device the patient no longer had, held blood thinners on another patient who was going for a procedure, and then rescheduled an antibiotic as the previous nurse had administered it late. “The physicians don’t always have the time,” she said. “It’s like cleaning house.”

She also rescheduled a patient’s cholesterol drug, arguing that it worked better in the evening. Junia also clustered medication administrations, as medications could be given up to an hour before or after they are scheduled. This strategy not only minimized interruptions for patients, but also streamlined her day.

4:05 PM

Junia was starting preparations to discharge a patient, an older Greek lady who was being transferred to a rehabilitation center. Junia brought her bags out from the closet, and I started to repackage her things. She asked Junia how she was going to follow up on her lab tests, and then asked to make sure her diaper was on her straight. Junia walked her for one last trip to the bathroom. When they came back, the patient offered us candies she pulled from a bright red basket attached to the front of her walker. Junia gave her a hug in return.

We then walked into Mrs. Brady’s room to find her crying. Junia sat down next to her, and Mrs. Brady talked about how her son wanted to send her to a nursing home. “That’s not what you want,” Junia said. “You need to tell them that.” Junia gently placed a

hand on her shoulder, and Mrs. Brady nodded through her tears. Junia offered to page a chaplain, making a note to do so later on her round sheet.

“Do you need anything else?” Junia asked. Mrs. Brady wanted a cup of coffee. “Sure,” she said. “Do you take cream or sugar?”

Outside the room, Junia filled me in on the background, explaining that Mrs. Brady had said that her son wanted to send her to a nursing home so he can gain access to her money. The nurses always seemed to know a lot of backstory behind the patients— one was recently divorced, another lost her son, and yet another was cheating on his wife. One of the strange paradoxes of the hospital was that the people lowest in the hospital hierarchy often knew the most about the patients’ personal lives. Nurses and nursing technicians spent far more time with the patients, and the doctors only achieved briefer glimpses into their lives.

At 4:30 PM, we went to the conference room for a staff meeting. The manager ran through a long list of announcements, and I was surprised at the wide range of tasks nurses were responsible for— old menus must be removed from patient rooms between admissions, patient education must be charted, flu vaccines should not be given for patients receiving chemotherapy, and a reminder for the staff to renew their licenses. Over the course of the day, we went from ventilating a patient during a code to calculating insulin doses to tracking down an extra pillow for the patient, shifting from utilizing clinical expertise to hospitality services.

5:07 PM

Junia walked into Mrs. Brady's room. "Have any of the doctors come in today?" she asked. "Are you going home today?"

"No," she said. "I'm going home tomorrow."

This question was striking—I had previously assumed that the nurses would know better than the patient their plans for discharge. The reality, however, was that substantial amounts of communication between doctors and nurses occurred *through* the patient. One patient with a heart monitor said that the doctor told her that she couldn't shower because they were "waiting on something." We didn't know what that was, and Junia ultimately let her bathe. Another patient complained that she was supposed to go home yesterday, which came as a surprise. Junia found the doctor at the nurses' station, and he confirmed that this was supposed to be the case. No one had updated Junia, and it was unclear if discharge orders were placed.

In addition to discharge plans, the patients also communicated clinical information. One of the patients had bloody stools, and the doctor told them that they needed to stop taking their blood pressure pills. However, Junia only found out this information while she was giving the patient their medications, as the physician had not yet changed the orders in the system.

Another patient had cancer, a very complex medical history, and was transferred after having surgery at another institution. Especially as the patient's medical record did not transfer across institutions, the nurses learned primarily about his condition from the patient. The patient made a considerable effort to explain things in detail about his condition, share

physical exam findings, and recounted his previous hospital course. “I like this patient,” one of the evening nurses said, “because he knows exactly what is going on.”

The patient becomes a corridor of information between doctors and nurses, primarily because the patient is often the most efficient medium. The patient is almost always in the room, and has ready accessibility to both doctors and nurses. Patients are also voice-activated, and do not require time-consuming written input. As both doctors and nurses work with patients directly, information can be transmitted efficiently as other work is being conducted.

Obviously, there are several problems with using patients as medium for communication, including but not limited to inaccuracies, the patient’s own biases, and patients with low health literacy or mental functioning. The reality, however, is that the other available modalities of communication can be similarly unwieldy.

Paging, in particular, requires a moral calculation from the nurse, especially as placing a page to a physician can be temporally costly. In addition to the time required to input the page in the system, the page can go wrong—the specific number for a doctor may not be readily available, or an inadvertent page might be placed to someone else who ignores it, or the page might be placed successfully but the doctor may be unable to answer. “You’d have to page and page and page,” one physician said, laughing. “And then beg them to come and see the family. It’s pretty crazy.”

The cost of paging must be weighed against whether or not the information is urgent enough to warrant a page. Clinical updates, for example, must meet a threshold of importance in order to warrant a page. Standing orders and institutional policies often mandate that nurses page a physician if a vital sign or lab value reaches a critical level. For all other situations, the nurse must exercise clinical judgment. “I might be concerned about the

fact that [the patient] has got swollen feet, damaged his leg, or something more than the day before... but if he's okay, like he's not showing any symptoms, he's just stable. You're a little bit concerned about it, but not enough to have to page them. If I have the situation under control, then I don't need to call."

Complaints about paging was one of the most frequent by nurses about physicians. One of the nurses pointed out that failure of paging physicians can undermine the nurse-patient relationship. "The patient thinks I am not doing anything about it. When actually I am, and I'm telling him, 'You know, I paged your doctor. I'm going to page him again.' They're going to get tired of hearing that. There are only so many times they want to hear that."

When physicians return pages, the phone call is an additional interruption out of a day of many. Nurses do not know when physicians will return their page, and consequently continue to work after placing one. The phone call becomes a subsequent interruption, especially as the nurse may be working with another patient already. "By the time they return [the page]," one nurse said, "you're like, 'what was the question?'"

However, complaints about paging was also one of the most frequent made by physicians about nurses. Doctors complained about inappropriate or unnecessary calls from the nurses, for example: "A patient might have a fever, and we know that there's an infection, the patient is already on antibiotics, but there's already a PRN order for Tylenol. They probably will call and say, 'This patient is febrile,' and then the response will be, give the Tylenol and then that's where the conversation ends. It's unnecessary because they already have an order for what to do, and they just didn't read the list thoroughly before calling."

Doctors also highlighted how the timing of the page was important. “I don’t think I’ve ever been paged about something that absolutely did not need to be paged,” another doctor recounted. “It is really more like could this have waited... Can that page wait, or do you have to call somebody right away?” When I asked this physician for an example of a page that could have waited, she suggested a borderline value of potassium.

Interestingly, when I showed the same potassium value to a group of nurses in a focus group, they pointed out that institutional standing orders actually require nurses to call, even if a potassium level is borderline. This fact was likely unknown to the physicians, and likely added to the perception that the nurses were inappropriately calling.

Doctors, however, also pointed out the dangers when nurses failed to page or call the physician. A blatant example included a decline in a patient’s respiratory ability, and the physician was not called before the code. In a more subtle example, one doctor told a story about a patient with pancreatitis, who was not supposed to eat. “He had gone off the floor eating at the snack machine... that would have been important for me to know. They eventually called me, but it was a couple of days later.”

Both doctors and nurses complained about paging, but being at the bedside and lower within the hospital hierarchy, nurses seemed more vulnerable. Junia summarized her frustrations this way:

“We try our best to know that the doctors are busy, but if we don't get any response from them, that's pretty bad (laughing). ‘What the heck do you think I'm doing here?’ is the kind of response you’ll get from a nurse. You’re hanging me out to dry! What are you doing? I’m here at the bedside. Do something with this patient. I need help. Not returning my page is almost unforgivable.”

7:21 PM

Junia completed her final report to the nightshift nurses, and she sat at a computer at the nurse's station, exhausted. She doesn't normally stay late, but a patient suddenly deteriorated an hour ago, and she was too busy working the code to complete her charts. Junia will stay an extra half hour or so to complete her documentation, writing notes that few others will read.

The hospital unit was abuzz with activity, as the offgoing nurses were completing handover with the ongoing shift, and the food service staff collecting dinner trays from patients. A patient started to cry, and the sound resonated down the hallway. "You guys get to leave," Junia smiled, a bit sadly, but proudly. "The nurses will be here."

The New Game

Traditionally, medical anthropologists have focused on the work of direct patient care— for example, clinical decision-making, patient-caregiver relationships, and the interactions between traditional healing and biomedicine. Ethnographers have documented how surgeons respond to ethical challenges (Bosk 2003; Katz 1998; Kellogg 2011), the

socialization of medical students into medical culture (Konner 1988; Becker et al. 1961), and the explanatory models embedded within Western medicine (Kleinman 1981; B. Good 1994).

However, many doctors and nurses now spend a minority of their time conducting direct patient care, an observation confirmed in my fieldwork. For example, as Dr. Evans communicated with others, I noted the time each communication event occurred, as well as its nature and content. Over the course of the day, Dr. Evans experienced 87 communication events. Excluding direct patient visits, these included 24 events with other physicians, 16 with nurses, 14 with social workers, 5 with the families of patients, and 6 unknown to myself. Every 7 minutes, on average, Dr. Evans was in the act of communication about patient care.¹¹ In contrast, Junia communicated with another discipline approximately every 15 minutes.

This finding is in line with larger time-and-motion studies. Dr. Evans estimated that he spent only around 20% of his day on direct patient care. This estimate matches findings from formal research—in a study of US hospitalists, doctors were found to spend less than 18% of their time on direct patient care, and the largest proportion of their time was spent verbally communicating (24%) and charting (25-34%) (Tipping et al. 2010; O'Leary, Liebovitz, and Baker 2006). Similar results have also been found for nurses in a study of 74 US hospitals (Hendrich et al. 2008).

We primarily think of the work of doctoring as diagnosing and treating patients, and the work of nursing as the direct care of individuals. The reality within modern medicine,

¹¹ This analysis was conducted post-hoc, and recorded only frequencies and not duration. Data fidelity was acceptable for only four physicians I shadowed— however, the average frequency of communication was similar across all four ($M = 8.0$, $SD = 1.4$), and likely an underestimate of the true frequency. The sample included two attendings on wards without BMR, and two residents on wards with BMR. Each page, phone call, and in-person interaction were recorded separately. Interactions that occurred during BMR rounds or outside of patient care (e.g. educational activities) or the act of charting were excluded. Total observation time was 30 hours and 38 minutes.

however, is that the work of both doctoring and nursing has become primarily the work of communication, whether in direct verbal communication or indirect communication through charting.

The majority of these interactions, however, are informal, spontaneous, and opportunistic. They occur haphazardly across historical hierarchies, often without intentional design. Most importantly, they occur infrequently—some nurses can go an entire day without seeing the doctor of a particular patient. Nurses are geographically bound to hospital units, while doctors work across multiple hospital units. Each profession has its own priorities, beliefs, hierarchies, and behaviors.

This separation is a formal one, and heavily institutionalized within Galen Memorial Hospital. Within the formal hierarchy of the hospital, doctors and nurses are separated immediately below the CEO—each group reports to a different hospital executive, the nurses to a chief nursing officer, and doctors to a chief medical officer (Figure 2). Hiring is also separate, as individual hospital units hire their own nurses, while service lines hire their own physicians. Officially, there are very few formal connections across the hierarchies.

The separation between doctors and nurses, however, also exists beyond the official hierarchy. If we consider culture as a shared set of ideas, then between doctors and nurses there are precious few interactions to ensure that ideas are readily transmitted across disciplines. Both professions might be grounded in the same explanatory models of biomedicine, but both also read different sets of literatures. Their practices are also kept very separate—and as this chapter has shown, informal interactions are limited, training programs are independent, and the spatial geographic overlap between the two is transient and unpredictable. The two professions appear more like two isolated cultures, and the notion of a shared “safety culture” seems unrealistic.

Stein (Stein 1967) described the “doctor-nurse game”, or the set of rules that mediated communication across hierarchy between doctors and nurses:

The cardinal rule of the game was that open disagreement between the players had to be avoided at all costs. Thus, nurses needed to communicate their recommendations without appearing to make them. Physicians requesting a recommendation needed to do so without appearing to be asking for it. (p. 546)

Stein argued that the rules of the game resolved two central paradoxes— doctors as simultaneously omnipotent but also relying on nurses to help give the best possible care, and nurses as substantially less knowledgeable than doctors but also duty-bound to contribute towards the patient’s best interests.

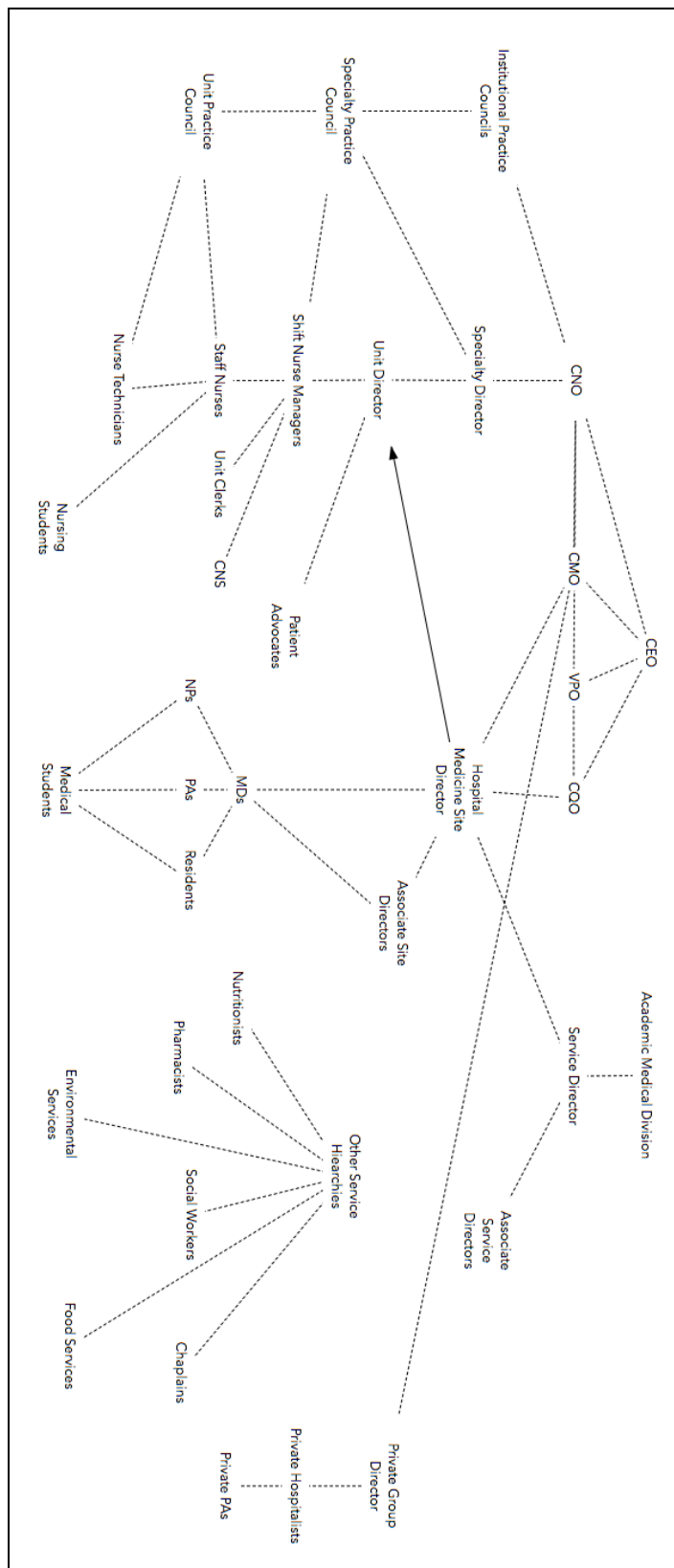
Stein (1990) has recently argued that the doctor-nurse game is no longer being played, and both professions have been encouraged to confront each other directly. What these observations illustrate, however, is that the doctor-nurse game is still being played, and new rules for engagement exist for interacting across the hierarchy. However, much of the new game is played through technology. While nurses in 1967 navigated the hierarchy through subtle and cryptic verbal communications, nurses in 2015 manipulate the system through paging, phone calls, and electronic charts.

These technological forms of communication delineate the distance between two separate sets of cultures. Doctors rarely talked with nurses, and nurses struggled to interact with doctors. Far from appearing like a unified tribe, doctors and nurses interacted only sporadically in both time and space, playing by rules created from a time when medicine was dominated by individuals and not by teams.

All of this was about to change.

Figure 2: Galen Memorial Hospital Hierarchy

This hierarchy chart was based on a combination of extant sources and interviews with key informants.



- CH 3 -

THE INTERVENTION AND RITUAL

If you are a surgeon about to conduct an operation, you must first perform an elaborate and intricate ritual. Using only your lower body, you turn on the water at a special faucet, and begin to clean your nails with a nail file. While watching a clock, you then scrub your hands and arms with a foaming cleanser, ensuring that you scrub only in one direction from your hands to your arms. You rinse off each hand in a peculiar motion, ensuring that your hands are always kept above your elbows. Standing straight with your elbows bent, you hold your hands in front of you, indicating to others that you are now clean.

Careful to not touch anything, you kick off the water with your feet and open the door with only your back. Your assistant hands you sterile towels, and you dry your hands, dabbing in the same direction from your hands to your arms. There is a strangely folded blue gown waiting for you at a table— you slip both hands into the sleeves, letting the gown unfold itself over your body. Keeping your hands within the sleeves, your assistant ties the gown at the neck. There is a paper card with two ties to the same line at your waist. You hand the card to your assistant as you spin in a complete circle, tying the line that wraps around your waist with your sleeves. Another assistant, sterile and clean like you, holds open white gloves as you plunge your sleeved hands deep. You make adjustments through the sleeves, and then wear a second set of clean gloves over the first.

You are now declared sterile and ready to perform surgery. If, at any point, this sequence is violated, or if you accidentally touch any surface not deemed sterile, you receive stern looks from the others, and are sent out of the room to repeat this sequence anew.

Rituals in the Hospital

How might an anthropologist think about surgical scrubbing and other such rituals in healthcare? Anthropologists have long been fascinated by rituals, ranging from Yakut shamanistic healing rites to Catholic baptisms to American baseball games. While it can be challenging to precisely define ritual, surgical scrubbing shares basic characteristics with other human rituals that help identify it as such— these include, but are not limited to, *invariance, formalism, traditionalism, rule-governance, symbolism, performance* (Bell 1997). These characteristics are far from perfect, but traditions that match one or more of these characteristics can be considered ritual or ritual-like activities that can be distinguished from other more typical routines in society.

Applying these characteristics to the case of surgical scrubbing provides an illustration of how an anthropologist might identify ritual. Scrubbing requires an invariant, stereotyped series of behavior that are outside the usual norm. Governed by complex rules and conducted with formality, scrubbing translates scientific meaning into an embodied physical action that reinforces the central ideology of sterility within medical surgical thought. Teachers of scrubbing point to the long surgical tradition of hand-washing, and discussions of hand-washing often invoke innovations first made by Ignaz Semmelweis in 1846 (George and Bhabra 2010).

An anthropologist studying rituals might also apply a wide range of types of analyses, including how ritual is laden with symbolic meaning, how psychological factors modulate ritual, and if ritual functionally creates and maintains social order. Applied to surgical scrubbing, anthropologists might point out that the actions deeply symbolize belief

in the germ theory of disease, and provides a psychological heuristic, creating a series of rules for rapid cognitive separation of the clean and the unclean (Katz 1981). These ritualistic rules simultaneously alleviate and create anxiety (Homans 1941). Scrubbing also delineates surgeons from non-surgeons with specialized knowledge of the rituals, and as medical students and residents often consider it an honor to be “scrubbed in,” surgical scrubbing also establishes a social hierarchy of those closest to the surgeon (Campbell-Heider and Pollock 1987; see discussion of scrubbing as ritual in Katz 1999).

Rituals within medicine, however, are especially interesting because they often have an additional *technological* function (i.e., the practical application of scientific knowledge). Doctors would be quick to point out that the primary technological function of scrubbing is to reduce the risk of post-surgical infections through the cleansing of microbes from hands, and would point to an established scientific evidence-base (Tanner, Swarbrook, and Stuart 2008). This technological need explicitly drives the creation and subsequent modification of surgical scrubbing rituals, and represents the view from which most doctors would understand the ritual.

The Bedside Multidisciplinary Round (BMR) intervention shares many of the ritual characteristics with surgical scrubbing. BMR is a stereotyped, formal ward round where doctors and nurses discuss with the patient their condition at the bedside. However, what was particularly striking about the BMR intervention was that its primary *explicit* technological function was to modify culture. “BMR has the power,” one of its designers declared at a training session, “to change the culture of hospital units.” At training sessions and conferences, the designers talked about creating “shared mental models” for both doctors and nurses, as a form of “social engineering” to change patterns of communication, socialization, and hierarchy.

As a consequence, BMR must be understood through both a clinical and anthropological lens. In this section, I will consider the BMR intervention with the same lens as briefly applied to surgical scrubbing above. The goal is to understand BMR through two primary perspectives— what anthropologists might call the *emic* and *etic* (Headland, Pike, and Harris 1990). First, how was the intervention viewed from the perspective of the locals? An emic perspective asks how the designers and users of BMR intended it to function, and how they understood the ritual from their perspective. Second, how might we understand BMR as an observing social scientist? This etic perspective connects observations of the rounds with theoretical understandings from both medicine and anthropology.

The Emic

Conference rooms within Galen Memorial Hospital are almost uniformly boring and cold. Yet, there was a palpable sense of excitement among the group of mostly nurses assembled here for BMR training. The audience was engaged, shouting answers, laughing, and becoming excited at the talk of how healthcare needed to be changed. “The hospital has never been *designed*,” one of the designers was explaining. “It’s just a building they put beds into. Vocational training— nursing school, medical school— we certainly never trained to be good *together*. And that’s how we ended up in this situation, where we have a lot of people with big hearts and skills, but don’t really know how to work best together.”

As part of fieldwork for this project, I spent over 90 hours attending trainings and observing implementation team meetings. The implementation team was kind enough to

include me at trainings for new units, and I also received specialized training to become a BMR certified trainer. My goal was to understand how BMR was understood by its implementers, and to gain a native understanding of how BMR was meant to work.

The training sessions were often exciting and almost evangelical in nature, much thanks to the charisma and speaking talents of the BMR designers. Jacob Lee and Christopher David had worked together on the intervention for years as a team— one was a hospitalist, and the other a nurse. Their relationship was often pointed to as an embodiment of the new cultural ideals, with physicians and nurses working side by side. The fact that the presentation was given jointly by a physician and a nurse was itself a novelty.

The training sessions were also an important component of the BMR implementation. Lasting approximately three hours, ideally all participants would be required to attend. They typically comprised of a mixed audience of primarily nurses. Strikingly, the training sessions provided not just a technical overview of BMR, but also a cultural vision for the new model of care. The designers painted a vision of an ideal unit, where everyone called each other by their first names, and provided explicit arguments for the creation of a functioning team.

“Does anyone know a bedside nurse who works on multiple units the same day?” Lee asked. The crowd shook their head. “Now, does anyone know a physician who works only one unit in the same day?” The audience erupted in laughter. This simple sentence might seem a legitimate question outside of the hospital, but, here, the suggestion bordered on the absurd.

The primary goal of the BMR intervention was to address the significant fracturing of healthcare delivery between doctors and nurses. As illustrated in the previous chapter, nurses and doctors work largely in isolation. Interactions between doctors and nurses were

opportunistic and spontaneous— and often dependent on inefficient pages, charting, or via the patient. “There’s still some stuff we need to do in our silos that we do uniquely.” Lee was explaining. “But we need to stop *living* in these silos, and be down here with our patients.”

The new BMR rounds would minimize fracturing by ensuring that everyone on the team understood both the treatment course and its reasoning. David provided an example:

Patients often have multiple morbidities. A patient might have been admitted during the night, with 3+ [severe] edema in their legs. You, as the nurse, are focused on getting the fluid out of their legs and diuresis.

But then you hear the doctor talking about blood sugars, and discover that the patient was admitted because their glucose was 600. As a nurse, you might never get that information as to why the patient was admitted— you might just think fluid retention, but that was just secondary. This is important to put us, as a care team, on the same page.

Clinical symptoms may have multiple layers of causes, and nurses and doctors are focused on different aspects of care. As a consequence, nurses may be informed of only the patient’s most urgent issues. In this example, understanding the primary cause of the patient’s edema would provide important context to the nurse’s care.

Clarifying both roles and the clinical course of action would also relieve the burden of paging between doctors and nurses. “Oftentimes, our patients had more information than we did. And then you would spend the next hour or two paging somebody. And, when you paged someone, they’re not sure who you are.” He mimicked a doctor returning a page. “You’re who? What floor is that? What floor am I on?” The group laughed.

Both Lee and David argued that the effects of the rounds, however, would extend beyond communication and paging. The intervention would allow doctors and nurses to get to know one another, and diminish the traditional hospital hierarchy. Lee explained:

On my unit, if I raise my eyebrows, the doctors know the quality of my work. That relationship makes all of the difference in the world. There's no authority gradient here.

Working shoulder to shoulder gives you a chance to get to know each other. It at least gives you a fighting chance to develop relationships. If you take home nothing else, we need to take better care of each other. Once we take better care of each other, we will take better care of our patients.

The BMR rounds have a multitude of functions, both clinical and social, and each component of the rounds has an explicit set of goals. The following section will deconstruct the BMR rounds— first, a typical BMR round is presented in its entirety. This round is not based on a single observation, but instead is a reconstruction of different rounds from both direct observation and training materials that best illustrate a prototypical BMR round. Second, each component of the BMR round will then be accompanied by analysis against both biomedical and cultural context.

The Rounds

“Five minutes until BMR,” the charge nurse announced while walking down the hall. She stood at a corner of the nurses’ station, and leaned against the wall as she waited for the others to arrive. Junia walked by, her hands filled with supplies. “Junia,” the charge nurse said, “you’re going to be up first!” Junia nodded, and continued her way to the patient’s room.

Dr. Evans soon arrives, as well as the social worker for the unit. “Good morning,” said the charge nurse. “This morning we’ll be starting in room 22. Junia is the nurse.”

“Good morning, Mrs. Jones,” Dr. Evans knocked on the door. “Is it all right if we come in for team rounds?” The group follows Dr. Evans into the patient room, cleaning their hands with foam as they entered.

“Mrs. Jones, you know me, I’m Dr. Evans. You also know Junia, your nurse. We’re joined this morning with Dr. Ofori, one of the junior doctors, and Kim, your social worker.”

“You were admitted to the hospital two days ago, because you came to the ER with fever and difficulty breathing. In the ED, your x-ray at that time looked like you had pneumonia. We gave you IV fluids and antibiotics, and you were feeling a lot better until you developed pretty bad diarrhea. We found that you had also have an infection in your stool, called *C. diff*. You’ve had this before, and we’ve changed you to another antibiotic.

“Mrs. Jones, you were feeling more comfortable last night,” Junia said. “Your goal for the day is to have less diarrhea. Last night, you were able to get some rest, but you still had two more loose stools last night. You’re a bit unsteady going to the bathroom, so I was thinking we might want to get physical therapy to see you.”

“Checklist. You don’t have a fever, and your vital signs look good. You haven’t had any pain, and no skin breakdown. You’ve been receiving heparin to help prevent blood clots in your legs. No Foley. You don’t have a central line.”

“Mrs. Jones,” Dr. Evans said, “anything else you want to add?”

“I’m actually feeling a lot better,” Mrs. Jones said. “Do I still need this oxygen mask?”

“Why don’t we try taking it off, and see how you go?” Dr. Evans said. “Let’s take it off now, and Junia, would you mind checking her oxygen saturation in a few minutes?”

“Mrs. Jones, I’m your social worker— I spoke with you and your daughter yesterday, and it sounds like what you prefer is to go to a rehab hospital to help you get stronger before

going home, especially as you live pretty far away. I think it'd be helpful to see what physical therapy suggests before your daughter goes to look to some places, and I can help set you up with services you'll need when you go home." Mrs. Jones nodded, and the social worker turned to Dr. Evans. "You'll also need a PPD, a tuberculosis test, and the rehab place will want to know if you'll be going on IV antibiotics."

"Sure, I'll order the PPD," Dr. Evans said, "and I'll need to talk to the infectious disease team to see what they want to do. She should be staying on only oral antibiotics at this point."

"Okay," Dr. Evans said. "It seems like your pneumonia is getting better, but now you have diarrhea from the *C. diff* infection. The plan for the day is to continue the antibiotics. Right now, we're waiting for your diarrhea to get better. You won't be able to go home for a few more days at least, and we'll make sure that you can eat and drink by mouth before going home.

"We'll also get an inpatient PT consult to see if we can work on your mobility before you go. What questions do you have for us, Mrs. Jones?"

"Someone told me that I needed surgery. Is that true?"

"Oh, that was because she's a difficult stick— it was really hard for us to get an IV needle into your arm," Junia said. "We thought you might need surgery for a bigger line, but the IV in your foot is currently working fine."

"So I don't need surgery for the infection?" Mrs. Jones asked.

"That's right. The good news," Dr. Evans continued, "is that in a lot of people with *C. diff* infection, they'll get better without surgery, but I'll be coming back and we can talk more about it. Any other questions?" Mrs. Jones shook her head.

“Thank you, Mrs. Jones!” The team walked outside. Meanwhile, Dr. Ofori, the resident physician, was finishing entering in orders for Mrs. Jones.

“Next, we’re headed to room 216. Sarah is the nurse.” The group continued on.

The Rounds, Explored

“Five minutes until BMR,” the charge nurse announced while walking down the hall. She stood at a corner of the nurses’ station, and leaned against the wall as she waited for the others to arrive. Junia walked by, her hands filled with supplies. “Junia,” the charge nurse said, “you’re going to be up first!” Junia nodded, and continued her way to the patient’s room.

The BMR rounds manager is always a nurse. This person coordinates the round, managing the master list of patients, and calling each patient’s bedside nurse before the team arrives. A dedicated coordinator is needed to ensure that bedside nurses are free to perform other tasks, instead of waiting at their patient’s bedside for the BMR team, and also ensures that the team does not have to wait to find a particular nurse.

The trainers Lee and David likened this person as “the leader of the dance” or an “orchestra conductor.” David explained, “This person will make or break you. This person will set the experience for all of these folks, and if this role is not taken seriously, your folks will not be in for a good time. They conduct the symphony.”

However, the BMR rounds manager represents a reversal of the traditional hospital hierarchy. Nurses do not typically moderate rounds attended by physicians, and physicians usually dictate which patients they see and in which order. Although the BMR rounds manager simply indicated which patients are next to be seen, this role reversal was dramatic enough that I witnessed one or two doctors complain or otherwise forget that they were not in charge.

Dr. Evans soon arrives, as well as the social worker for the unit. “Good morning,” said the charge nurse. “This morning we’ll be starting in room 22. Junia is the nurse.”

“Good morning, Mrs. Jones,” Dr. Evans knocked on the door. “Is it all right if we come in for team rounds?” The group follows Dr. Evans into the patient room, cleaning their hands with foam as they entered.

“Mrs. Jones, you know me, I’m Dr. Evans. You also know Junia, your nurse. We’re joined this morning with Dr. Ofori, one of the junior doctors, and Kim, your social worker.”

The number of people involved in one patient’s care can be bewildering—consulting doctors, pharmacists, speech pathologists, respiratory therapy, social work, wound care, palliative care, food services, occupational therapy, physical therapy, technicians, transporters, chaplains, phlebotomists, care transition coordinators, patient advocates, environmental services, and administrators. The BMR rounds, therefore, always begins with introductions of the major key players in the room— usually the bedside nurse, doctors from the primary team, and members from allied health (usually social workers, pharmacists, or physical therapy). The doctor also introduces the patient’s family, if they are present.

These introductions are necessary, as patients often struggle to remember even their physician and nurse. In one study of hospitalized patients at a major US academic center, 68% of patients could not name at least one of their hospital doctors on their second day of hospitalization, and only 11% correctly identified their role (O'Leary, Kulkarni, et al. 2010). Perhaps unsurprisingly, 60% of patients could correctly identify their bedside nurse. Patients also have trouble distinguishing between resident and attending physicians (Santen, Rotter, and Hemphill 2007).

Patients often also do not realize the sheer number of people involved in their care, and can be surprised when a large BMR group enters their room. One patient talked about being “honored,” and a small minority report that they’re nervous. One young patient jokingly and memorably asked if the team was staging an “intervention.” However, the response was usually positive at Galen Memorial Hospital. “Look at all the special people who care about you,” a family member said to a patient as we walked in. “They care about you so much they brought the whole team!”

Introductions also help ensure that the staff knows each other’s roles. For example, social workers or pharmacists may not interact with doctors directly, or may only speak over the phone. In one memorable instance, a doctor mistakenly introduced the nurse unit director as a charge nurse— indicating a lack of sensitivity to the nursing hierarchy. The unit director laughed, and took it as an opportunity to clarify her role as the manager of the entire hospital unit.

“You were admitted to the hospital two days ago, because you came to the ER with fever and difficulty breathing. In the ED, your x-ray at that time looked like you had a pneumonia. We gave you IV

fluids and antibiotics, and you were feeling a lot better until you developed pretty bad diarrhea. We found that you had also have an infection in your stool, called C. diff. You've had this before, and we've changed you to another antibiotic.

At this stage in the BMR round, the doctor provides a clinical update. This update is very brief, and the doctor is meant to highlight only the most major clinical issues, current steps in diagnosis, and responses to treatment. Physicians are encouraged to speak to the patient directly, and to use minimum jargon.

This style of communication is very different from existing norms in two major ways. First, doctors in the US are traditionally taught to communicate in a formal “SOAP” format— the patient’s subjective narrative (chief complaint, history of present illness, medical history, and a review of systems), objective information from physical examinations or tests, an assessment of likely causes for the patient’s disease, and a plan for further testing or treatment. The presentation style is intended to communicate clinical information relevant to both the course of clinical management and its justification. Most interestingly, this presentation structure is transmitted informally and often learned through trial and error (Haber and Lingard 2001).

The BMR presentation is dramatically different from this cultural norm. While the SOAP format is intended for other physicians, the BMR presentation is meant to rapidly summarize a clinical course for the patient and the other team members. Unlike the SOAP format, which is typically conducted in the third person and often depersonalizes the patient (Anspach 1988), the BMR presentation is directed to the patient in first person. The physician also excludes details that would not be relevant for the other disciplines, such as technical findings from laboratory tests or physical exams.

The second major difference of BMR rounds is that they are conducted in plain English, and require doctors to code-switch from medical language. Doctors and nurses will often utilize medical language when speaking with one another, and will switch to plain English when speaking with patients. Medical language can be considered a distinct speech register, differing from everyday language in its technicality (Koch-Weser, Rudd, and Dejong 2010), usage of slang (Coombs et al. 1993), and attributing different meanings to common words (Samora, Saunders, and Larson 1961). Previous research in social psychology suggests that this type of code-switching may not only improve comprehension, but also has psychological effects of increasing interpersonal likability and improving patient adherence (Bourhis, Roth, and MacQueen 1988).

BMR rounds are dramatically different from the cultural norm, and I observed physicians often struggled with this style of presentation when first encountering BMR. The doctor is required to synthesize complex patient cases into a plain English summary, consider what is useful for other disciplines, and conduct themselves with sensitivity towards the patient's needs. Skilled BMR presenters must not only have complete knowledge of the patient, but also have both empathy for the patient and knowledge of other team members' roles.

“Mrs. Jones, you were feeling more comfortable last night,” Junia said. “Your goal for the day is to have less diarrhea. Last night, you were able to get some rest, but you still had two more loose stools last night. You’re a bit unsteady going to the bathroom, so I was thinking we might want to get physical therapy to see you.”

The nurse now provides an update from their perspective. The nursing update is similarly brief, and focuses on the major, pertinent nursing issues. Nurses are expected to use their own judgment as to highlight pertinent issues, and select from a list of recommended topics— these might include an update from the overnight shift, vital signs, pain control, fluid inputs and outputs, mental status, and the patient’s ability to perform activities required for daily living. Nurses will only present items that are abnormal or has relevance to the other team members, making recommendations, requesting orders, or providing clinical updates that might not otherwise warrant a page.

Similar to the physician update, the BMR nursing update is dramatically different from the cultural norm of how nurses usually communicate with one another. Nursing handovers at Galen are typically based directly off nursing worksheets that highlight pertinent nursing concerns— as opposed to physician presentations, nursing presentations do not focus on diagnosis or the patient’s history, but rather the most immediate aspects of the patient’s clinical management. Two nurses presenting to one another might review items like intravenous fluids, electrolyte replacement protocols, blood glucose checks, relevant tests, allied health consults, and clinical assessments from the past 24 hours.

In contrast, the BMR nursing update focuses on the general nursing course, and excludes technical details unless they are relevant to the other team members. The BMR presentation is directed towards the patient in the second person, and while many nursing handovers are conducted at the bedside, those handovers in practice often involve the nurses talking directly to one another. BMR nurses similarly share with physicians a new

challenge in ensuring that their presentations are useful to the other disciplines, and sensitive to the patient's needs.

However, the BMR nursing update also differs from how nurses are trained to speak with physicians. Many nurses are increasingly trained to utilize the SBAR format when communicating with doctors or other nurses— situation, background, assessment, and their recommendation (Compton, Copeland, and Flanders 2012). Originally adapted from the military and aviation, SBAR has since been translated as best practice for communication for nurses, and at Galen many of the nursing handover sheets were written to reflect the SBAR structure directly. While the SBAR format is a structured communication tool, the BMR nursing presentation is semi-structured and reliant on nursing expertise. The BMR presentation also does not assume that a recommendation will be present, and nurses are encouraged to advocate on behalf of their patients as they deem appropriate.

“Checklist. You don't have a fever, and your vital signs look good. You haven't had any pain, and no skin breakdown. You've been receiving heparin to help prevent blood clots in your legs. No Foley. You don't have a central line.”

Other industries have used checklists successfully to change behavior and culture, and aircraft checklists have been long considered as key to aviation safety (Degani and Wiener 1993). Its translation to medicine has consequently been thought to hold great promise, and proponents have pointed to two dramatic successes in healthcare. Checklists were successfully used as part of a larger Keystone Initiative intervention targeting ICUs, and

succeeded in decreasing catheter-related infections by 66%, driving infection rates to zero at many sites (Pronovost et al. 2006). The WHO Surgical Safety Checklist decreased death rates by 47% in global trials (Haynes et al. 2009), and the WHO estimates it has the potential to save half a million lives globally every year. Proponents of checklists for medicine argue that they decrease medical error, improve teamwork and communication, prevent near-misses, and mobilize the application of technology (Treadwell, Lucas, and Tsou 2014). Above all else, the checklist offers the promise of the consistent and systematic application of clinical standards to all patients.

Placing a verbal checklist here in the BMR rounds is an attempt to translate the checklist to the typical hospital bedside. After providing a clinical update, the nurse is tasked with running this quality-safety checklist. The content of the checklists is determined by individual hospital units, and typically address major clinical issues that might otherwise be missed. Unlike the nursing update, where nurses are provided a list of recommended topics, the nurses are meant to address each item on the checklist systematically.

Julia's checklist includes vital signs, pain control, skin ulcers, deep vein thrombosis prevention ("blood clots in your legs"), indwelling urinary catheters ("Foley" catheters), and whether or not the patient has a "central line"— an intravenous catheter placed into a large vein. The first two are items that allow the nurse to articulate their concerns regarding the patient's stability and how the patient has been responding to pain control. The final three items are all preventative measures, as bedbound patients are more likely to develop pressure ulcers that may become infected, and indwelling catheters should be removed as early as possible to decrease the risk of infection.

The final three items are also surprisingly easy to overlook, and reflect key differences between the professions. Nurses work at the literal bedside, and are physically

managing the patient's lines and closely examining the patient. However, they lack the authority to make changes and must request a physician's order. In contrast, physicians are focused on the most emergent issues in diagnosis and management, and these preventative measures subsequently receive low attention. "You're focusing," one doctor explained, "on what can make the sick sicker very quickly. When the admitter is giving another doctor handover, they are focusing on why the patient is in the hospital, and not details about their lines."

Another doctor highlighted a difference in cognitive load. "Nurses know the patients a lot more intimately than we do," she explained. "They have four patients to manage, I have 20 patients to manage. I can't be on top of every patient's piece of equipment that I have to follow."

David and Lee emphasize that the checklist, as well as the other components of BMR, creates a collaborative cross-check between the two professions. One definition of a collaborative cross-check is a strategy where at least two individuals "examine the other's assumptions and/or actions to assess validity or accuracy" (Patterson et al. 2006)—although at one training, David explained it as, simply, "If there are any husbands who have been corrected by their wives, that's collaborative cross checking." BMR creates an opportunity for doctors and nurses to examine the patient's clinical situation together, and the checklist introduces the ability to examine key elements systematically.

Consequently, the systematicity afforded by checklists is seen as an opportunity to improve clinical outcomes, and an opportunity to enforce clinical best practices. At the Galen demonstration unit, each checklist item was linked to a corresponding evidence-based protocol. "I think the safety checklist is actually a really useful thing," one physician said. "It's actually something that I now, very much, have in the back of my mind. When I'm

seeing patients, I think through those things on every patient. I think, ‘Have we got an IV? Do we need it? We’ve got a Foley in; do we need it?’”

“Mrs. Jones,” Dr. Evans said, “anything else you want to add?”

“I’m actually feeling a lot better,” Mrs. Jones said. “Do I still need this oxygen mask?”

“Why don’t we try taking it off, and see how you go?” Dr. Evans said. “Let’s take it off now, and Junia, would you mind checking her oxygen saturation in a few minutes?”

After the nurse has completed the nursing update and quality-safety checklist, the physician then prompts the patient for any updates. Often, nurses will orient patients before the rounds, and encourage them to actively participate at this stage. One of the brochures welcoming patients to the unit reads, “At Galen, we believe you are the most important member your care team... By bringing your care team to you every day, you can have your voice heard and we can make sure your needs are met.”

By including the patient’s voice, the BMR rounds challenge the traditional paternalism found in medicine. Historically, doctors made major medical decisions on behalf of patients, often without any participation or input from the patient (Quill and Brody 1996; E. J. Emanuel and Emanuel 1992). Physicians had unparalleled authority, both inside and outside the hospital (Starr 1984), and considered as “captain of the ship” over both the patient and the nurse (Maulitz 1988). In contrast, newer models of care emphasize patient-centredness—“care that is respectful of and responsive to individual patient preferences,

needs, and values, and ensuring that patient values guide all clinical decisions,” (Institute of Medicine (US) Committee on Quality of Health Care in America 2001).

There are three major goals of including the patients on the rounds. The first is to ensure that patients understand their own condition. Miscommunications are common, a fact verified in both the research literature and my own fieldwork. “Every time a doc walks into my room,” one exasperated patient complained, “they all tell me something different.” In one study conducted at an academic medical center, only 45% of patients were in complete agreement with the doctor over their primary diagnosis, with 52% for planned tests and 39% for the anticipated length of stay (O’Leary, Kulkarni, et al. 2010).

David and Lee also argue, however, that including the patient forms an additional cross-check. “Guess who has the most important perspective we’ve neglected for so long? The patient!” David said. He proposed an example, pretending to be a doctor on BMR. “This is Ms. S, who is confused because she has dementia. I might hear the daughter say, ‘Excuse me? She has dementia but it’s mild. She usually recognizes me.’ Now, maybe I’m wrong. Maybe it’s not dementia— maybe there’s something else, or an infection I’ve missed.”

“Mrs. Jones, I’m your social worker— I spoke with you and your daughter yesterday, and it sounds like what you prefer is to go to a rehab hospital to help you get stronger before going home, especially as you live pretty far away. I think it’d be helpful to see what physical therapy suggests before your daughter goes to look to some places, and I can help set you up with services you’ll need when you go home.” Mrs. Jones nodded, and the social worker turned to Dr. Evans. “You’ll also need a PPD, a tuberculosis test, and the rehab place will want to know if you’ll be going on IV antibiotics.”

“Sure, I’ll order the PPD,” Dr. Evans said, “and I’ll need to talk to the infectious disease team to see what they want to do. She should be staying on only oral antibiotics at this point.”

During this stage of BMR, other allied health members are invited to participate. These vary by site, and may include social workers, pharmacists, nutritionists, or physical therapists. The official role of the social worker is to help coordinate and communicate discharge needs, and ensure a smooth transition for the patient once out of the hospital. Including the social worker ensures that discharge planning occurs as early as possible, and interventions that encourage early discharge planning have been previously found to reduce both length of stay and risk of readmissions (Shepperd et al. 2003).

Hospital social workers are increasingly involved in care planning and discharge coordination (Judd and Sheffield 2010). At Galen Memorial Hospital, navigating the release of patients to other facilities was greatly enhanced by the presence of a social worker. There were often many patients with substantial psychosocial needs, including homelessness, substance abuse, lack of insurance, and elderly patients like Mrs. Jones with complex rehabilitative needs. Social workers made psychosocial assessments, advocated for patient needs, and helped navigate the complex web of rehabilitative facilities, home services, support programs, and insurance companies. As a consequence, social workers held considerable power— they often considered themselves independent of the nurse-physician hierarchy, and wore long white coats similar to the doctors’.

The role of the social worker and other allied health members on BMR, however, differ from doctors and nurses in that they do not have a scripted presentation, nor are they expected to speak every time. In practice, the allied health members often stayed silent when they weren’t involved, but also shared information relevant for other team members. For

example, a social worker reported that a patient was not as alert and oriented as she appeared, and passed on information from the occupational therapist and her case worker that she was not quite normal. Social workers would often provide contextual information about the patient, including relevant information about family members or sensitive issues.

“Okay,” Dr. Evans said. “It seems like your pneumonia is getting better, but now you have diarrhea from the C. diff infection. The plan for the day is to continue the antibiotics. Right now, we’re waiting for your diarrhea to get better. You won’t be able to go home for a few more days at least, and we’ll make sure that you can eat and drink by mouth before going home.”

“We’ll also get an inpatient PT consult to see if we can work on your mobility before you go. What questions do you have for us, Mrs. Jones?”

“Someone told me that I needed surgery. Is that true?”

“Oh, that was because she’s a difficult stick— it was really hard for us to get an IV needle into your arm,” Junia said. “We thought you might need surgery for a bigger line, but the IV in your foot is currently working fine.”

“So I don’t need surgery for the infection?” Mrs. Jones asked?

“That’s right. The good news,” Dr. Evans continued, “is that in a lot of people with C. diff infection, they’ll get better without surgery, but I’ll be coming back and we can talk more about it. Any other questions?” Mrs. Jones shook her head.

BMR concludes with the doctor summarizing the plan for the day. David explained, “One of the great things we do at the end is to make a plan together. We don’t leave the

room until someone starts the sentence that says, ‘Let’s try this for the plan of the day....’ We start to say these things out loud, and create a thing we all do together. That doesn’t happen in the hospital otherwise.”

Lee chimed in, “As a nurse, my goal is to wean you off your pain medications. The physician goal might be very different. You and I have different goals, and if the patient who has been in bed for four days, their goal might just be to get out of bed and have a meal sitting up in the chair. We need to find out what the patient wants, and not just their medicines.”

The primary goal of this section is to build consensus on the plan for the day, and ensuring that there is coordination between the doctor, nurse, allied health, and the patient for the next 24 hours. This space also provides an additional check to ensure that the patient’s wishes are incorporated and eliminate any miscommunications. In the example above, Mrs. Jones was able to resolve confusion around the possibility of “surgery”— she had overheard the nurses discussing placement for a peripherally-inserted central catheter, which requires a small procedure, instead of a larger surgery to treat her diarrhea.

The BMR designers also emphasized how the patient and their family members appreciated knowing exactly when the doctors were coming, and shifts the process from being physician-centered towards one that is more patient-centered. Previously, family members would either wait long periods of time, uncertain when the physicians would come by on their rounds, or have to ask the nurse to page the doctor. “Wouldn’t it be nice,” Lee asked, “to say we do BMR rounds at 9:30, so you’ll see your physician? On my unit, they don’t even ask us that question anymore. My patients and relatives plan to be on the unit between 9 and 10. They know that’s when we round.”

“Thank you, Mrs. Jones!” The team walked outside. Meanwhile, Dr. Ofori, the resident physician, was finishing entering in orders for Mrs. Jones.

“Next, we’re headed to room 216. Sarah is the nurse.” The group continues on.

In the example above, the group pauses as Dr. Ofori completes new orders for Mrs. Jones. The group had discussed the need for a physical therapy consult, as well as the stoppage of oxygen therapy for Mrs. Jones. Both of these required orders that must be manually entered into the computerized system, and Dr. Ofori both reviews the old orders and enters new ones. Often, the person performing this role will chime in during the round to ask if certain orders are still necessary, or identify things that are missed.

Lee and David often emphasized the importance of real-time order entry, as this step results in an efficiency increase for nearly every member of the team. The nurse doesn’t have to page a physician to request an order, the social worker can clarify specifically which orders are needed for discharge coordination, and the doctor saves time responding to pages and the time it takes to enter in orders. However, identifying someone to conduct this role can be challenging—within the hospital hierarchy, only physicians and pharmacists have the ability to enter in and sign new orders directly into the system. Order entry can be detailed and technical, and nurses often lacked familiarity with the system. As a consequence, most sites had resident physicians or pharmacists in this role, or otherwise the physician simply wrote down orders to be entered after the rounds.

While Lee and David argued that all aspects of care should be discussed in front of the patient, I also observed that the discussions outside of the patients’ rooms were critically important. After the round was complete, there was often a flurry of conversation about the patient. The conversation is marked with a code-switch into medical language, often

exploring issues related to the patient's care that are laden to jargon, difficult to translate for patients, or otherwise likely to be unimportant to patients. These often included technical discussions, such as pharmacological decisions on which class of medication to use, logistical coordination regarding discharge order types or transport choices, or sensitive details that cannot be discussed in front of the patient (e.g., family conflicts, HIV status, drug-seeking behaviors).

The need to discuss aspects of care apart from the patient should not be considered a need for secrecy, nor necessarily a return to medical paternalism. These discussions could have been held in front of the patient, as Lee and David frequently advocated, and decisions were never made on behalf of patients. However, the majority of these topics were not relevant or not yet relevant to a patient, and these conversations were facilitated through the usage of technical language instead of translating each issue to lay speech.

The Unit-Based Care Model (UBCM)

While the structure of the BMR rounds is relatively simple, its implementation was not. The rounds themselves were part of a larger package of changes, and despite the fact that BMR rounds was often pointed to as the most desirable, the designers argued that the other components are more efficacious in driving changes in clinical outcomes. "Please don't think this is BMR driven," Lee said, emphasizing the other components of the model. "We think it's care model driven."

The overarching care model had four main components, of which BMR was only one. First, the designers emphasized the need for acquiring outcome data at the unit level, such as the rate of deaths, falls, hospital-acquired infections, or patient satisfaction scores. Many hospitals only collect data for the entire facility, or at the level of a clinical service (i.e., patients seen by a group of doctors). These figures may be relevant to administrators, but do not have relevance for bedside staff. “I don’t have control over these things,” David said. “What I do have control over is my own unit.” Data at the unit-level would ensure that the actions of the bedside staff are accountable to clinical outcomes.

The second component is a dyadic unit leadership. Traditionally, hospital units are run by nurses, and the unit director is typically a nurse. As they are embedded within the nursing hierarchy, however, they have influence over physicians. This mismatch prevents doctors and nurses from working together to improve care— if a unit director observes a problem that requires physicians to become involved, they must persuade individual physicians to change, or involve a medical director. The physician medical directors, however, oversee doctors that see patients on multiple units.

The care model mandates that a doctor is named as a medical director for the unit, and works closely alongside the unit director. Lee and David argue that this dyadic relationship also embodies the very changes in culture they are trying to create. “The reason why this is so important is because these folks become the drivers of the unit in that they model behavior. In the hospital setting,” Lee said, “there is nothing more powerful than having a nurse and a physician who work together... “

Third, while nurses typically only have patients on one unit, doctors usually were assigned patients across the entire hospital. At Galen Hospital, physicians typically saw patients across seven to nine different units. If you’re a nurse hoping to find a doctor on

behalf of a patient, you would have to page or call. For the physicians, interrupting work to see a patient's family member could involve walking across the hospital.

The third component was to ensure that doctors were "geographic," and only saw patients on one floor. "A team of people," Lee argued, "can't be consistently responsible for something unless they own it together. And in order to own it together, they have to share time and space. Has anyone driven a rental car? Do you drive it differently from your own? We treat things we own just a little bit differently than what we rent or borrow.

"Do physicians who rotate through units rent those units, or do they own them? We want to create an ownership culture where they feel like they own every patient, and they own the unit they work on." For David and Lee, assigning doctors to units ensures that the doctors will be able to get to know the nurses, and feel a sense of affiliation bounded to the unit rather to the hospital overall. The purpose is to shift doctors from being continuous outsiders towards part of the unit culture.

Once all three of these components were in place, implementation of BMR rounds could occur, as a patient-centered workflow, and critically important for the incorporation of the patient. "There's no stronger button for accountability than doing things in front of the patient. I know I'm nicer at the bedside. I put on my nice face smile more. We let our guard down when away from patient, but if that happens to be true about our human nature, why don't we do more things in front of them. It's hard to dismiss something when the patient's daughter asks me in front of the nurse. You'll hold me accountable in front of the patient and that's not a bad thing. It's a great thing."

Lee and David argue that accountability is the major theme that runs across all four components of the care model. Each component is based on interventions previously shown to have improved care in other settings (Schwartz et al. 2008; Pronovost et al. 2003; Byrnes

et al. 2009; O'Leary et al. 2011; Kim et al. 2012; Gittel et al. 2000; Rich and Brennan 2010; O'Leary, Haviley, et al. 2010). However, each component also challenges established traditions within healthcare, and required significant political and financial clout.

As a consequence, the implementation of these components were more challenging for me to access— many of these discussions occurred through closed-door meetings with hospital executives, and soft-power forms of persuasion. I was kindly invited to a few of these meetings, and was able to observe discussions about the meetings after they occurred. In practice, the general strategy was to find administrative support from both hospital executives and unit-level management, financial support as needed, and “soft-power” diplomatic approaches. For example, David and Lee often recounted a story about bringing the hospital bed control team doughnuts every day until they finally agreed to geographically assign patients to doctors.

Implementation Artifacts and Rituals

After a unit is ready to implement the care model, the designers advocated for an intentional process to ready the ward to implement rounds. These steps are collected into a large checklist, including hiring and training the physician partner, designing procedures for unit-based physician assignments, and establishing collection of unit-level performance data.

Implementing the BMR rounds requires an additional set of steps, and together they form an intriguing collection of artifacts and rituals that support the implementation. The first is the construction of the BMR diagram, a large, colorful pictorial diagram that depicts

the rounds. Icons representing each of the professions are portrayed surrounding the patient, and text indicated the structure and format of who says what at each piece of the rounds. While the patient is displayed in the center of the diagram, the patient is not typically assigned text for a speaking role.

“This diagram,” Lee described at the training, “is our ‘shared mental model.’ We’re like a soccer or a football team with the play.” Lee displayed a picture of a Formula One pit crew on the screen. “This is what a real fine-tuned mental model looks like. What is really awesome is that in the pit, everybody has a clear role of what they’re doing.” The implementing team localizes the diagram for their ward, deciding who would be involved in the BMR rounds, and which items will comprise the quality-safety checklist. The BMR diagram is printed in color, framed, and posted in a prominent position on the walls of the unit.

The BMR diagram not only establishes a common script for the rounds, but also makes physical what would otherwise be an abstract concept. “Do not make the mistake,” David warned, “of leaving it in a drawer. It needs to be framed. Distributed to all individuals. This can’t be some policy we create and stick in a three-ringed binder and never open. It needs to *live* on the unit.”

The diagram is one of four physical artifacts that are created, framed, and displayed on walls. After the BMR round is designed, the implementing team also creates a set of ground rules— for example, stipulating that the rounds can only start when the doctor and nurse are both present, and that it must begin and finish on time. “It’s hard to hold people accountable to things,” David said, “if they don’t know what they’re being held accountable to.”

“We BMR only when the provider and nurse is both present,” Lee said, pretending to be a nurse responding to a doctor. “Not when the physician says so.” From this perspective, this diagram is also used for control, and empowers the bedside staff with a device to respond to resistance. The ground rules, they argue, provide something one can literally point to if someone is breaking the rules.

Similar to the ground rules, the designers also advocate for the creation of a “relational covenant”— essentially a set of ground rules regarding behaviors *outside* of BMR. These include being responsible for actions, resolving conflicts directly, respecting and caring and helping one another. The lists are intended to be developed by the unit staff and localized (at one site, “avoid gossip” was one of the items), and then framed on the wall. “It looks nice,” Lee described, “but we also put it into practice. We make it real by putting it into our huddles, and at meetings we cite quotes as it becomes a living message, and not just quotes on the wall.” This item is signed by the entire staff of the unit, including doctors.

The fourth framed artifact is a “leadership statement,” written and signed by the leadership dyad of the unit. The statement highlights the key clinical outcomes that the unit is hoping to achieve. However, David argues that the leadership message is also an identity statement. “It’s important for the leadership of the unit to say what kind of unit we are,” David said. “This is a unit that will have no unexpected hospital deaths. Or no falls. Or no central line associated infections. We don’t want to be just focused on metrics, but establish how ambitious and aspirational we are as a unit.”

After all four items are framed, the implementation team then begins “change management,” a process drawn from the business literature on creating organizational change. The process responds to four key questions— what is the change? Why? How does it affect me? And how can I help?

For doctors, a letter is sent by a high-ranking physician, explaining the need for change and the upcoming creation of rounds. Its contents comprise explicit intellectual arguments for the new care model, and also set expectations for the physicians (e.g., attending training sessions). The letters are meant to be hand-signed and hand-delivered to individual physicians, and invoke a display of hierarchical power from the supervising doctor. The nurses do not receive a letter, but instead attend meetings with the unit director, discussing the BMR format, relational covenant, and the leadership message.

Nurses and doctors are then required to attend the training sessions held by Lee and David, as described above. The sessions are intentionally mixed, with nurses typically forming the majority of the audience. The sessions reinforce the change management strategy, reviewing the reasons for the change, the evidence base for the care model, and training on how to participate in the rounds directly. Staff are also given an opportunity to observe the rounds in person on other units, where they have an opportunity to socialize and talk with other staff members about the model.

The ward is then ready to launch the rounds. Training continues throughout the first week of the rounds, with coaches observing and providing feedback. Often, nurses from other hospital units already conducting BMR rounds are recruited as coaches, and provide feedback to each participant. The rounds themselves end with a brief debriefing session led by the outsider coaches, addressing major issues and opportunities for improvement. On fieldwork, I observed that these coaches often had the ability to speak outside of the traditional hierarchy— a visiting nurse, for example, could more easily provide feedback to an attending physician due to their outsider status.

After the rounds have launched, training converts to a certification program, which recognizes individuals for their performance on BMR rounds. The program was voluntary,

and participants would request a one-page study guide that demonstrated an ideal BMR session. A doctor or nurse would then ask to be evaluated by a trainer, usually a peer on the unit who has been trained for certification. The trainer would observe the doctor or nurse for five patients, and provide feedback on their adherence to the BMR structure and presentation skills. Doctors and nurses receiving certification obtain a small round pin, identifying them as a BMR-certified provider.

“We don’t want to live a life of coming to work, and going through the motions,” David said. “What we are doing now with standard work is to codify what high performance looks like.”

The Etic

The BMR rounds are dramatically different from the previously established cultural norms. The content of the BMR rounds are not compatible with established cultural models of communication for both doctors and nurses, and while doctors and nurses typically communicate in medical language, the BMR rounds are typically conducted in plain English. The rounds also invert traditional power structures, requiring participants to speak across hierarchies. Nurses do not historically offer explicit expertise to doctors, patients are typically not included, and the physicians do not conduct rounds where they were not fully in control.

As a consequence, the implementation process is intentionally designed to disrupt the existing culture on the unit to create a new culture of teamwork. The initial primary

focus is on the construction of artifacts that are prominently placed on the unit, creating physical representations of what would otherwise be abstract concepts. On one hand, the construction of these abstracts has a proximal *technological* function— for example, the BMR diagram allows for the determination of the structure and content of the rounds, and the leadership statement identifies the clinical goals for the unit. Lee and David even described this function of the diagram as the construction of a mental model, providing a reference point from which rounds participants can refer.

The construction of artifacts also has an explicit *sociological* function, as the designers also intentionally hoped that the items would help fashion a new identity for the staff. The artifacts create a vision of social conformity around the embodiment of new values found within the teamwork culture— collaborative teamwork, patient-centered care, evidence-based medicine, standardization, and clinical excellence. The fact that the leadership statement is signed by both nursing and physician leadership, and the relational covenant is signed by everyone creates a powerful perception of a new social norm, tapping into psychological mechanisms to convince people to conform to new perceived norms. Furthermore, the classroom training, coaching process, and certification system provides a forum for the socialization of bedside staff into a new identity. Taken together, these processes create emotional salience of the new mental models for the participants.

At the macro level, the implementation artifacts and the certification fosters socialization by framing participation in BMR as a *costly signal*, or the idea that group behaviors at a cost to the individual may communicate individual status. One example of a costly signal can be found among the Meriam peoples in Melanesia, who consistently hunt and share turtle, despite the fact that turtles are lower in caloric value and much more difficult to catch (Bliege Bird, Smith, and Bird 2001). This behavior can be explained as the

ability to share turtle becomes, in turn, a marker of status and quality (Smith 2003). A more familiar example might involve Prius owners in the United States, who are paying a personal price for conservation, but, in surveys, are more likely to cite status as a primary reason for purchase rather than environmental concerns (Griskevicius, Tybur, and Van den Bergh 2010). In both of these examples, turtles and Priuses can be considered not only food and forms of transportation, but also as signals of status to others in the social group.

Participation in both the implementation rituals and BMR rounds can be highly costly to the individual nurse or doctor. Although Lee and David emphasize the benefits of the rounds for staff members, the rounds themselves take considerable time. Benefits are often skewed towards the patient, not individual staff members, and participation requires a deviation from the previous norm.

BMR participation, however, also signals conformity and status within the new teamwork culture. The artifacts act as symbols from which individuals prop their new identities, and provide new rules of interaction between the participants (Goffman 2008). The construction of the certification system is perhaps the most vibrant illustration of this. “These things cost about ten cents to make,” Lee said, holding one of these pins, “but they’re worth more. People want to have one of these buttons, as it’s a sign of achievement. Our Chief Nursing Officer would come up to the unit, and take a minute to do a ceremony in a conference room with the lapel pin and a certificate. It had meaning.”

BMR consequently becomes a performance where these symbols are manipulated, and signals are sent at multiple levels between the players. Previous work has framed hospital rounds as such performances, suggesting that within healthcare, multiple performances must be conducted for multiple audiences (Lewin and Reeves 2011). Patients are signaled to the quality of their care. Doctors and nurses signal to one another, as well as management, of

their willingness to participate in the new teamwork culture. Management signals to doctors and nurses the importance of the new norm, as well as their excellence to institutional management.

The implementation process creates powerful cultural incentives to participate within the BMR rounds. In turn, the BMR rounds create micro-levels rules for acting across hierarchies, replacing previous interaction rituals that dictated communication between doctors and nurses. Rather than a traditional doctor-nurse game, as demonstrated in Chapter 2, BMR participants are given new social scripts to address one another directly.

These new behaviors, in turn, have the power to change culture. “Sometimes I get questions,” Lee said, “on how to change the culture. I turn the question around. If you change the behaviors, the culture will change.” As the new behaviors become commonplace within the ritual, they can then spread to the ward overall, and establishing the construction of a new culture.

What could possibly go wrong?

- CH 4 -

UNIT 2B

The early morning hum of the hospital was interrupted with a harsh, electronic ring. The unit clerk picked up the phone. “Good morning!” she said, brightly, “We’re having a wonderful day on 2B!” She nodded and smiled into the phone, and waved as I walked by the nurses’ station. Pairs of nurses clustered around computers-on-wheels (“COWs”), as the unit brimmed with the bustle of the morning shift change.

One of the nurses described Unit 2B as being shaped like an L, with 24 patient beds distributed along the outer lines, and the nurses’ station at the intersection of hallways. The nurses’ station was the logistical heart of the unit— holding the clerk’s desk, the social worker’s station, and two unassigned computers frequently used by the doctors. Sitting at the nurses’ station, the clerk can easily see down the hall of both corridors. These areas were the outward presentation of the unit to patients and their families, and the desks kept immaculately clean, organized, and professional.

I walked my way down one side of the L, and swiped my keycard to enter the unit’s secure core, consisting of two additional hallways that connected the two main hallways in the center. My keycard was specially coded by the security department— medical students and doctors did not typically have access to this space— and the security protected the unit’s imposingly gray automated medication dispensing machine, a non-medical supply room, staff bathroom, and the central break room. The corridors was often filled with a

combination of whooshing and beeping, noises that came from the two pneumatic tubes that delivered medications, fluid samples, and supplies to and from the unit.

“It’s so dark in here,” a visiting nurse once said, flicking on the hallway light. She was quickly corrected by one of the staff nurses.

“We keep it dark,” she said, switching the light back off, “so that we can see the dispensary.” She pointed to the blinking green lights on the gray medication-dispensing machine. They blinked in an intelligent fashion, guiding her to each individual compartment that held the medication for each patient.

Further down the dark hallway was a bright, colorfully decorated room. This center of the secure core was the social heart of the unit, where the nurses ate meals, chatted with one another, and held meetings and celebrations. The room was awkwardly long but comfortably cramped, with a round conference table against one wall, and a refrigerator, microwave, and sink against the others. In one corner stood a homemade poster describing different staff committees, and clinical updates posted in another. A small television was mounted to the walls, quietly but almost always continuously broadcasting the news or a daytime talk show. This room was privileged—only nurses and nursing technicians had access to the break room, and doctors were not typically present unless explicitly invited.

Just outside the break room stood a whiteboard, which held a sort of inspirational graffiti. The nurses had scrawled a series of quotes, scattered across the board in multiple handwritings and colors. “All patients require our love and attention,” one said. Another advised: “Never utter cruel words, though you think they’re good, for words once spoken, like eggs once broken, can never be repaired.” A Christian biblical quote, “A true friend shows love at all times, and is a brother who is born for times of distress.” “Be the best you

can be, even when nobody is watching.” “An excellent person will always treat each patient like their own mommy.” And, finally, in its simplicity: “Be nice to people.”

I passed this board on my way to the break room, where I found Anna, the unit director, loading the coffee machine with fresh grounds. She welcomed me to the unit, and asked if I wanted a cup of coffee, saying that I should make myself at home. “We are the friendliest unit in the hospital,” she said, smiling and confident over her own cup of coffee. “I guarantee it.”

Before the Implementation

On the surface, Unit 2B was similar to most of the hospital units within Galen Memorial Hospital. The unit had a maximum capacity of 24 patients, and primarily staffed by doctors from the internal medicine service. However, the unit had a particular specialty in renal disease, and although occasionally non-renal patients were sent to the unit, all the nurses and doctors were specialized in nephrology. Transporters frequently wheeled patients down the halls, escorting them to a separate unit on another floor for dialysis.

I arrived on Unit 2B a month before the BMR intervention was launched, hoping to understand the unit before the implementation. I was interested in how the “culture” of the unit might change, specifically, relationships between doctors and nurses, and the traditional unit hierarchy. The questions that guided me were very broad and very basic. How did the “locals” understand the hospital unit? What was it like to work there? How did the hospital unit function?

As I started my fieldwork, I realized that this required the identification of two separate but related characteristics of the hospital unit. First, who constituted the unit? The hospital unit seemingly consisted of a bewildering number of staff, including doctors, nurses, nurse practitioners, physician assistants, nurse technicians, social workers, a nurse educator, x-ray technicians, and the nursing unit director. Second, I wanted to identify who was being targeted by the intervention, and who was likely to change.

The second question was far easier to answer. The primary targets were the doctors, nurses, and the social worker who were officially involved in the participation of the rounds. This included the 14 nurses who worked day shifts on weekdays, and I excluded the nursing staff who exclusively worked night shifts or weekends. The nurses and the 4 nursing technicians who assisted them during weekdays were situated within the nursing hierarchy, and managed by the nursing unit director. The social worker was assigned to the hospital unit, but was managed by a separate social work manager.

The patients on this unit were staffed by two main physician services. The first was the Galen Memorial hospitalist service, comprised of approximately 36 doctors who rotated through the renal team. The service consisted of one attending physician, assisted by one of two nurse practitioners. The nurse practitioners were dedicated to the renal service, while the doctors could potentially be assigned to one of 14 other services within Galen. The renal service was typically assigned to take care of around 15 to 20 patients, with roughly half of those patients on Unit 2B.

The unit was also staffed by a group of 7 private physicians. These doctors worked in private practice—in contrast to the hospitalists, the private practice doctors were not employed by the hospital. Members of this group had admitting privileges to the hospital, an arrangement that allowed them to see their own patients from the clinic and treat them

within Galen, and both the hospital and the doctors would then bill for their respective components of care. Within the private practice group, the doctors had admitting privileges at six additional hospitals. This model of care delivery has become less common in the United States, as an increasing number of hospitals employ hospitalists and other physicians directly, but remains relevant nationally today¹² (Casalino et al. 2008).

As a consequence, neither group of doctors had strong ties to the hospital unit. Both groups would frequently see patients elsewhere. The hospitalists, in particular, had weak ties as they would rotate through 14 different teams within Galen, and only be assigned patients on the unit once every few months. The private practice group was smaller, and therefore rotated through the unit more frequently, but those physicians also attended to patients in their clinics or at other hospitals. As a result, their time on the unit was also usually limited and transitory.

In contrast, the nurses, nursing technicians, and social worker only took care of patients on Unit 2B. They comprised the consistent staff presence on the unit. While there was no doubt that the doctors shared the hospital unit as a physical, geographic workspace, the doctors could more accurately be described as transient visitors. When viewed through the lens of time, only the nurses, nursing technicians, social worker, and unit administration found the unit as home.

¹² Exact numbers of doctors working in this capacity nationally are difficult to estimate. However, it should be noted that Texas and California have laws that forbid hospitals from directly employing physicians (Sorrel 2009). In those states, hospitals are forced to contract with physician groups. These laws are historically derived from desires to minimize corporate influence over doctors' abilities to provide patient care (Risse 1999).

“The Friendliest Unit”

One surprising finding across all field sites was that many nurses identified their hospital unit as home, and coworkers as family. “This is home to me,” one nurse explained, “because we spend so many hours of the day here. When we go home, we sleep eight hours, and we’re awake for four hours. Here, we’re awake for twelve hours, so we are together with people more than we are at home. I just feel like I’m home.”

On Unit 2B, I found that this home was seen as a warm place, and I agreed with another nurse’s description of the unit as “pleasant, homely, and accommodating.” There was laughter and warmth on the unit, and most were friendly and outgoing. The unit staff genuinely seemed to like one another, holding frequent social activities, ranging from celebrations to prayers. Many of the nurses had worked with one another for several years, but even two of the younger nurses also described the unit as open, warm, and helpful. As a visiting researcher, I was surprised with how warmly I was received, and I found the staff very willing to engage with the research project.

This idea of Unit 2B as home extended to strong *intraprofessional* teamwork between the nurses. “It’s like home away from home,” one nurse described, “so I take my coworkers as family. I take them as family, and we work as a team.” One of the central components of this teamwork was a strong willingness to help one another. “It’s not your patient, or my patient. It is *our* patient,” another nurse emphasized.

The nurses contrasted working on unit 2B with other hospital units within Galen. “With other units that I’ve worked on,” a nurse recounted, “they tend to be like, ‘Well, that’s your patient, you do what you know. Get through it the best you can.’” Another nurse characterized their style on the unit: “Here, what we say is ‘What can I do to help you? What

do you need me to do to help you get through this?’ On other floors, you have to ask. ‘Will you please help me? You see I am struggling. Can you please help me?’

“I don't have to go looking for help. They can see that I need help, because I'm running from room to room. I'm trying to pull medicines, get patients ready for procedures. I'm getting an admission. They will try to help.” In practice, the nurses still asked one another for help, but the attitude generally was as this nurse identified. Nurses frequently checked in on one another, asking if they were doing okay, and asking if they needed anything.

The nurses also had a very close working relationship with the nursing technicians (“techs”). The techs conducted the most menial nursing tasks, such as assisting with patients’ activities of daily living (e.g., feeding, or personal hygiene), and basic nursing procedures (e.g., vital signs). While nurses and physicians complete several years worth of training at the college or university level, techs were only required to complete an 85-hour course and a state certification exam. As a consequence, the techs were on the bottom of the traditional nursing hierarchy, receiving lower hourly wages and status.

On Unit 2B, however, one tech described her relationship with the nurses as such: “I love my coworkers. I’ve worked with a bunch of nurses that I would never want to see again, but the nurses on this floor, they help us.... Teamwork is number one on this floor and we try to let people know that when they come here, we look out for each other. Yes, that's one thing we do. We look out for each other.”

One key example of this teamwork was an initiative to have the nurses perform the morning vital sign checks— blood pressure, temperature, pulse, and respirations. This task was usually the responsibility of the techs, and on most hospital units in Galen, techs were

responsible for all of the vital sign orders. On Unit 2B, the nurses took the responsibility of morning vitals, which helped made the techs' mornings less hectic at their own expense.

The nurses and techs worked hard to ensure that Unit 2B was a warm home, and these feelings extended to the patients as well. Many of the patients were "frequent fliers," who often returned to the hospital unit after exacerbations of their disease. "It's my third or fourth time," one patient described. "It's like my family. When I come here, I come home."

Patients would also revisit the hospital unit after being discharged. They would return to Unit 2B in plainclothes, and exchanging hugs with their nurses. "More so on this floor than anywhere else, you see patients who, maybe here for an appointment, come up and see the staff," one of the nurse practitioners pointed out. "They'll come up and say hi, which is unusual."

Yet, the patients also had a simultaneous reputation for being difficult. "We have a very unique population," one nurse explained. "People from midtown, downtown, the homeless shelter across the street. People who don't want to go home." I was often struck by how much the nurses knew about the patients' backstories, including many sad stories about patients who might otherwise be discharged to the street, or those who lost family members or jobs around their hospitalization.

"We have several patients that have come again and again," one nurse recounted. "I know that a lot of the patients like our unit. They like our staff. They like our care. I don't know if that's true in other units or not, but I think we really care about each other as staff, and we really care about our patients as people. I think it shows through when you need help with something, or with the patients that come back. They're sad at being in the hospital but they're happy to see you." The members of the unit believed that it was important to maintain these strong relationships to provide quality care. "When I come to this floor," one

of the nurses said, “I find if I’m happy, I can give good patient care. If you have bad relationships [with the other members of the unit], you won’t want to come into work.”

Another nurse pointed out the importance of strong relationships to enable teamwork between the nurse and the tech. “If you go into the break room,” she suggested, “everybody sits together— the nurse tech and nurses sit together. We eat lunch, we talk, we joke, so when we’re working, we feel like one. We don’t feel like it’s a title thing, the nurse separated from the tech. You feel like one.”

Perhaps as a consequence, most of the nurses and techs primarily identified as members of the hospital unit. For example, if the unit were to be short-staffed, and nurses who come into work can be “floated”— the hospital administration assigned these nurses to work on other, more severely understaffed units. “Those floors need to call in their own people,” said one of the nurses who volunteered to come into work, complaining to a manager. “We signed up to help *this* unit.” Nurses identified much more closely with Unit 2B, valuing their contributions to their coworkers, rather than identifying with Galen Hospital overall.

The Boss Lady

While the formal hierarchy of Unit 2B was no different from any other unit in the hospital, the hierarchy as practiced was relatively flat. The nurses included the techs as “family,” and were willing to adopt their tasks. The unit director sat alongside nurses and nurses technicians to eat lunch. Nurses and nurse techs often recommended changes to be made to entire unit, voicing their concerns and ideas at meetings.

In one memorable instance, one of the nurse techs walked into the break room, where the unit director was sitting. “I need to put on an in-service next week,” the nurse tech said, referring to a training session. She explained that she wanted to address some aspects of the unit’s infection control program. “I need you to be there at 6:30 PM on Tuesday,” she said, in a warm and familiar way. This was striking, as a nursing technician was practically giving an order to the unit director, from the bottom of the unit hierarchy to the very top.

The unit director was Anne Jones, an impressive woman who spoke with charisma and a slight Southern accent. She had been nursing for twelve years on unit 2B before becoming promoted to unit director, making her one of the youngest in Galen. She had a self-described “nurturing” and “huggy” personality, and perhaps unsurprisingly, nearly everyone on the staff had only positive things to say about her, sometimes calling her by her nickname: “Boss Lady.”

The stories told about the Boss Lady were not only positive, but sometimes incredible. I eventually became concerned about the possibility of researcher bias, concerned that her staff was only telling me positive things about her. I eventually sought to evaluate this possibility, interviewing informants outside of the hospital unit, and speaking to key informants in private. The vast majority confirmed her reputation, even in private.

Her reputation was as a passionate, caring manager who also actively helped deliver care. “She doesn’t just leave us to the floor, and stay in her office,” one nurse said. “You see her on the floor, you see her everywhere. On other floors I’ve been, I don’t think I’ve ever met the director.” Anne was often seen in the nurses’ station directly, avoiding her office. The nurses also told stories about Anne, and how she figuratively rolled up her sleeves and literally assigned herself patients when her staff was overwhelmed.

Jones's willingness to participate in patient care was not typical among cultural norms of nursing, and endeared her to her staff. Traditionally, most nurses stop conducting bedside care after being promoted to hospital management or nursing education faculty. I found this an intriguing difference between doctors and nurses— in contrast, many physician administrators prided themselves on continuing to see patients, even in a minimal capacity.

Anne also implemented features of a reverse hierarchy, choosing to eat amongst the staff in the break room, and distributing responsibility among her staff. "She comes in the break room, and everybody eats and talks together," one nurse recounted. "You don't see Anne come and because you are in the break room, you run. She knows what you're supposed to do, or you're doing what you're supposed to do. She trusts that you'll do the right thing."

The techs also felt the same way. "That's one thing I like about her, because a lot of people who are in leadership, they think, 'I'm the guru and I'm controlling this thing.' She'll say, 'I don't care if you are a tech, you are a nurse, whatever you are, everybody that is on my roster is a leader.' She's always designating something for us to do. Always delegating somebody to go do something, and she makes sure that we are involved in whatever is going on in the floor."

Jones frequently sent her bedside staff to represent her at meetings with the Galen administration, including both nurses and techs. I would later hear stories about how others would be surprised once they discover that the unit representative was a nurse tech, especially because they attended the meetings having "dressed the part" in professional clothing, at her insistence.

When I interviewed Anne, she discussed how creating a family culture was an intentional, deliberate practice that took time. Initially, she described the unit as chaotic, and

not a pleasant place to work. After being assigned the unit directorship, Anne sought to change the culture between the nurses. “My whole idea was to have a feeling of family,” she said, “and for us to really feel about each other.

“The hospital has its own vision,” Jones explained, “but my personal vision for Unit 2B is that we care. Our goal is that we show each and every patient we care, and to be nice and courteous. I believe in hospitality, and I talked to the staff very early on that if you’re in the hallway and passing a family member or patient, we speak. We make a big deal when people come on the unit and when people leave.”

She talked about reinforcing these behaviors, sharing her vision with the staff, and also leading the staff through example by taking care of the staff and patients. Anne also discussed the need on ensuring that the right people were employed. “Part of creating the culture,” she described, “was to get the right people in the right place. I’m going to get you for your energy before anything else. If you have bad energy, it will just spread to everyone else. If you don’t like it, you don’t have to stay.” She talked about encouraging those who had negative or toxic personalities to leave, and hire those with warmth and caring. “Unit 2B is doing something different,” Anne recounted, “and if other people don’t like that, that’s fine.”

“We’re a real dysfunctional family,” the Boss Lady said, laughing, “but we’re a family.”

The Nurses and Doctors

The home-like atmosphere on Unit 2B also modulated the relationships between the nurses and the medical teams, and interactions were generally very friendly. The staff smiled and welcomed physicians coming onto the unit in the same way they greeted patients and families. Relations were characterized as “good” by the nurses, and based on observations, interactions were gregarious.

The mid-level providers who were assigned to the renal service were viewed as valuable for facilitating communication between the medical teams and nurses, especially as the nurses had the ability to call the nurse practitioners directly. In contrast to the doctors, the nurses did not have to page the nurse practitioners, but called their cell phone numbers. The nurse practitioners could enter and modify orders, and were more easily accessible (and less intimidating) than paging the doctor. “With these guys,” one nurse recounted, “I can just grab them and ask.”

However, communication with the renal team was still opportunistic, reactive, and dependent on individual personalities, much as described in Chapter 2. While all the nurses in the sample described the relationship with physicians as friendly, most nurses pointed out that communication was still challenging. “We get more information from the patients,” one of the nurses described, “more than from any doctor.”

Nursing complaints about communication with the medical team were similar to the other units within Galen. Nurses told stories about learning about a patient’s discharge from the patient directly, only hours before it was supposed to occur. Another nurse provided an example of a patient who was on three blood pressure medications, but one physician told

the patient to take only one, while another told him to take all three. “I’m in the middle now,” the nurse recounted, “not knowing what to tell the patient.”

One afternoon, I joined three nurses who were gently making fun of doctors who wrote impossible orders— a “stat” urgent order for urinalysis, but for a patient who was in severe renal failure and not producing any urine. Another nurse told a story about a new inexperienced nurse on the unit, who attempted to follow the order blindly by catheterizing the patient. “They’re hospital medicine,” the nurses laughed, heartily but not unkindly. “They don’t know.”

The nurses viewed the lack of open communication channels with the medical teams as a potential threat to the nurse-patient relationship, especially as the patient can be aware that the nurse was given different orders to what the physicians told the patient. “It makes us look incompetent at times,” one nurse said, “as if the patient can see the gap between the nurses and the doctors.

Patients also complained specifically to me about this fact, even while I was working with the nurses. One patient, upon hearing I was a medical student, expressed his frustration over not knowing whether or not he was going to dialysis, or what the next steps for his day looked like. He pointed out that Galen provided remarkable medical care, “but you have to separate the medicine and the logistics. All of the confusion is with the logistics.”

Another patient expressed her frustration in a memorable fashion. The nurses often began the day by asking each patient what their own, personal goal for the day was, and wrote this goal on the patient’s room. I walked into her room, surprised, to see her goal: “teamwork for the doctors and nurses to work together and communicate.”

As a consequence, the nurses were forced to develop workarounds. “Oh god,” one nurse said. “There was absolutely zero communication. This is how I used to work: I would

always be on the lookout to see when my physicians came. I would be in the hallway doing my work, and if I see a physician going into the room, I would run in behind the physician.”

Another nurse would have her patients call her instead. “I’d make a pact with my patients,” she recalled, “and be like, ‘If the doctor comes in, call me.’ The doctor would come and they’d call me. I would know.”

Overall, the nurses viewed their working relationships with doctors as friendly and warm, but simultaneously perceived a significant gap in communication. While the nurse practitioners helped fill this gap, the nurses were forced to develop workarounds, frustrated by the lack of direct communication with the doctors. Information flow on this unit was similar to other units within Galen, and nursing complaints about nurse-doctor communication matched complaints elsewhere.

The Doctors and Nurses

In contrast, the doctors were less likely to complain about the quality of communication with the nurses, perhaps largely because the unit met the status quo. Nurse-physician communication on the unit looked as the norm on Galen, although physicians described relations with the nurses as friendlier than most. The discrepancy between doctors’ and nurses’ perceptions of the quality of *interprofessional* communication has been found in research elsewhere— doctors generally tend to perceive teamwork to be of a higher quality than nurses (Thomas, Sexton, and Helmreich 2003; Makary et al. 2006).

Within Galen, most general medicine units also held a standardized meeting to address interdisciplinary communication. Known as the Goals of Care Coordination

Discharge and Transfer (CCDT), physicians would report to unit conference rooms to present patients to a social worker, unit director, nurse shift manager, and a utilization review nurse.

The CCDT meeting, however, did not involve the bedside nurses, and information flow was primarily unidirectional. This unidirectional nature was not only observed in practice, but was also reflected in the official description of the meeting posted on a green placard: “Goal is for the physician is to talk about next transition for patients, whether it is discharge home, transfer to a facility, and to talk about what barriers/criteria need to be overcome/met for this patient” (sic). The doctor is the only one with an official speaking role.

As a consequence, the meetings felt very one-sided, and the doctors would spend the majority of their time speaking without interruptions. The others would take notes and nod, and for complicated situations, the others in the room would interrupt and provide discussion. Afterwards, the bedside nurse or the patient was not provided with updates or the result of a meeting outside of the typical channels.

Perhaps unsurprisingly, this meeting was a very loose ritual, and doctors often did not show up. Especially as doctors had patients across multiple floors, and each unit would schedule CDAT for different times, physician involvement could be sparse as they juggled multiple schedules across multiple units.

The CCDT Meeting

Dr. Evans presented his patients over slices of King's Cake, shared from one of the Unit 2A nursing technicians.

"Forty-one," Dr. Evans began, referring to the room number of the patient. "Do we really need to start the sputum process for him? This is the guy who came into the hospital with a previous diagnosis of tuberculosis, but the clinical story didn't really match TB— he had an acute shortness of breath and no real cough. He was placed on airborne precautions for presumed TB. I'd like to take the precautions off so that he can be discharged. He's homeless, so I can't discharge him unless the precautions are off."

"So he's a public health risk," the social worker said. "Are you sure he doesn't have TB?"

"His risk for TB is very, very low. I'm not sure why he was placed on airborne in the first place."

The unit director made a note on her sheet. "I'll chase this information down."

Running down his list, Dr. Evans talked about each of his patients on Unit 2A, highlighting their "social needs"— sometimes giving a quick clinical overview, but emphasizing their barriers to discharge. Several patients didn't have insurance, others were awaiting procedures, and yet others were homeless or lacked family. The utilization review nurse spoke up several times, asking Dr. Evans to switch patients from "inpatient" status to "observation" for billing purposes.

He presented all of his patients on the unit, including a few we hadn't seen yet, but basing his comments off what he had read in the chart. "Anyone else?" His pager went off at

9:12 AM, as the others in the conference room shook their heads. “Thank you!” We left the room as the next physician began to speak.

Preparations

This cultural context led Anne to hope for something different, and volunteer the unit to implement the BMR intervention. The hope was to not only improve patient care and change communication with doctors, but further change the culture of the unit. “I was looking for something new and refreshing,” she said, “because I felt like I had done my part. We had gotten to a level, where it was like, what else could we do?” Anne felt that unit 2B was ready for a new change.

She found the change she wanted with BMR. Several things happened simultaneously to enable the expansion of BMR within Galen. First, the demonstration unit reported improved clinical outcomes and employee engagement, leading Galen executives to state within strategic plans an intention to implement BMR onto more floors. Second, a nurse researcher worked with Lee and David to obtain a half-million dollar grant from a government agency to implement and evaluate the BMR model within Galen. Anne volunteered the unit after hearing about the opportunity.

In actuality, Unit 2B had already implemented half of the unit-based care model—the four components included unit-level outcome data, geographic medical teams, nurse-

physician partnered management, and the BMR rounds. Unit-level clinical outcome data were already made widely available within Galen. The unit was also had geographic medical teams, although not perfectly so. Doctors on both the Galen hospitalist and private teams were assigned to roughly half of their patients on Unit 2B, and the other half on Unit 3B immediately adjacent one more level above. Variations in hospital bed placement ensured that both teams would have sporadic patients on other units within the hospital as well. However, as there were plans to implement BMR on Unit 3B in the future, this variation was deemed as acceptable.

Unit 2B only lacked a partnering physician director, and the BMR rounds. The unit was consequently viewed as “low-hanging fruit” for improvement, and had strong support for its implementation from both hospital executives and Anne’s staff. The implementation process was held to a very high fidelity to the process outlined in Chapter 3— using the combination of change management techniques, training, and opening rituals. Anne Jones was officially the primary driver of the implementation, although Lee and David provided substantial expertise and support. They contributed teaching materials, expertise from past implementations, training coaches, and helped, in their own words, to “make sure that the furniture is in place.” Both Lee and David emphasized that Jones retained executive decision-making, and that she should feel free to change anything she wished. “You are the driver,” they said to Jones, “although we’re back behind you whispering suggestions. You can do whatever you want.”

Yet, the tension between implementation fidelity and its localization onto Unit 2B became immediately evident at their first meeting a month before launch. Jones, Lee, and David met to review the leadership message, training plans, identification of a physician partner, and to devise the BMR diagram. Most of these were straightforward and mirrored

what Lee and David had conducted in the past. The contents of the BMR rounds, however, must be localized to fit the clinical needs of each unit.

For example, the contents of the quality-safety checklist must match the clinical nature of the patients on the unit, who were mostly renal patients. One of the original items on the checklist was urine output. “Do the words ‘urine output’ have the same meaning here?” Lee asked. The patients on Unit 2B make very little urine due to their renal failure, and adding an item for the checklist would cost both physician and cognitive space.

The group decided instead to substitute it with daily weights, which can be important in tracking the fluid load of the patients. What was particularly interesting was that the group included daily weights not only for its clinical value, *but for its social power*. “Weight by itself is meaningless,” Lee pointed out. The patients are all weighed daily, but the trend—differences between each day—is far more important for renal patients. The techs measured the weight of most patients daily, but it was felt that it would be inappropriate for them to describe the weight trends. Perhaps even more important are the dry weights, or the weight of the patient before entering the hospital with renal exacerbations. However, this information often was known only to the dialysis doctors, who would have to call the patient’s outpatient clinician for a dry weight.

“While I think it’s terrific to ask our nurses to get dry weights,” David said, “it might create more work.”

“Maybe that’s something that can come eventually,” Jones suggested. “I don’t want us to chase a dry weight— it’s hard to get it on the phone, calling the clinic. For the floor level, it’s not beneficial.”

“I think it’s important to include,” Lee said, “because if the techs are acquiring the information, then it needs to be shared in a meaningful way. If it’s part of the treatment plan, then it’s something you should capture.

“I’m going to stay on the patient,” continued Lee. “It’s not about the nurse or the doctor, it’s about the patient. What I am suggesting is that for your staff and doctors, it doesn’t matter where the dry weight comes from, but for introducing it into the conversation so that someone takes that responsibility. Somebody is taking that on as a team, so we do really get a dry weight somewhere—”

“It’s an empty data point,” David said.

“—but I think that’s an opportunity to share information,” Lee said. Lee’s argument was that the weights were a valid point of discussion, and simply including the weight and dry weights would generate an “accountability moment,” demonstrating to the others that the measurement was taken, and discussing its value in context of the patient. The group decided on leaving daily weights in the checklist, written as “Today’s Weight & Dry Weight.”

Jones then suggested a dramatic change. BMR rounds on Unit 2B so far included the nurse, social worker, and the doctor and midlevel provider from the medical team. A dedicated dietician or pharmacist was not available to make the rounds. The medical teams also did not have residents or medical students, so there was time for an additional speaking role. Jones wanted the nurse techs to be on the round.

Lee and David hesitated, and suggested that instead the techs should act as “active listeners”—where they have no scheduled speaking role, but instead speak up as necessary. “Or, what if they are set up, but the contribution is made to the nurse before BMR?” David suggested. “Their role is to watch what the nurse is reporting, and if down the road there’s a real hunger we can change it.”

“If you give them a speaking role to begin with,” Lee chimed, “it might be harder to kick them out than to put them back in.” Their concerns were understandable. BMR rounds were meant to be very short, and the addition of speakers could lengthen the rounds and threaten its viability. Nursing technicians also did not generally speak with physicians, and it was unclear if they would offer valuable information.

Jones initially agreed, but later in the meeting, pushed the issue more directly. “I’ll be very honest,” she said. “I think my techs know more about the patients than the nurses do. When I really need answers I go to my techs. They are at the bedside ten times as much than the nurses are. The nurses go room to room and talk to the patients, but that’s not what my techs do.

“They’re also a bit different with the rapport they have with the patients. They get things out of the patients nobody else gets. When they get out and sneak a drink of orange juice, or when they get kicked out of their apartment at home, they tell the techs that. They have a better rapport with the techs than the nurses.” Jones talked about how she wanted to cultivate teamwork between the two groups, and how the techs have performed a high level, often calling more code METs than the nurses. “Why is it that nurses have to be over the techs? If it’s the falls team, why does it have to be over it? They said they have to co-lead... There’s no big I’s and little U’s. They’re all on one level, not the nurses and techs on different levels.”

Lee and David were skeptical but supportive, emphasizing that the unit was Jones’s. “This is your unit, but one of the things to think about is how you’re changing their workflow, and how it impacts the amount of work for them.” Jones had already spoken with the nursing specialty director, who agreed that the unit would be protected from “floating.” If other units were short-staffed, both nurses and nurse technicians would not be taken off

the unit to balance staff elsewhere. This ensured that there would be enough techs to cover the work before and during BMR, and protected the charge nurse's time to act as the rounds director.

After substantial discussion, the group decided to go ahead to add the techs to the rounds. "This will be groundbreaking," Lee said. "This will also be the first renal unit." Jones brightened.

"This will be the first time we'll have the tech in it," Jones repeated, slowly. "This will be groundbreaking. I can't wait to tell the techs!"

The Launch

In the four weeks before the implementation, the group moved to train the unit staff into the new model. Announcements were made at the nurses' staff meetings, alerting them to the upcoming change with expectations that the nurses would attend training sessions. As described in Chapter 3, the trainings were delivered in Lee and David's trademark style—almost evangelical in nature, and presented not only the technical components of the new BMR rounds, but also a vision for how teamwork should function. The training transferred not only technical knowledge, but socialized participants into the new model.

The attitudes during the training were positive, which were primarily attended by the nurses and techs. "I'm so hopeful," one nurse said. "I'm very happy for this class... I started working maybe six weeks ago, and I don't know these doctors. 'What did your doctor say?' That's how we get information. Calling and paging... It's very frustrating." In addition to the

course, the nurses were also sent to visit the flagship unit within Galen. Nurses were paid to attend, and observe how the rounds worked at the flagship unit.

Throughout this process, Anne Jones emphasized the need to do what it takes to adapt the model to the unit. “This is going to be a work in progress,” she said at a training. “We have to maintain a positive outlook, and come to the table and we’ll work on it as we go. It’s not going to be perfect. We’ll take it on, and make it good for *us*.”

In addition to the training, change management was conducted largely as described in Chapter 3. Letters were sent out to doctors, and a physician partner was identified. The completed BMR diagram was framed and placed onto the wall, complete with the techs in a speaking role. A separate frame held the covenant, which was signed between Anne Jones and the physician partner with fanfare. The nursing staff gathered in the hallway to sign, and Anne asked me to take pictures with her camera. I snapped pictures of the group, smiling and excited.

Both the chair of hospital medicine and the leader of the private practice doctors agreed to the change, largely being told that the change was going to be the new status quo on the unit. The doctors were not mandated to attend the training sessions, although the private practice group received a short presentation from Lee and David. The hospitalists were not all previously trained, but many of them had experience with BMR on the flagship unit or previous implementation attempts within Galen (see Chapter 5). They did not alter or change the physicians schedules, and largely felt confident they would be supportive. “One thing we learned on the doctors’ side of the house,” Lee explained, “is that you just need two doctors to do it, and the rest come along afterwards.”

This excitement carried through to the end of the month, when the launch date came. It was the end of nurses week, and balloons were up around the unit. The nursing

staff gathered to take a picture in the break room, which lent an air of ceremony to it all. The nurses and techs had dressed up at Jones's warning of photographs and visitors, and one of the older nurses proudly pointed out that she had dyed her hair for the occasion. The clock rolled to 9:30 AM, and a large group of twelve gathered at the nurses' station—the visitors included a few administrators and the BMR coaches brought by Lee and David.

“Good morning,” said the charge nurse. “We’ll be starting in room 12. Doreen is the nurse.” The rounds had started.

After the Rounds

As the weeks passed, Unit 2B conducted BMR rounds faithfully on each weekday morning at 9:30 AM. The implementation had occurred smoothly, with the typical learning curve seen for new units as the team members learned how to navigate the rounds. The techs were also asked to conduct morning vitals again, as the nurses found themselves in need of additional time to prepare for the BMR rounds. The rounds were conducted with the sense of teams forming for the first time.

Lee and David also provided training coaches for the first few weeks, consisting of nurses from the Galen flagship unit. The nurses observed the BMR rounds on Unit 2B, and gave feedback in a debriefing session at the end to all members of the group. While the coaches were meant to provide knowledge to the group on best practices involving BMR, they also normalized the practice of nurses providing feedback to doctors directly. Perceived

as experts, their outsider status enabled them to speak across the traditional hierarchy of the hospital.

During one feedback session, the coaches emphasized to the nurses their need to present the checklist efficiently. “The quicker you are with the checklist,” one coach said, “the better the doctors will pay attention.” The coaches emphasized the need to be diligent with the checklist, as some nurses tended to ramble and lose the doctor’s attention. One of the nurses had gone into great detail about a patient’s blood sugars, while the nurse was expected to simply identify if they were abnormal.

The doctor interjected. “My preference is if the blood sugars normal or not— well, first, I already know the labs. I pre-round for two hours before rounds looking at the chart, but the nurse might not know about the changes [I already made].” One of the nurses made a surprised noise— she wasn’t aware that the doctors arrived at the hospital that early.

The coaches then turned to the physician, who also had a tendency to walk very quickly between rooms, and often waited for the rest of the team to catch up. “Your quickness sets the pace,” the nurse began to say.

“—and can bring us a lot of anxiety!” Jones interjected, smiling. The group laughed.

“So what you’re saying,” he laughed, “is for me to chill out!”

“But you also take your time to teach the nurses, and that’s really great,” the coach continued. “You take your time, and then you go into the plan for the day. However, sometimes the nurse’s input will change the plan. It might change with the nurse’s input, or the patient’s input if there’s a fever or something.” The coach emphasized that stating the plan of the day should be saved until the very end of the round.

“We’re retraining the way we think,” she pointed out. This was a major disconnect in mental models between the BMR coach and the physician— from the BMR coach’s

perspective, the nurses and techs had information to offer that may change the plan of the day. The doctor therefore shouldn't state the plan of the day until after hearing input from the others. In contrast, the physician expected to form the plan for the day with autonomy, and had already done so based on the pre-round review of the patient's chart. Physician autonomy was the expectation, and the new process within BMR presented a significant deviance from cultural norms. Bedside nurses are not typically able to challenge these norms, but the BMR coach was empowered to highlight these differences to the doctor.

There were limits, however, to the ability of the nurses to affect the doctors within the hospital hierarchy. While the vast majority of doctors were willing to participate in BMR, a few doctors resisted giving up control. For example, the charge nurse began rounds one day by identifying the first patient, only to have the doctor abruptly walk towards the opposite side of the unit, away from the patient. The other members rolled their eyes. "You can't just drag the doctor," the charge nurse whispered to me.

Afterwards, the team stops to debrief, but the doctor gets up to leave. The charge nurse calls the doctor over and asks if she had any feedback. "It's fine," the doctor said, "but let's get one pattern and stick to it." The charge nurse explained that this wasn't possible, as the nurse were assigned patients by acuity and not proximity.

"So, this is around the nurses," the doctor said, frowning, "and not the doctors?"

"Yes, because it can be hard to get a nurse back on the rounds with interruptions."

Rounding on the patients sequentially would mean that the nurses would have to come in and out constantly, rather than finishing all of the patients for a particular nurse at a time.

"I also hate interruptions," the doctor curtly replied. "And this is an interruption to my day." The doctor swung around and left the group behind. The group stood in awkward silence, and then cracked smiles as soon as she was out of earshot.

“She’s very important,” someone said sarcastically, laughing. “Don’t you forget that.”

Individual personalities played a major mediating effect in these types of interactions. However, what is more important is to ask *why* this particular doctor felt empowered to respond in this fashion, and why the rest of the team lacked the ability to respond further. This short interaction, fraught with tension, embodied the fundamental conflict between the BMR intervention and the traditional hospital hierarchy. Physicians stood at the top of the hierarchy, accustomed to exercising considerable clinical autonomy and giving orders. This doctor was able to alter the rounds pattern, despite the round manager indicating otherwise, and yet the others followed. The physician also ignored their feedback during the debrief, and took the opportunity to complain about the rounds. The others lacked the ability to say anything further to reprimand the physician.

This conflict also illustrated a major disconnect between the context and the implementation plans. The intervention was not designed with the local doctors, but developed by Lee, David, and Jones without input from the hospitalists or the private practice doctors. The physicians were also not required to attend the trainings, and the coaches— all nurses— lacked the ability to frame the rounds for the doctors. As a consequence, some physicians did not immediately perceive value in the rounds. The rounds would have to prove themselves to the doctors.

Rise of the Techs

The most dramatic changes on Unit 2B arose from the inclusion of the nursing technicians on BMR rounds. This was encapsulated on the very first day of the rounds, with

the unusual sight of one of the nursing techs presenting to the chair of hospital medicine. The fact that the chair was on the unit was a coincidence— Lee, David, and Jones did not seek to manipulate the physicians’ schedules— and the chair was simply the first to rotate through. Within the formal hierarchy of bedside staff, this interaction was unusual as the chair represented the very top, while nursing technicians are generally at the bottom. On Unit 2B, this conjunction was to start occurring on a regular basis.

Within the hospital hierarchy, those who are most in power spend the least amount of time with patients, and vice versa. As described in Chapter 2, doctors and nurses spend a considerable amount of time charting and completing paperwork, and administrators typically spend little or no time with patients at all.

In contrast, although the techs carried the least amount of power, they spent a lot of time in direct patient care. Much of their time was spent assisting a patient in the activities of daily living, and their “Ins and Outs”— how the patient was eating, drinking, urinating, and defecating. Although they carried a patient load of eleven or twelve, they formed strong relationships with their patients. Simultaneously, they lacked medical information about their patients, and received only a rudimentary handover from other techs or nurses. A tech might know that a patient was not to eat or drink (“NPO”), for example, but not necessarily the reasons behind the order.

Jones saw an opportunity to educate the techs, but also intuited that their knowledge would be useful to others. In the official description developed alongside Lee and David, the techs were to relay information about the patients’ personal needs, identifying both what happened in the past twenty-four hours, and anticipating what was likely to occur in the next. However, no one was certain whether or not this information would be found valuable by others, and Lee and David remained skeptical. Even one of the techs assumed so, telling

me before the launch date that the BMR rounds were “more for our benefit, so that we can plan for the day.”

Once the rounds began, the fact that including the techs represented a dramatic cultural shift was abundantly clear. For example, the doctors were meant to introduce the team members, but some would leave out the techs on both the introductions and during the round. Nursing technicians are generally very marginalized, and the techs had often complained of being ignored completely by doctors, either within patient rooms or walking past on the unit. In ethnographic work elsewhere, nursing technicians have been described as possessing a distinct occupational identity due to their marginalized status (V Lloyd et al. 2011). Now, the BMR script forced the Unit 2B doctors to learn the techs’ names on a daily basis.

The techs’ role also rapidly evolved beyond the initial description of identifying the patients’ needs. Perhaps as expected, they often reported clinical updates, such as the discovery of new bed sores, or the fact that a leg had become swollen in the morning. The techs spend a considerable amount of time bathing or changing of the patient— as doctors and nurses do not typically undress the patient completely unless specifically conducting an examination, the techs observe a patient unclothed on a more regular basis.

The techs also advocated for the patient, and provide rationales for patients’ concerns. During one BMR round, for example, the rounds highlighted the patient’s lack of an appetite as a potential medical issue. However, the tech chimed in. “You haven’t been eating because the food tastes bad, not because you’re nauseated,” one tech gently said to an elderly patient during rounds, with a knowing glance at the physician.

“Her potassium has been okay,” the doctor replied, checking her notes. “I’ll check with the renal team to see if we can switch her off the renal diet.” The renal diet was a low

sodium diet, and doesn't taste particularly great— what could have been interpreted as a sign of a more serious medical issue had a simple culinary fix. Another tech reported that a patient wasn't eating because they were afraid of becoming nauseated, and the doctor suggested increasing the dose of some medications.

The techs also helped correct false information between the patient and the medical team. For example, one patient told the medical team that they were capable of walking, but the tech reported that they actually couldn't walk nor feed themselves. Another patient had told the medical team that they were incapable of walking, but actually could. Yet another patient had told her doctors that she could eat and feed herself, but the tech reported that she needed assistance with both. All three of these situations can have consequences for discharge planning, as a patient who cannot walk or feed themselves requires specialized discharge plans, and usually needs a consult by the social worker and a physical or occupational therapist. For these patients, the techs helped ensure a timely discharge, as otherwise these issues might result in a delay.

“They'll say one thing,” the tech explained after the rounds one day, “but then you'll see something totally different.” She suggested a new question for patients: “When you said you were walking/feeding yourself, what exactly did you mean?”

The fact that patients may provide false information may be surprising to those who work outside of healthcare, as is the fact that doctors do not verify the information provided, especially for something as simple as walking. Within the acute care setting of the hospital, the medical team is focused on the patient's primary medical issues— for these patients, they were focused on managing their renal issues and not necessarily issues with daily living. “It has struck me how much we miss,” one doctor observed, “because the nurses are busy with a million other tasks, and the lot of documentation that they have to do.

The physicians are focused on coming in and doing a physical exam, addressing labs and meds and stuff that the nurses have brought to their attention, but we overlook things like he only ate a quarter of his breakfast this morning.” In contrast, the techs are focused on the patients’ activities of daily living. This likely represents a true cognitive load, as medical personnel cannot focus on all aspects of a patient’s care all the time.

Patients also commonly provide false information to doctors, and provide different information to different members of the clinical team. Studies within hospitals are lacking, but surveys of patients find that false information is often provided in the outpatient setting (Burgoon, Callister, and Hunsaker 1994). These likely comprise true deception only in a minority of cases (Palmieri and Stern 2009), and more accurately rather reflect the reality that provider-patient relationships are relationships between two human beings— mediated by personality, psychology, and culture.

The final perceived advantage of involving the techs involved this difference in relationships with the patient, as the newly formed clinical team could take advantage of the tech-patient relationship. One memorable case involved an elderly man with severe arm wounds. He continually refused for days, however, the hyperbaric treatment that the medical team recommended. The patient was elderly and had largely given up on their treatment, and refused to enter the claustrophobic hyperbaric chamber.

The nursing technician was the one who was able to convince the patient to go. She did so without prompting, and no one asked her to speak to the patient. Prior to BMR, the nurse tech would not have been alerted to this issue at all, which would’ve remained privy between the doctor and nurse. However, as the tech now had access to the plan for the day, she took the initiative to talk with the patient while she assisted with the bath.

The physician was ecstatic. “Congratulations!” he exclaimed to her outside the patient’s room the following day. “That’s a good job, obviously. You did a better job talking with her than we did.” The physician was established and very senior, and they stood in the hallway, beaming.

Later on, the physician reflected on this patient: “For me, that was a very pivotal event. When we see patients, we may spend ten or fifteen minutes in the morning, but we typically don’t see them again unless something is going on for the rest of the day. But the nurses are in and out of the room, the techs are bathing people...”

“Even though I’ve got the M.D.,” he said, “the person who is really caring for the patient is the person who is feeding them their meals and changing their dressings and putting a bedpan up under them. Those are the people who are really caring for them.”

Within the culture of the hospital, the ability to positively influence patient care was heavily valued. The BMR rounds placed the doctors in consistent contact with the techs, and the techs demonstrated that they not only possessed useful clinical information, but helped correct false information and could leverage their relationship with the patient to improve the patient’s care. This elevated the techs’ status, and improved the perception of the rounds.

Intriguingly, the techs remained elevated in the hierarchy beyond this incident. The nurse practitioners held the techs in greater regard— at another round, one of the nurse practitioners asked the tech about a patient, “Do you think she needs physical therapy?” Two visitors to the unit were stunned, whispering to each other, “Here, they ask the *techs* if they need PT?!”

Changes in status also persisted outside of the rounds. During one morning at the nurses’ huddle, the techs were invited to lead the huddle and read off the main sheet.

Another day, one of the techs celebrated that a doctor actually greeted her in the hospital cafeteria, which had never happened before.

Three weeks after launch, the group gathered to celebrate in the break room. There were pictures and food, and Lee and David came for the occasion. Lee told the group that initially he wasn't sold on the idea of including the techs, but now he sees the techs as "not widening the role, but making them accountable."

"— And including them as part of the team!" one of the nurses chimed. The group cheered spontaneously, and they set up to take pictures. One of the doctors was running late, and to his surprise, he walked in with a giant round of applause for the staff cheering for him. They huddled around for a picture, and then moved to have lunch, eating together.

Conclusions

From an anthropological perspective, how can we understand what happened on Unit 2B? Every indication suggests that the culture of Unit 2B has fundamentally changed. The BMR intervention has brought doctors and nurses to work more closely together in a friendly fashion, and, most dramatically, the techs were included into the medical team. The hierarchy of the unit was altered, the techs elevated, and the doctors included into unit culture.

An alternative interpretation might be that culture didn't change at all. After all, teamwork values were already strong on the friendliest unit in the hospital. Anne Jones, the Boss Lady, worked hard to ensure that teamwork values were practiced on the unit, and going as far to remove those who did not "fit" the desired culture. The changes could be

interpreted as an epiphenomenon of the particular collection of personalities, and physicians already engaged with the nurses simply engaged more after the implementation.

While individual personalities obviously played a major role, what is far more important is that the fundamental rules for interaction on the unit have been altered. The BMR ritual had two major effects. First, the BMR rounds simply brought the doctors into daily face-to-face contact with other members of the team. This contact included not only the BMR rounds themselves, but also conversations between patients, during debriefs, and unit celebrations. Contact allows for ideas and values to spread, as doctors, nurses, and techs converse about the care of patients. Before the BMR ritual, ideas and values would have limited opportunity to be shared between doctors and the nursing staff.

Contact also likely helped initiate psychological processes that enhance intergroup behavior. Previous research has suggested that group conflicts decrease when contact is initiated, particularly when four key conditions are met— equal status, common goals, intergroup cooperation, and the support of authorities— and of which the latter three comprised a clear component of BMR. This *contact hypothesis* was largely derived from research on ethnic and racial tensions, but has been applied to other types of groups, including the elderly, AIDS victims, and computer programmers (Pettigrew 1998; Pettigrew et al. 2011). These psychological processes are likely occurring between hospital occupational groups as well, especially given the strong link between occupation and identity for hospital workers.

The second major effect of BMR was that the rounds provided a series of rules for unit members to interact with one another and in front of the patient. In many ways, BMR could be viewed as a performance, and many participants described the rounds as such. The members of the team are provided with scripts, and these dictate how the team members are

permitted to interact with one another. At the training sessions, those at the bottom of the hierarchy are explicitly empowered to speak across the hierarchy, an act that is further enforced by the notion that patients come first. Within the stage of the BMR rounds, watched by both the patient and the BMR coaches, the team members must interact with one another within these rules.

These scripted interactions are reminiscent of the interaction rituals described by Goffman (1959), who argued that small rules modulated how we interact with one another. Social rules are also bounded to particular spaces— for example, waitstaff in a restaurant act a certain way within the “frontstage” next to customers’ tables, but become free to drop these roles within the “backstage” of the kitchen. The BMR rounds provide an example of how these social rules can be changed, as the intervention explicitly enacts new rules that must be followed within a new frontstage at the patient’s bedside.

In addition to these two psychological effects, BMR was perceived as high value by the nurses and doctors. First, BMR was compatible with existing cultural norms of the “friendliest unit” as envisioned by the Boss Lady, and reinforced the unit-level identity of the Unit 2B nursing staff. Second, the implementation was reinforced with strong leadership support, from Anne Jones, the hospital administration, and the medical directors of both the hospitalist and private practice physicians. Third, the unit participated in storytelling and celebrations that reinforced the value of the ritual (e.g., the techs convincing the patient to go to hyperbaric therapy). Finally, the inclusion of the techs was perceived as useful, novel, and a key part of the Unit 2B identity.

Not all of the factors on unit 2B would have predicted success. For example, the implementation was fiercely “nursing driven”, and the physicians were largely disenfranchised throughout the process. The content of the checklists was devised without

physician input, for example, and physicians were not required to attend the training sessions. A physician partner was brought on board, but his role was largely nominal and he did not play an active role in the implementation. Perhaps as a consequence, there was considerably more physician resistance than nursing resistance. The private practice physicians had the most to lose, as the additional amount of time involved in the rounds was directly attributable to a loss of income for the group.

Anne Jones explained, “If nurses want to do something it’s a process and it goes on and on. Sometimes we get what we want a lot faster through the doctors, and they know that we’re using them. If nurses want to do it, it goes to unit groups and might be a whole year before going to committee.

“For us, I think in the beginning there was a time that we wanted to show the doctors that we are capable, that we are competent, and that we can do this. It was important for nurses overall to make sure that the doctors still see us as leaders and still have respect for what we do. And we knew that this was our time to shine... This would be an opportunity to show our leadership skill, and to have the doctors see us as leaders.”

As a consequence, the implementation process was largely focused on the nurses and techs. Power was exercised over the physicians in three main domains. First, the intervention received explicit endorsement from within the physician hierarchy, as BMR was endorsed by the director of both physician practice groups, as well as Galen hospital administrators. Second, informal power was exercised through the BMR coaches, who normalized giving feedback across hierarchies. Although this technique had clear limits, the BMR coaches established an additional pathway for nurses to influence doctors. Finally, the nurses and techs comprised the constant presence on the unit— while doctors wielded more power

within the hospital hierarchy, their presence was only transitory. Their consistent presence allowed for the insistence of new practices, despite physician resistance.

Perhaps most importantly, both groups perceived value in the BMR intervention. While resisters were found within both doctors and nurses, the majority perceived the BMR intervention as both novel and useful. The intervention also enacted values of collaboration and patient-centered care, both of which were previously established values within the healthcare profession. Key narratives between the techs and the doctors further reinforced this profession.

In short, the intervention on Unit 2B created precisely the effects that Lee and David initially intended. “Out of all of the units I’ve rolled out so far,” Lee said at a later celebration, “Unit 2B was by far the strongest.” Unit 2B presented a case where nearly everything went right, despite obvious deficiencies where things could have gone wrong.

- CH 5 -

UNIT 3A

I was looking over our patients in the AccuRec computer system when one of the charge nurses strolled by, fuming. “You want to write a book?” she asked, angrily. “This needs to be in the book!” Normally a cheerful presence on the unit, I had never seen her so distraught. She tells me the story without any prompting.

One of the patients on the unit required a blood transfusion, and her blood type was B positive. The blood delivered to the unit, however, was B negative. The nurses were in the process of setting up the blood when the patient abruptly announced that she no longer wanted to receive it. The blood was already “spiked,” meaning that a plastic connection tip was already inserted into the bag, and the blood would have to be thrown out at this point.

The patient’s reasoning was that the blood type was an imperfect match. However, B positive individuals can safely receive blood from B negative donors, as the “negative” is reflective of a *lack* of antibodies to the Rh antigens found positive in the recipient. The nurse couldn’t convince the patient otherwise, and paged the doctor. Both the doctor and the unit manager attempted to persuade the patient, but the patient continued to refuse the blood. Eventually, the nurse threw out the blood, and, the doctor requested another unit of B positive blood for the patient.

“Put this in your book,” the charge nurse said. “What’s the limit to patients’ rights? At what point can we say no? At some places, you can say no. It’s a holiday season, and there’s a blood shortage right now. The worst part is that I have seen people die because we didn’t have enough blood.” She shook her head, and walked away.

This story was told to me as it happened, but the nurses also told it to one another, so it became its own mythology. The shared narrative embodied much of the tension I would later find on this unit—the nurses’ struggle with the tension between treating the patient as a customer and the paternalistic workings of medicine. The wasted blood also embodied the distance between the nursing staff and management, frustrations over new initiatives that seemed to prioritize patient satisfaction at all costs.

The story also represented a desire to be heard. Although I constantly emphasized that I was a student working on an academic research project and not an evaluation, nurses often asked me to help. “Are you writing this down?” The nurses would call. “You should be writing this down.” Others would indicate that they were speaking up because they hoped that it would help inspire change. Unlike the other field sites, this was a place where the nurses in particular wanted their voices included.

“Put this in your book,” they would say. “Put this in your book.”

All research suffers from observer effects. Voltmeters and thermometers must absorb energy from the systems they measure. Plant science cannot be conducted without changing the morphology and physiology of plants due to human touch (De Boeck et al. 2008). Genomic purification methods creates perturbations that alter the study of protein-

RNA interactions (Riley and Steitz 2013). Within quantum mechanics, the Heisenberg uncertainty principle suggests that there are absolute mathematical limitations beyond simple observer effects on knowledge—the simultaneous measurement of the position and momentum of an electron is impossible.

Social and cultural systems are even more subject to observer effects. Many students are taught about the Hawthorne studies, for example, where researchers were testing the effects of illumination on worker productivity. Instead, the researchers discovered that the act of observing a factory worker improved their output, regardless of illumination. Although researchers debate whether the original Hawthorne studies actually demonstrated a true effect (S. R. G. Jones 1992), the fact that people will consciously or subconsciously change their behavior when being observed has remained a major concern within the social sciences.

In ethnographic research, participant observation techniques make observer effects inevitable—almost a kind of uncertainty principle within the social sciences. An anthropologist cannot study a community from a distance, and interaction with the people under study is required. In response, anthropologists have argued that researchers must retain *reflexivity*, documenting the effect of the researcher's presence, as well as recognizing one's internal biases and limitations (Monahan and Fisher 2010). This process is perhaps not unlike recognizing how a microbial sample will be changed by the heat generated from the light of a microscope, and that any observations will be limited to the emitted spectrum of light.

Anthropologists have also argued that this reflexivity represents not a threat to validity *per se*, but may actually enhance validity by generating rich qualitative data (Monahan and Fisher 2010). Participants' reactions to researchers reveal underlying values,

assumptions, and desires. Conversely, recognizing when actions of participants occur *despite the presence of a researcher* may be useful. In the context of this study, for example, if doctors or nurses conduct or portray themselves poorly in front of a medical student researcher, it is entirely likely that these behaviors occur more frequently when nobody is watching.

The Hardest Floor

Walking down the green halls of Unit 3A, you hear a background din of almost constant activity. Three doctors are conversing with their students around two computer terminals, a bed alarm is beeping, a patient is yelling for a nurse, and nurses are coming in and out of the medication room doors, which open with a futuristic *whoosh*. There is a constant flurry of activity, and the sounds seem to reverberate down the halls.

Unit 3A was one of the largest units within Galen. Like Unit 2B, this unit also served patients from the general internal medicine service, and was even staffed by the same Galen hospitalists who staffed Unit 2B. However, the unit could hold fifty patients and was over twice as large as Unit 2B, with more than double the number of beds. The unit also specialized in being generalized, and admitted internal medicine patients with conditions that ranged from heart attacks to diabetes exacerbations to tuberculosis.

Organized as two large rectangles, the unit was connected by a hallway that ran alongside the outside of each rectangle. Within the center corridor stood the nurses' station, horseshoe-shaped. At the top of the horseshoe sat the unit clerk, while shared computer terminals ran alongside each edge, where doctors and social workers frequently worked. The

nurses usually pushed along their own computers-on-wheels, sitting in nooks along the outer hallways.

Adjacent to the nursing station was the large conference room, comprised of a large oval table, a coffee machine, and refrigerator. The table held only nine chairs, and there was often an amusing battle for these chairs— physicians would come in and steal chairs to bring them out to the workstation terminals, and then the nurses would have to take the chairs back. The break room walls were filled with bulletin boards, highlighting patient safety initiatives, hospital quality programs, and the current patient care team. One wall was lined with colorful paper and simply marked, “BMR: Stay tuned for details!”

Like the other units at Galen, the conference room comprised both the social hub of the unit and the core space for meetings, huddles, and celebrations. In addition, two medication rooms were located on the wings of the unit, holding dispensary machines and other supplies. “The nurses use this room to vent,” one nurse said, laughing. Secured by the futuristic sliding glass doors, these rooms also provided relative privacy to converse. Both the medication rooms and the conference room were the domains of nurses.

A few doctors had initially warned that the unit was not a warm place. Instead, I found an incredibly warm reception, and the nurses engaged in the same type of fictive kinship as I encountered on Unit 2B, claiming one another as family. “I love working with my co-workers there,” one said. “We have each other’s back.” Many of the nurses had worked together for more than a decade and knew one another well. Nurses often brought in food or tea to share, and the conference room housed many conversations about the families, children, and patients.

“Everything we do,” another nurse chimed in, “is because of this.” She pointed at the space between herself and one of her fellow nurses, emphasizing their connection. “We love our coworkers. Seriously.”

Despite the warmth between nurses, they also viewed the unit as a very stressful place to work. The patient population had a reputation for being especially difficult, and often included chronic disease patients, IV drug users, homeless patients, and the uninsured. Furthermore, while the flagship BMR unit operated at a 1:4 nurse-patient ratio, the observed ratios on this unit were consistently around 1:5 or 1:6. “I think the work is a lot harder than other units,” one of the nurses said. “I find it to be a little disappointing sometimes, I really do, because you get labeled, this is the hardest unit. ‘Oh, you should see this one, oh my God,’ they say, ‘that’s the hardest floor.’”

This heavy workload revealed itself in the social language of the unit. Asking nurses, “How are you?” often generated a response specific to Unit 3A. Within the North American context, anthropologists would consider this question to be an example of *phatic communion*—the question is not meant to be answered literally, but instead initiates a conversation or signals acknowledgement of another person (J. Coupland, Coupland, and Robinson 2008). Culturally appropriate responses in the United States might include, “I’m good,” “I’m fine,” or “I’m well.” On Unit 3C, however, frequent responses included, “I’m here,” or “I’m hanging in there,” or, simply, “Busy.”

On one particular day with threatened inclement weather, the charge nurse walked right up to me as I walked onto the unit. “Howie,” she said, “thank god you’re here.” She handed me one of the nurses’ phones. “We’re really desperate. Can you handle non-nursing

concerns for the patients? Welcome to the team.” I found myself walking about the unit, fetching towels and sheets and cups of water for a few hours during the staff shortage.

The heavy workload somewhat cooled the warm relations on the unit, and negatively affected intraprofessional teamwork among the nurses. “We still have teamwork,” one nurse reflected, “but it’s not as great as it was... If I’m drowning, and you’re drowning, how can you possibly help me? We’re all drowning.”

On Unit 3A, I rapidly discovered that there was a moral economy in the decision to help another nurse—a nurse must weigh the benefits of helping another nurse against lost time in their own work. One nurse described it as the “ABC’s” of helping. “It’s never just one thing,” she explained, recalling a recent example where she went to help take down an IV antibiotic, and then ended up chaperoning a vaginal exam. This patient was then discovered to have a vaginal fistula, and then she had to stay to help clean up the patient. What was originally meant to be a quick assist ended up substantially placing her behind. “ABCs!” she said, shaking her head and exasperated.

The workload also negatively affected the teamwork between nurses and the nurse techs. During a particularly tough week when morning vitals were not being completed on time, the nurses called a meeting with the nursing technicians, without the managers present. One of the nurses began to ask for their help— instead, the nursing technician shook her head. “Nuh-uh,” and walked out of the room.

The doctors were aware of the perceived nurses workload. “Stress at every level,” was how one physician succinctly described the unit. “If you look at the unit as a person,” another physician said, “this is kind of a slightly anxious person.”

While many of the doctors emphasized that the nurses were “very good” and “very competent”, the doctors also highlighted that it was a challenging place to work. “I feel like I

spend extra time out of my day apologizing to the patients sometimes for the nurse's behavior," one doctor recalled. "Of all of the floors at Galen, I feel like that one I had the most difficulty getting things done. There's more excuses from the nurses."

Yet, many of the doctors were also quick to defend the nurses. "There's a different type of patient that comes up there than other floors," one doctor said, "and so I think that kind of exhausts the nurses." Another doctor emphasized that there was a high rate of HIV and substance abuse patients. "There's a lot of drug-seeking and homeless patients," another doctor reflected. "Not that that's everybody, but I feel like over time, you feel the nurses probably feel abused or taken advantage of, and, I don't know, makes it not as motivated to do their job or do it well. So I can't really blame them."

Another physician suggested a connection with chronic disease. "There's just a lack of reward sometimes with chronic illness. You just don't see a benefit. You don't get that instant satisfaction like you would on another floor when treating somebody with a heart attack, for example, when you treat them and their pain goes away. They get better and they go home.

"Someone who comes in with a diabetic crisis, however, because they stopped taking their insulin and because they couldn't afford it. So you get them back in control this time, send them home, but they're going to be back tomorrow, so you just..." She trailed off, shaking her head.

Both tribes were quick to defend against generalizations, and often highlighted particular doctors or nurses who were excellent. Yet, the doctors tended to rate the unit more negatively against other Galen units with similarly challenging patient populations, and considered the unit a more challenging place to work. The nurses similarly voiced frustration with the doctors, although I found more heterogeneity in their opinions. Some nurses were

extremely frustrated. “The problem with this unit is communication. I can count on one hand,” one nurse said, “the number of doctors who are team players.” The nurses shared frustrations that doctors often did not communicate urgent issues with their patients, and some doctors didn’t even greet the nurses when walking into a patient’s room.

“If you don’t start [take the initiative] with the physicians, communication is dead,” another nurse recalled. “And for some of the patients, that means they may be dead.”

On the other hand, several nurses were quick to compare the unit against other places where relationships were truly hostile, and emphasized that this unit was not one of those places. “I like the teaching hospital,” one nurse said about the unit. “If you want to learn anything, the doctors will explain it to you.” Other nurses described that communication was generally good, and that they felt at ease paging and calling physicians. “I feel like the communication with the doctors and nurses on this unit are a little bit more open. It’s not so formal where you’re feeling intimidated. I feel like it’s friendlier, as opposed to the ‘I’m the doctor, you’re the nurse, do your job’ type of thing.”

This heterogeneity in opinions is suggestive that relationships and communication were dependent on individual personalities on the unit, rather than established norms of communication. These problems on Unit 3A were therefore similar to every other hospital unit within Galen. The frustrations perceived matched many of the traditional workflows between doctors and nurses, as described in Chapter 2.

“It’s a big hospital,” one doctor recalled, “so it is tough because there’s so many nurses. It’s hard to know everybody on a first name basis. It’s hard to trust. Communication is spotty. Some nurses will call you too much. Some will call you, some will never call you.”

I experienced many of these frustrations directly. As a medical student, I worked for a month on one of the teaching teams that covered Unit 2B. As is standard for most

inpatient physician teams, we took care of patients on multiple floors. There were few opportunities for informal interactions between the doctors and nurses. We would often work on computer terminals elsewhere, and the attendings would often retreat to the hospitalists' office completely separated from the patient floors.

As a consequence, the doctors were largely inaccessible to nurses outside of paging, which I experienced further from both sides during fieldwork for this project. Working alongside nurses, it was altogether too easy to miss running into a doctor if we were busy with other patients, and it was possible to go the entire day only seeing physicians once or twice. Interactions with doctors were as opportunistic and reactive, and as described in Chapter 2.

These problems were commonplace within Galen Memorial Hospital, and within healthcare generally. From this perspective, Unit 3A was an ordinary unit with typical problems, a “bread and butter” hospital unit lacking precisely the type of structure afforded by the Unit-Based Care Model and BMR. The fact that a solution existed within the Galen system was appealing to hospital administrators, and Lee and David presented data showing the dramatic improvements in the quality improvement metrics from the flagship unit. Although the hospital administration had originally suggested a significant budget cut from the hospitalist service, the administration decided instead to spend nearly half a million dollars to support the implementation of BMR onto Unit 3A.

The BMR implementation on the unit was consequently one of the best supported. The unit was successful in implementing all of the components of the UBCM, including geographic physician teams and a highly motivated physician partner. Yet, the entire apparatus would be disbanded after eleven months, and neither the unit culture nor patient outcomes improved. The intervention ostensibly made things worse.

What went wrong?

The Unit Culture at Baseline

In order to understand the failure of BMR on Unit 3A, there are critical components to the culture of the unit at baseline that must be understood. The first was the perception of the unit as the hardest floor, as described above. Nursing on Unit 3A was perceived as one of the most challenging within the hospital, due to both the complex patient population and the high nurse-patient ratio. The stressful home conflicted with teamwork between nurses, and also contributed to poor communication between doctors and nurses.

The nursing culture on this unit included four other major themes that played an important role in the implementation of BMR—the perception of nursing work as menial, conflicts with patient-centered care, the role of nurses as oppositional to management and patients, and a culture of workarounds. The boundaries of each theme are not discrete, and one often influences the other. Each will be considered in turn below.

Nursing as Menial

Despite the stresses on the unit, the nurses of Unit 2B carried tremendous pride in their work. “Nursing is a place for passion,” one of the nurses explained. “It is a place for caring for people, and wanting to give... It’s just such a phenomenal feeling to me, to go in

to someone who can do nothing for themselves, and you're there to just help and make them better." Many of the nurses described their initial entry into nursing in these kinds of words, attracted to the caring qualities of the job.

"Nursing is the noblest of professions," one nurse explained, "but here, it's become menial." The nurses explained that nursing has become the last contact point for the hospital, as many aspects of hospital care are provided through the nurse. In many ways, nursing provides the final hospital-patient interface— much of the caring and treatment work in the hospital are trickled down to the patient via the nurse, ranging from medications to food trays to bathing.

One of the nurses spontaneously and passionately gave a speech about this during an interview:

In nursing, we're not allowed to say we can't do anything. For example, if the kitchen says, 'You know what? We're just going to pull the trays up there, we're not going to deliver them.' Who do you think is going to deliver the trays? Nursing. If PT [physical therapy] decides that, 'You know what? We don't have enough people here today, and so we can't do range of motion [exercises], or whatever that's ordered.' Who do you think is going to do it? If pharmacy says they're not going to send something to do something, or it can't be done by the tube [pneumatic delivery system], who do you think is going to go get it?

We have to go get it because our focus is the patient. We'll go get it because the patient needs it. We are a group of people, of professions, that pick up what others say they can't. We have to keep it going. The ball has to continue to roll.

The work of nursing became perceived as more menial as more and more tasks ended up within the domain of the nurse. "They want the nurse to be everything," one nurse said, explaining that the role of the nurse included the work of social workers and psychiatrists. Multiple other nurses pointed out that paperwork has undermined the rewarding aspects of their work.

"We've lost that time to care," the nurse said. "A lot of it has to do with what the facility or the organization requires of you. They're trying to make themselves look good to try to get Magnet and the best scores... It's not as satisfying to me personally, because I remember the days when I used to sit like this, and talk with my patients and educate my patients. Back then, I had ten patients and I was able to sit down and do a one-on-one with my patients. I had more time with my patients. Now, it's all about paperwork. You've got to get this paperwork done. There's so much paperwork, and that consumes us."

"We've moved from taking care of patients to computers," she said. The nurse dramatically and tenderly caressed her computer station, laughing. "This is what we're nursing now!"

Charting in the electronic medical record is an example of the nursing concept of a *task*. The word carries special meaning among nurses, and is used differently from the strict definition of a task as a neutral term for a work activity. "A task," a nurse explained to me, "is something that someone without any nursing experience can do." Examples of tasks include filling out paperwork, or wiping a patient's mouth, or walking a blood sample over to the lab. A task can be meaningful or important for patient care, but anything that is considered a task is generally menial. No word exists for the antonym of a task, and, confusingly, nurses will use the lay definition of task as well.

In a busy environment like Unit 3A, nursing risks the possibility of becoming "task-oriented." As the number of things to do piles up, nurses can become too easily focused on the checkboxes within the electronic medical record. "Some people will just, next, next, next," one nurse said, drawing checkmarks with a finger in the air. "They're so worried about what's in this computer that they have to do, instead of being able to blend it all together." She explained that these nurses are not thinking about what's best for the patient, but instead

just doing things mindlessly to stay afloat. Even important actions, like conducting an assessment or delivering medication, can become "just a task" if the nurse is overwhelmed. As a consequence, the nurse is overly focused on completing tasks rather than on the patient as a person, and even the items requiring nursing expertise can *become* menial— a task.

Conflicts with Patient-Centered Care

One of the perceived pressures towards task-oriented nursing was the business aspect of healthcare. "Everything is about money, basically," one of the other nurses explained. "This is what nursing staff is supposed to do— be able to care for their patients, talk to them if they need to be talked to, listen to them... Now, you're trying to back out of the room because you know you've got five other patients you still have to see, and get all this stuff done, and they want you out of there on time."

Galen Memorial Hospital was in the midst of implementing wide-sweeping changes to better incorporate values of patient-centered care. PCC is generally thought to be one of the markers of a quality healthcare system and highlighted as a priority in 2001, when the IOM identified PCC as one of six key aims for a healthcare system of the future (Institute of Medicine (US) Committee on Quality of Health Care in America 2001). While definitions vary, the IOM defined patient-centeredness as "providing care that is respectful and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions" (6). The concept has gained in importance since, as measures of patient-centered care became publicly reported (Centers for Medicare Medicaid

Services 2015), and the Affordable Care Act (2010) linked Medicare reimbursements to patient satisfaction scores in 2012.

Historically, this marks a reversal of the paternalistic nature of healthcare. In contrast to older models of care where physicians made decisions on behalf of their patients, patient-centered care imagines a reality where patients are involved in their own decision-making, and hospital procedures are built around the needs and comfort of the patient. In many ways, BMR is designed to be a patient-centered intervention, as patients are encouraged to participate and in their own care on the rounds, and shared decision making is a key component of PCC.

For staff on Unit 3A, however, the push for patient satisfaction from administrators was disconnected from the nurses' day-to-day reality. The nurses reported pressures from management to implement a "hotel atmosphere" and the need to "cater to patients." As a consequence, unit management was perceived to be constantly defending patients rather than defending the staff, and increasing the menial nature of nursing work.

One story that was frequently told was about patients who were able to conduct their own activities of daily living, but refused to do so in the hospital. "People who can walk to the bathroom who refuse to use the bathroom themselves. People who don't want to bathe themselves because of whatever reason. I've seen the unit director call the nurse, and the nurse goes and they bathe them. Doesn't matter if they can do it for themselves. They still expect them to go in there."

"It's like we have to pamper now," she said. "I feel like people should be encouraged to try to do for themselves. That's really what nursing is also about, getting you back to your baseline.... I feel like it's all just because [the administrators] want that score, that high patient satisfaction. It's not right at all."

In addition to the story at the start of this chapter, the nurses would tell others of extreme cases where the management inappropriately prioritized patient satisfaction. Some of these narratives centered around abuse—for example, one nurse was called racist slurs and physically kicked by a patient, but the nurse was assigned to the same patient again the following day. Another story involved a tech who was taking care of a patient who was masturbating, and the tech was criticized for refusing to bathe the patient. In this context, the administration was perceived as likely to take the side of the patients, and the nurses even discussed purchasing additional supplemental liability insurance to protect themselves from racist or abusive patients. “You have to protect yourself,” one nurse said, pointing out that the nurses felt neither respected nor protected, and oftentimes abused. “Patient-centered care has a lot to do with it.”

Within the context of the hard work on the floor, the administration’s focus on patient-centered care became counterproductive. “We’re working short every day,” one nurse said, emphasizing the unit as the hardest floor. “And you’re talking about patient satisfaction! What can we do so we don’t have to work short every day, and then maybe our patient satisfaction scores will go up?”

While many of these perceptions were specific to Unit 3A, physicians also struggled with the concept more generally. At one memorable training event, the trainer encouraged the audience to consider patients the same way that hotels, restaurants, and airlines consider customers. “Does anyone like to get good service when you’re shopping or at a restaurant?” the trainer said. “It’s the same thing.”

One of the attending physicians in the audience raised her hand. “One of the most common complaints I get,” she said, “is ‘I need IV Dilaudid [a frequently abused opioid drug] and the doctor didn’t give it to me and I’m pissed.’”

“In the hotel industry, if you want a pillow or a squishier mattress, that’s fine,” she continued. “In the hospital, there’s a limit to what you can give and what’s medically indicated. How do I make my irate drug-seeking anxious screaming patient happy when I refuse the one thing they come in the hospital for?”

The trainer, who was a consultant and not a healthcare professional, provided an example response to the patient: “Mr. Frank I know you’re really frustrated that you wanted that Dilaudid. What did you want to accomplish?’ And then you figure out a new strategy to get— to accomplish that strategy. ‘I want to make sure that your security and healthcare is utmost importance to us.’ And then he realizes that you’re not against him and for him and then he can figure out for yourself that he can calm down.” While this response may be appropriate for customers in other industries, his response could be interpreted as unrealistic and naïve, failing to understand the complexity of working with drug-seeking patients.

More specifically, doctors were also aware that the patient population on Unit 3A was particularly challenging. “People want their bed turned down right away,” one doctor said of the patient population. He provided some examples, mimicking the pressured speech of a cross patient. “‘I want ice,’ or ‘This particular thing is not cleaned the way I want it cleaned.’ They just have an attitude, kind of like an entitlement. At least, that’s how I perceive it. I think the nurses try to do the best they can.”

Even when staff members recognize the value of patient-centered care, the hospital implementation could still cause stress. For example, Galen removed limitations on visiting hours in its effort to be more patient-centered, and family members were permitted to be present in patients rooms at all hours. “They can be stressful,” one nurse said, “as suddenly you have to respond to both the patient and the family.” She emphasized that having family

presence is important and believed that the effort improves their care, but one unfortunate side effect is that it increased stress for the nurses.

Patients Against Staff

As a consequence of the management's emphasis on patient-centered care, the nurses on unit 3A viewed their work in *opposition* to both patients and management. "You see that?" another nurse asked me, pointing to the diagram that explained Galen's new patient-centered model of care." It says patient in the middle, and then patient and family centered care. But family is sometimes helpful, but family can also sometimes hurt. Where is the staff? Staff aren't in the diagram, because all they care about is the patients."

This distrust of management characterized Unit 3A, and the hierarchy between nursing unit managers and staff nursing was very steep. Managers were rarely seen socializing or eating with the staff, and there was significant distrust between the nurses and the managers. "I think that's why they round on the unit," one nurse said about the unit's leadership rounds. Nursing leadership rounds have been rapidly accepted as a best practice for improving both patient and staff satisfaction, but here they have adopted additional meaning. "Because they're trying to find something or find us to see if we slipped up somewhere... It's almost like patients against staff."

One of the nurses explained how the patients could be seen as *against* staff, when the interactions are mediated through the threat of enforcement from management. "Even the managers tell them, 'When the nurses do anything to you, call the administrator.' We had

one patient who was cursing at the tech, ‘Oh, you, with your big mouth, I’m going to report you to the administrator’. That’s when we feel like they’ve been empowered to do that. Why would the first thing that comes out of your mouth, if you’re cursing out a nurse, be “I will report you to the administrator”?

The patients, they feel like, ‘Oh, because you are the nurse, I can talk to you any way I want.’ And because they’ve been empowered, “call the administrator.” I don’t even know the administrator’s number. But they know it, because they give it to them. And they tell them, “This is the number you call if you’re not happy with your care.’ And they use it well, too.”

While the unit officially had implemented a formal structure of nursing shared governance, where floor nurses sit on the unit’s leadership committees, the nurses perceived the committees as ineffective, and pointed to initiatives that were created by the unit management without their input. “You see, this is the culture here,” one nurse said. “Did they ask us? No. Where is the shared governance, and isn’t that part of Magnet? What a bunch of hypocrites.”

Within official venues of input, the nurses also believed they lacked agency to influence or create change. “People are scared to speak up,” one nurse said in a frequently echoed statement. “I feel like they don’t listen to us.” Another nurse pointed out, “I’m not sure that my opinion matters that much, as much as is the goal of moving forward. It doesn’t matter. It’s like, you could be having a conversation about something and be told, ‘Okay, let’s move on to the next thing,’ while we haven’t solved the problem I’m talking about. You know you’re not heard. I feel like my voice doesn’t matter. You finally get enough of the battling, and you say that, okay, they’re not listening. They don’t listen.”

“The management also doesn’t understand the staff,” another nurse summarized. The nurses wished that management would spend more time with them, wishing that they would round with the nurses instead. Unlike physician administrators, nurses do not typically continue direct clinical care once they are promoted to management. “Sometimes, I feel like I want to grab one of those higher management nurses, in the top management. And say to them, ‘Okay, take this assignment, and just go do it.’ Go take one assignment and just do it. And see how it goes.”

One nurse even provided a vision of how a patient-centered, staff-centered unit manager might act in response to a patient complaint. “You need to be two-faced,” she said. “You can go to the patient and say, ‘I’m sorry this happened,’ and to be concerned and all of that. And then you can go to the nurse and say, hey, that patient in 17, you need to be careful around her so watch how you’re acting. I’m trying to help make your day shorter, so just be careful.”

Another nurse pointed out that focusing on taking care of the nurses would help them take care of patients. “I feel like it should be more of like we come together and make sure the nurses are taken care of,” she said. “That way, if the nurses are happy, then your patients will be happy.”

In contrast to Unit 2B, the hierarchy among the nurses was markedly steeper, and the power structure between the unit management and the nursing staff was considerably more vertical. As a consequence, the nurses often viewed their job paradoxically— their primary purpose was the noble goal of taking care of patients, yet their work seemed to be in opposition to both the patients and management. At the core was the perception of unit management that did not understand its staff, which operated within its own silos.

“They expect a bit too much from us,” said a nurse. “We are not superwomen.”

A Culture of Workarounds

I'm working with one of the nurses in the medication room when one of the nurses bursts through the door. "The safety person is here," she yells, ducking back out. We rapidly do an about face, and leave quickly through the opposite set of doors down the hall.

"Did you know that I'm one of the safety reps?" the nurse quips. "It's ridiculous." She explains how the administration frequently asked them to do things in the name of patient safety that made little sense to the nurses. For example, you're supposed to only grab one saline flush at a time, rather than a bunch. Each "flush" was a small plastic saline syringe, without a needle, wrapped in a sterile plastic. Another example was how they expected to pull medications for patients one-by-one from the dispensary, rather than pulling medications for all the patients at once. The nurses did not perceive this as a threat to safety, as they were careful to separate the medications into separate bags, and the patient and medications had barcodes that were scanned before being administered.

"Is the safety officer a nurse?" I ask.

She laughs. "No," she says, "of course not." We round the corner to get back to our set of patients, and see the safety office farther down the hall. We make it into the patient's room. Safe.

With the rise of evidence-based medicine, healthcare has emphasized standardization. Yet, one of the most interesting paradoxes is that the workaround has consequently become a central part of the culture of healthcare. Among nurses in particular, workarounds are part of everyday life— nurses are called “masters of workarounds”, and learning how to workaround considered both an art and a central part of nursing training (Vestal 2008).

Definitions of workarounds are debated, but a useful one is to consider workarounds as “observed or described behaviors that may differ from organizationally prescribed or intended procedures. They circumvent or temporarily ‘fix’ an evident or perceived workflow hindrance in order to meet a goal or to achieve it more readily” (Debono et al. 2013). In this conception, workarounds must be distinguished from malicious deviant acts— nurses utilize workarounds to ensure that patient care is delivered in a timely or efficient manner. Workarounds are subsequently controversial, as some view workarounds as threats to patient safety, while others argue that they should be harnessed to improve care (Lalley and Malloch 2010; Halbesleben, Wakefield, and Wakefield 2008).

Examples of workarounds include those listed in the vignette above, but I also observed many more both during fieldwork and my own medical training. In this project, I sometimes noticed workarounds that were blatantly necessary— for example, needed equipment may be missing, or in the case of a national saline shortage, nurses are forced to use other saline types to achieve the same goals. Some nurses may bring their own equipment; for example, pocket oxygen saturation monitors are cheap and more easily accessible than the cumbersome devices in the hospital. Other more nurse-dependent workarounds included not charting in the room or clustering medications to help patients sleep, loading computer workstations with supplies, or charting medications within an hour

instead of the actual time. As a medical student, I was taught by residents to write certain orders stat even when they weren't urgent ("because otherwise they will never be done"), or give prescriptions in a certain way to ensure that patients without insurance would have sufficient pills. In all of these cases, officially sanctioned procedures or behavior is sidestepped. While workarounds are common within healthcare, what was distinct about Unit 3A was that workarounds existed for many practices established by the ward itself. For example, the unit conducted a morning huddle to review the patients on the ward. Huddles on this unit were chaotic—many nurses would come late or leave early. Others walked in and out, or would leave to answer a phone call. The managers also would not stay through the entire huddle. Those present would sometimes be on the phone, chatting, or doing other things. When I asked a nurse the rules for leaving Huddle, she emphasized that they understood that if you show up late or leave early, that you were working on something else. From this perspective, not attending huddle was a workaround to the organizational demands of nurses to be present, and a lack of presence ensured that you could properly take care of patients.

This workaround, however, ultimately threatened the value of huddle and its ability to help intraprofessional teamwork between the nurses. "Huddle is for all nurses to know what's going on the unit," one nurse explained. "So, if you see someone going into a room and you know that they are a fall risk, you can help out. But people arrive late and leave early. So what's the point of huddle? There's no point."

There were many other examples. For example, the nurses were meant to coordinate lunches, but this didn't always happen ("Just say anything, it's just for the record" the nurses once encouraged a visiting nurse when she was asked for a lunch time). There was an official buddy system so that nurses would work in pairs, but this simply wasn't utilized—the nurses

preferred to have control over who they asked for help, especially as asking for help was both a moral and a political decision.

This culture of workarounds became mutually enforced within the group. One younger nurse talked about how she was made fun of for following protocol, and called “nerdy” when she attempted to recruit another nurse for a two-person check of an insulin dose (as required by the hospital). She pointed out that very few people actually do this, and that they laugh at her when she asks to check.

These examples demonstrate the intrinsically polarizing nature of the workaround. One interpretation might be that the nurses’ actions as defiant violations that threaten patient safety. Workarounds threaten standardized processes in the hospital, and procedures that were decided to be optimal at the organizational level. On the other hand, the workarounds reflect the considerable autonomy exercised by the nurses to make the best choice for their patient. Within the particular context of the unit, several of the workarounds could be argued as safer or more patient-centered than the official policy.

The culture of workarounds also ensured that each new initiative was subjected to a critical nursing gaze. For example, in a new initiative that was widely mocked by the nurses, the unit ran a pilot where each nurse was asked to speak to their patients for two minutes. They were also required to sign on a sheet to indicate that they had spoken with their patient. The nurses found this demeaning, especially as they were speaking with the patients constantly, but also because they didn’t believe that this would have an effect on patient satisfaction. One nurse demanded to see the evidence that speaking for two minutes with a patient would help improve patient satisfaction scores. Hidden behind these conversations was the thought that this was “one more thing” for the nurses to do. However, what’s more

important was the process—the nurses critically considered each new initiative, weighing benefits for the patients against other contextual factors.

Above all, the culture of workarounds reflected and reinforced the distance between the nurses and management, and the tensions between patient-centered care and the work of nursing. An alternative explanation would be one of gross incompetence and a lack of professionalism between nursing and management. While individual personalities were an obvious factor, I do not believe that incompetence or a lack of professionalism was true for either group. By the majority, both those within nurses and managers were incredibly passionate, hard-working individuals who truly cared about their work. Everyone meant well, and the vast majority of the nursing work that I witnessed was professional and highly competent. The distance between the two groups was cultural, a mismatch between perspectives, ideas, and beliefs about the work of nursing and the priorities of patient-centered care.

The First Implementation

The implementation of BMR and the UBC model onto Unit 3A was very well-resourced. The plan largely met the process outlined by Lee and David and utilized on Unit 2B—building rapport from both management and bedside staff, providing intensive initial training, utilizing external coaches, and a dedicated physician partner to assist with the implementation. Galen Memorial Hospital spent over half a million dollars to implement BMR, and the implementation was further supported by Lee and David's team from the main implementation grant. Preparations alone for the intervention took several months.

I did not have access to the initial executive meetings that led to the Unit 3A implementation of BMR, and needed to reconstruct a history based off interviews with key informants. The major driver for the implementation on Unit 3A appeared to be the demonstration of positive clinical outcomes on the BMR demonstration unit, where Lee and David demonstrated a decrease in the average length of stay and mortality, among other improvements. Even minor decreases in lengths of stay can comprise significant cost savings—consequently, Lee and David were able to persuade hospital management to write the UBC model into the Galen strategic plan. Unit 3A chosen as one of the units to implement.

While Unit 3A was large and busy, its problems largely appeared to be precisely the ones that could be solved with the UBC model. Furthermore, the unit had two major advantages. The first advantage was the funding, which allowed for the hire of two mid-level providers to help decrease the patient load for doctors. More importantly, it allowed for the hiring of a highly involved physician partner for Unit 3A. The physician partner was young, charismatic, highly motivated, and organizationally skillful. She also embraced the role entirely and was well-liked by the nurses, attending regular meetings with the nursing unit managers, and involved in addressing issues that traditionally were within the domains of nurses (e.g., reorganizing huddle).

The second major advantage was that the unit had actually attempted to implement BMR previously—this implementation would be the unit's second attempt, as the unit had attempted to implement BMR two years previously.

The first implementation was conducted under a new Galen program where nurses voted for a physician partners to work with nurses to improve care on each unit. The idea was to provide a physician with whom the nurses could voice their concerns, provide

training, and act as a voice for the nurses. Unit 3A nurses voted to elect two doctors, both of which were familiar with BMR from the flagship unit.

Unlike the subsequent implementation on Unit 2B, the first implementation focused on the teaching team. Learning how to work in an interdisciplinary team was highlighted as a major educational goal for the resident physicians. Unit 3A was identified as a “natural fit”, as there were many parallels with Lee and David’s flagship unit. As on the flagship unit, the teaching team included residents who could manage the real-time data entry and the other demands of running the rounds. “Inter-team communication is an important competency for the residents,” one physician involved in the initial roll-out said, “and it’s a skill set that we want our residents to have. Showing competency in BMR in that kind of care role or team model fits nicely.”

In contrast to Lee and David’s implementation model, the Unit 3A implementation was smaller and less intentional, especially as only one physician team was involved. From the nurses perspective, the initial implementation happened very quickly. “It was brought to us like an administration thing from hospital medicine. It felt like pressure to implement soon, quick, fast. ‘Just do it,’” one nurse recalled. The nurses did not visit the flagship unit, and no training classes were offered. Meetings were held to discuss the need for the change among the nursing staff and the physician leaders, but the physicians were not trained.

The implemented rounds lacked several major features advocated by Lee and David. For example, the rounds lacked a formal BMR manager, and either had the nurse shift manager calling nurses, or the physicians called nurses as they went along. The physicians were not trained, and no formal coaching or feedback was provided. Perhaps most importantly, the teaching team continued to see patients on multiple floors, and only around

half of the teaching team had patients on Unit 3A. “We just thought if we heard about the model, saw the script, we could kind of make it happen,” one doctor reflected.

Perhaps unsurprisingly, the rounds lasted less than six months. “There are some things in the world that are ‘just do it,’” one nurse manager recalled, laughing. “I don’t think this was one of them. It just stopped. I think it was more on the physician end that it just couldn’t go forward anymore. We didn’t know how to get forward. And we also found out that there was more to it.”

The perceived value of BMR was heavily undermined from multiple sources. The quality of both doctors’ and nurses’ rounding styles was variable, as no coaching was provided. The nurses often didn’t have time to prepare, as they were not told which patients were BMR patients. Only pharmacists were involved, but no social work or dieticians were present. Mornings are also generally viewed as especially valuable time among physicians, and as the teaching team consisted of students, residents, and physicians, patients would be seen by a member of the physician team multiple times a day. BMR was therefore seen as duplicating work, as it added an additional timepoint where the patients would interact with the team.

At the time, many of the BMR components were considered radical and, in many ways, countercultural. For example, a portion of the attending physicians disliked the emphasis on checklists within BMR. “Some providers felt doing a safety checklist was part of their job,” one of the partnering doctors recalled, “but I also heard some very vocal people talk about how they felt that it was too algorithmic, and it was taking learning opportunities from physicians and the house staff.” Checklists were still a new addition to healthcare, and seen as a threat to physician autonomy. Without formal training or an

opportunity for discussion, the hospitalists lacked consensus on the value of BMR and its components.

The physician leaders ultimately suspended the program, especially after the teaching team began to sporadically cancel BMR. One doctor recalled this as “looking for excuses” to cancel BMR— e.g., “the patient was out of the room, the nurse wasn’t available, we had a new admission, or other work that got in the way.” BMR was placed on hold indefinitely, until a better opportunity came to revisit it.

This opportunity came with the funding opportunity. Armed with significant financial and personnel resources, the hospitalists pushed again for BMR implementation. Although the nurses were again told that this was going to happen, the nurses were equally optimistic. “We were okay,” one of the nurse managers recalled, “because we had already tried BMR before. Hearing that somebody’s going to be an appointed person, and we’re going to get some infrastructure, and we’re going to work it through. All that stuff was okay with us. Again, the concept was great, we had no problem with the concept. It was just a matter of how we’re going to fit it in.” With having previous experience and half a million dollars, figuring out how to fit it in would be very doable. This time, they were going to get it right.

The Second Implementation

The implementation on Unit 2B had extremely high fidelity to Lee and David’s recommendations, following the process highlighted in the previous two chapters. All of the

key features were largely in place— an intensive training course, external coaching, a physician partner, and unit-level data. In addition, the implementation significantly benefitted from substantial funding from multiple sources, the unit’s previous experience with BMR, and significant buy-in from both the unit management to senior hospital executives.

However, the Unit-Based Care model also included that all physicians to be geographically co-located with the nurses, where the doctors only saw patients on one floor. This required a substantial organizational change. “I feel like BMR is not going to be a big deal after this,” the physician partner reflected, “but getting the players and everything where they need to be will be...” Any changes required the coordination of not only the hospitalists, but also hospital bed control— a central office that coordinated patient assignments— as well as individual hospital units. Patients could also be admitted to the unit from the emergency room and the intensive care unit, requiring separate processes for each. There were also technical limitations within the hospital hardware— for example, once a patient was ready for admission, the electronic bed control system could only notify individual units, and not the hospital service. After several months of advocacy, the physician partner successfully negotiated a highly complex workaround.

In addition, the team also sought the support of allied health. A pharmacist signed on early— this pharmacist was not unit-based, but a specialty pharmacist who carried a significant interest in BMR. In a quirk of the hospital hierarchy, pharmacists were capable of entering in orders, and she agreed to assist with realtime order entry. “She is very happy to BMR,” the physician said, “but she is the *only* person in the hospital in her role that she can BMR. They are on multiple floors and need realtime access to approve meds, and are not

available [to step out for an hour]. So I figure we start with her, see how it feels, and maybe this change will drive other changes.”

In addition, two social workers and one dietician attached to the unit agreed to join BMR. Each social worker worked with patients on one half of the unit. While they were not hired by the unit and hired by the social work service, the social workers only saw patients on the unit and were recruited to participate.

Negotiating all of these different services was complex and challenging. Especially as the final vision for the unit included three BMR teams— the two hospitalists and one teaching team— the implementation team needed to prepare for three hours on the unit when BMR would be running. As a consequence, the team decided for a slow implementation. After the physicians became geographic, each one would start BMR in a staggered fashion. The physician partner also manipulated the hospitalist schedule, ensuring that the initial hospitalists assigned to the service were “all stars” who had seen the original model. “They’re stacking the deck!” Lee pointed out, approvingly. The physician partner herself would come on service for the first week.

Finally, the roll-out included a simulated dry-run, where “MR” occurred in the conference room— that is, multidisciplinary rounds without the bedside component. Rounds were conducted by the script, except that there was no patient in the room, similar to the CCDT meetings. The dry run allowed the group to provide feedback to the nurses and doctors outside earshot of the patients, gave an opportunity for the rounds manager to practice coordinating the nursing staff, and ensuring that everyone could make safely experiment in a low pressure environment. Although patients were not present, the group rounded on the real patients, practicing explaining concepts in lay English and minimizing medical jargon.

The nurse managers— or, a visiting anthropologist / medical student— were asked to act as the patient. Pretending to be the patient offered a great insight into the process, and despite having observed the rounds hundreds of times, I was still struck at how powerful the interdisciplinary group could be. As I looked over charts and tried to act how I've seen patients react on BMR rounds, I found myself at the center of attention of the nurse, doctor, social worker, dietician, and the pharmacist. The sense I received from the group was one of warmth and competency. After all, patients rarely see all of their providers in the same room at once.

At this point, the team was successful in energizing the nurses. "I'm pretty excited," one nurse said as she explained that she believed this process would minimize her calling physicians over the day. "Even if my morning is super busy, it might make the rest of the day smooth sailing." Other nurses recalled the previous implementation of BMR, running through the nurses role on BMR with finesse and ease. "I'm a very competent nurse," one said, laughing and winking at me.

When it came time to launch the rounds, the enthusiasm on the unit was palpable. Lee and David sent a group of nurse coaches to observe and provide feedback. In their written report, the nurses write "In summation, Unit 3A is very well prepared and functioning in UBC. The management role is imperative in this process in order to remain on track. The staff members are engaged and eager to learn how to be the best at BMR. Their upper leadership was very comfortable in providing feedback to their staff, and very knowledgeable."

The group was at a high. Months of preparations paid off. The physicians were successfully geographically co-located, rapport was obtained from both the hospital staff and high-level hospital administrators, and intensive training and coaching was actively occurring.

Funding allowed for a midlevel hire, as well as a dedicated charge nurse to run the rounds. The unit was also drawing from a highly motivated and competent team, as well as their own previous experience. How could this implementation possibly fail?

An Autopsy of Failure

An argument had broken out on Unit 3A. An attending physician was refusing to conduct BMR rounds, arguing that she was taking care of over twenty patients and they weren't doing anything differently inside the room than they were outside. Exasperated, the charge nurse called the nursing unit director, who in turn called the managing physician of the hospitalist service. After considerable discussion, BMR for the morning was cancelled. The fact that the cancellation came from doctors was not lost on the nurses. "The doctors can do this," one nurse explained in the break room, "because they can stick their necks out. The nurses are scared to talk, because everybody needs a job."

The following day, the hospitalists received an e-mail from the managing physician of the hospitalist service. The e-mail explained that the daily census was supposed to be 12 - 14 patients per physician, but has instead averaged around 17 and maxed around 21. Most interestingly, the e-mail argued that it was no longer *safe* to conduct BMR rounds, especially as quality metrics had not budged and possibly had gotten worse. BMR was indefinitely suspended the following day, and the geographic physician assignments completely dismantled. The following day, the doctors went back to seeing patients on multiple floors.

How did an intervention designed to increase patient safety ultimately be perceived to have the opposite effect? The story is much more complex than it appears. There was no doubt that a high patient load played a major role. Many hospitalists were unhappy and leaving the service. The hospital opened a new observation unit that was also staffed by the hospitalists, and led the service to be short-staffed. The geographic based system also had unintended side effects— for example, a geographically based doctor who discharges eight patients would receive eight new patients the following day. The hospitalists were consequently disincentivized to discharge, and hospitalists were believed to be holding onto their patients to spread out discharges over the week.

Similarly, the nurses were extremely busy as well. The “hardest floor” actually became more challenging— several nurses had also left the unit (some moved, others less amicably), and the unit ultimately had at least ten vacancies. Galen also changed how the emergency pool of nurses worked, and whereas the unit could previously rely on “floaters” from the emergency pool, there were often problems with the service, and the system often struggled to find replacements for nurses unable to report to work. The patients of that nurse would then have to be assigned to others.

The initial narratives developed by the implementation team centered around staffing. The nurses and doctors were understaffed, and this caused BMR to fail as their energies were elsewhere. This interpretation, however, is perhaps overly simplistic. From the anthropological perspective, the failure of the unit could only be understood through the lens of the *meaning* of the rounds in its cultural context. Rather than disrupting the unit culture, the meaning of the BMR ritual mutated, ultimately recapitulating and reinforcing pre-existing norms.

The Mutated Meaning of Checklists

The nurses and doctors did not initially perceive BMR differently from other sites, or as described more generally in Chapter 3. Doctors and nurses pointed at increases in efficiency, the benefits of being on the same page, and benefits for the patients— as well as how the rounds took up significant time, interrupted workflow, and could be repetitive. There were kudos and complaints commonly reported from participants across all the study sites.

What was unusual, however, was that many of the nurses reported not feeling more empowered by BMR. The BMR ritual was meant to create a privileged space, where nurses could address issues with their doctors more directly. On Unit 3A, however, the ritual failed to create this space. Why would the same ritual, conducted in the same way, create this privileged space in one unit but not another?

One potential explanation was that the nurses already had a strong self-perception of empowerment at baseline. “I don’t feel so much empowered by it,” one nurse said. “I think nurses have always been able to stand up and intervene when they needed to. I don’t think it’s empowered the nurse, like you’ve made her stronger for some reason. She’s always been strong.”

“It’s more for the patients,” another nurse added.

These narratives, however, conflicted with previous complaints about doctors and teamwork. For example, “I feel like I can always talk to the doctor when I want to talk to the doctor,” one nurse said. “I can page them, they call me back. We talk.” Yet, complaints about paging doctors was also one of the most common among nurses, as well as complaints

of the meniality of nursing and a lack of respect from doctors. It seemed highly unlikely that the majority of the nurses were already at a high baseline level of empowerment.

A more likely explanation lies in the mutation of the meaning of BMR into becoming a *task*, as defined previously in this chapter as a job that someone without nursing training could complete. On the BMR round, the role of the nurse requires significant nursing expertise, as nurses must provide a nursing update, and run a quality-safety checklist. Although the nurses were provided with a list of suggested topics, the nursing update requires nursing judgment to identify relevant aspects of care that needs to be addressed by the interdisciplinary team. In contrast, the quality-safety checklist requires the nurse to systematically read through the checklist from top to bottom.

This distinction was made in initial trainings and conversations, but was lost as the model began to spread from nurse-to-nurse. “It’s so simple if you follow the script,” was a frequent saying of the physician partner. “Following the script,” however, mutated to mean the act of reading down the entire sheet, without emphasizing the need for a nurse to also contribute his or her nursing expertise.

This new meaning perpetuated the perception of BMR as a menial task. “My perspective was that I felt like I was sitting there reading a checklist,” one nurse said. “That’s how it was explained to me... They said, ‘Stick to what’s on the list. Make sure you go through it. Maybe it’s just my thing with doctors. You don’t bother doctors. You don’t interrupt them.’”

Another nurse couldn’t understand why they were running the checklist in the first place. Whereas the designers intended the checklist to be a place where collaborative cross-checking occurs— for example, aviation lists require a call and response between two pilots— many nurses did not understand its function as an advocacy point. “You ordered

the foley, you ordered the central line,” one nurse said to an imaginary physician. “Why aren’t you guys running the checklist?”

Finally, the nurses were also tasked with taking notes on the BMR board, a whiteboard mounted in the patient’s room for everyone to see. As soon as the nurse completed providing an update, they would then turn to fill out the whiteboard with the plan for the day. This job literally fit the definition of a nursing *task*, which further shifted the nurses role to a menial scribe. One nurse utilized this role to her advantage, where she prompted the physician for the plan with the pen in her hand, legitimized to confront the physician. This scene was rare.

The nurse with the whiteboard, however, reinforced the gap between the possibilities and the nurses’ behavior. “Really, the power is there. You just need to grab it,” recalled one of the charge nurses. “Do you see BMR as a way of empowering and speaking up for the patient? Or do you just see it as a task? If you just see it as a task, you might not realize that the power’s right there in front of you, and you just need to embrace it.”

The Recapitulation of Hierarchy

The BMR ritual was also intentionally designed to disrupt the existing power structures between the doctor, nurse, and other members of the interdisciplinary team. For example, the rounds are managed by a nurse, while the physician takes the lead inside the patient’s room. Rules are also provided for engagement and communication, and the BMR ritual consequently provides a new negotiated order that supplants older models. On Unit 3A, however, the ritual recapitulated existing hierarchy rather than disrupting it.

The physicians maintained control over the rounds in three ways. First, the physicians facilitated the content of the rounds. The doctor starts and ends the rounds, and can choose to do so even if the other team members are not ready. The physician often leads the way in and out, with the spatial organization of the team around the patient reflective of the traditional hospital hierarchy. The doctors also prompted the other team members, using traditional phrases to indicate when it was someone else's turn to speak.

These transitional phrases further menialized the nursing role. Many doctors on Unit 3A cued that it was the nurses turn to speak with something similar to "...and, now the nurse will run the safety checklist". These phrases reinforced the idea of BMR as a task that did not require nursing expertise— at other sites, the doctors would simply say a variation of "Let's hear from your nurse for the nursing update," or the nurse would simply begin to speak without prompting. These more generic phrases did not imply that the nurses' sole job was to run a checklist.

Second, the doctors also formally controlled the rounds. The physicians chose which patients to BMR, and instructed the charge nurse in the morning which patients would be on the rounds. This formal control undermined the collaborative efforts of BMR, as nurses could not advocate for specific patients that may have benefited from the rounds. Some physicians also resisted the intervention by only rounding on two or three patients, which decreased the value of the rounds for the allied health members.

A power differential also existed between the doctors and nurses on their ability to cancel the rounds. For example, doctors can cancel BMR if they are working on a code. For the nurses, however, they were still asked to report to BMR rounds, even if they were busy taking care of a patient in a code. In one particular instance, the charge nurse ordered the bedside nurse to leave a code for BMR, asking for another bedside nurse to take her place.

The nurses resisted, and instead suggested that someone else present the patient at BMR, and that the bedside nurse should stay with the patient on the code. From the nurses perspective, the bedside nurse knew the coding patient best, and it didn't make sense to prioritize BMR rounds over a dying patient. "This is how we do things here on 3A," said the nurses, laughing in a dark humor.

Third, unlike on Unit 2B, there was a lack of interdisciplinary feedback between the doctors and nurses. Whereas the implementation on Unit 2B normalized doctors giving feedback to nurses and vice versa, the Unit 3A plan intentionally separated the two, citing the difficulty in providing feedback across disciplines, and how some were not always open to receiving feedback. "Instead of it being a collaborative way of talking, discussing, and improving without offense, it became the doctor has to talk to the doctor. The nurse has to talk to the nurse. You're going to continue doing whatever you're doing badly until it's all over. Which doesn't even make sense— why would I wait until you do five things wrong, and then tell you? By then, it's almost a habit!"

These three factors not only maintained a separation of hierarchy between the doctors and nurses, but recapitulated the hierarchy within BMR rounds. On paper, BMR rounds looked very much the same, with the content and structure similar to other hospital units. In practice, however, these subtle differences prevented the BMR ritual from affecting the unit culture. Instead, the localization of the intervention reinforced the pre-existing hierarchy on Unit 3A.

BMR as Dramaturgy

One of the common themes across all sites was participants often described BMR as a performance. “It’s like a performance or a play,” a nurse recalled, “where each person has their part.” Another physician called it, unflatteringly, a “dog and pony show.” The performative aspects of BMR are unsurprising, as participants in the rounds were trained to a semi-structured script, and conducted the rounds for a mixed audience of patients, doctors, nurses, and hospital administration. The novelty of BMR also ensured that there were often visitors who came to the unit, further heightening the aspect of performance, and some of the participants even discussed having stage fright or nervousness in front of the audience.

The performative aspect of BMR had a strong effect on its implementation on Unit 3A. For example, the language of the BMR script conflicted with local conceptions of the nurse-patient relationship. On Unit 3A, the script called for the quality-safety checklist to be conducted in the second person, speaking directly *to* the patient (e.g., “You do not have a catheter for urine” instead of “He has a Foley catheter”). Speaking in the second person was argued to be more inclusive of patients, and would help encourage the patients to participate on the rounds.

The nurses, however, pointed out that this wording subtly places the nurses on the same side as the doctor. “I thought I was a bridge between the doctor and the patient,” one nurse said at a unit meeting. “Now, I say ‘you’ [the patient] said this, ‘you’ did this.” Within the context of Unit 3A, where considerable social distance existed between doctors and nurses at baseline, speaking in the second person alienated the nurses from the patient towards the doctors. In contrast, the nurses believed that they should be on the patient’s side.

Shifting the nurse identity to be closer to physicians also undermined their ability to speak up on the rounds. “If there’s an issue,” one nurse recalled, “I wouldn’t want to bring it up on BMR without talking to the doctor first. I don’t want the doctor to be like, ‘Oh, I didn’t know that!’ I don’t want it to look like we are not on the same page.” From this perspective, BMR became performative for the patients, and the nurses wanted to ensure that the patient’s impression of the team was positive.

Erving Goffman (1959) expanded on the idea that understanding our social interactions as theater can offer insights to observed behaviors. Like actors in a theater, we are motivated to act in certain ways to manage our impressions of one another, and our identities are reflected in our performances. Different stages also require different performances to manage impressions— for example, waiters act differently in the “front stage” of the dining room, as opposed to the “back stage” of the kitchen.

Within BMR, the nurses BMR script cast them in a role closer to the doctors. This design was intentional, as the original hope was that doctors and nurses would collaborate more closely if they worked more closely together. On Unit 3A, however, by casting the nursing identity closer to the physicians, the nurse became *less* likely to speak up. Instead, the nurses worked to ensure that the “front stage” presented to the patient was orderly and clean, and some even preferring to speak to the doctors before rounds.

This behavior was exasperating to the doctors. “Some nurses are grabbing me before BMR to give me pre-BMR information,” one doctor said. “On one hand, that means everyone is more comfortable talking to each other, but it’s duplicating BMR and slowing me down in the morning.”

The performative aspect also affected the rounds in other ways. A nurse recounted how a patient told the team that he hadn’t had his medications yet, and the nurse felt

ashamed in front of the group. Another nurse apologized profusely to a doctor that she didn't know the patient yet, as the patient had just arrived on the unit. "That's the point of BMR," the doctor said, "so I can update you. "

BMR was meant to be performative by design. On other units, BMR shifts what was normally "back stage" conversations to the "front stage" at the bedside— this shift ensured that nurses could advocate on behalf of their patients, an empowerment that was leveraged by the performance within the rounds. On Unit 3A, however, these performative aspects of BMR interacted negatively with the local cultural context, and undermined the ability of the ritual to disrupt the existing hierarchy.

Conclusions

There were many other factors that also influenced the failure of BMR to change local culture on Unit 3A. The real-time order entry was completed by the sole pharmacist, for example, but this ability was lost if the pharmacist wasn't present. Inconsistent rounding by the physicians decreased the value for the social worker, pharmacist, and dietician— who, in turn, started to skip the rounds. The social workers also had meetings within the social work service that conflicted with the rounds. While Lee and David argued that BMR was worthwhile even if only the doctor and nurse was present, the majority of the doctors disagreed, and disliked rounding if the social worker wasn't present. This further degraded the value of the rounds.

Racial, socioeconomic, and gender differences also likely increased the social distance between groups on the unit. The nurses were primarily black— including African American and immigrants from Africa and the Caribbean. In contrast, black doctors were in the minority. Physician salaries are considerably higher than those of nurses, and many of the patients were homeless or uninsured. The nurses were almost all female, while the doctors were primarily male.

I never witnessed any overt racism on the unit between the healthcare professions. However, nurses occasionally felt threatened by their patients, and reported racial abuse from both white and black patients. Subtle tensions also existed between the African American and immigrant communities. The history of the hospital is also impossible to ignore, as the hospital existed prior to desegregation in the American South. Some of the older nurses would even tell stories of nursing during that time. Others would recount how even some older black patients would request a white doctor or a white nurse, as black healthcare professionals were seen as less competent prior to desegregation. Race was discussed among the nurses in the breakroom, as a palpable part of day-to-day life.

The effects of race, socioeconomic, and gender on the BMR failure on Unit 3A were near-impossible to study systematically, but also impossible to ignore. Other research has demonstrated that the effects of diversity on teamwork can be highly inconsistent, with researchers finding both positive and negative effects of team heterogeneity (Chatman and Flynn 2001; S. K. Horwitz and Horwitz 2007). Within the BMR context, however, the racial and ethnic dynamics on Unit 3A decreased the social integration between the professions, and likely formed a subtle but present barrier to its success. I do not claim that these demographic differences drove failure— the success on Unit 2B, where similar demographic

differences apply, suggests that demographic differences between staff could potentially be overcome.

How do we interpret these additional factors in the failure of Unit 3A? One interpretation was that the failure wasn't driven by any of these factors at all, and instead should be considered one of process. "It was really a failure of leadership to respond to a changing situation," the physician partner recounted. "They had designed the system to work for a certain point in time—the situation had changed, and they didn't respond."

While clearly true, this interpretation also doesn't tell the whole story. Resistance to BMR began well before changes in physician censuses occurred, and the challenges within the nursing staff began even before its implementation. Simultaneously, the hospital leadership *did* fail to adjust to changing conditions, even after they became conscious of new challenges.

The leadership might also be blamed for choosing to implement at all. Other than arrogance and short-sightedness, why else would the leadership attempt to implement an intervention where it had ostensibly failed once before? While true with the benefit of hindsight, this criticism is largely unfair. The first implementation was understood as a failure due to insufficient training, as well as a lack of implementation fidelity to other components of the UBCM care model (e.g., geographic co-location of the doctors). These were explicitly addressed with the second implementation plan, which largely followed Lee and David's implementation package. Second, the problems on the unit were precisely those to be addressed by the BMR rounds, and the rounds were sold to the leadership as a way of increasing efficiency for both the doctors and the nurses. However, there is no doubt that the leadership failed to understand the context of the unit, and I imagine that if asked prior

to the implementation, the bedside nurses would have recommended other priorities to focus on rather than implementing new rounds.

When I presented initial findings from this unit at conferences or in seminars, I found that audience members provided their own interpretations after I finished. One physician claimed that the failure was all about staff engagement. A hospital administrator pointed out that it was primarily about leadership. Those involved pointed out the high patient load, and the need to take care of the staff. Others point towards the importance of culture, or structure, or communication.

The human tendency is to seek for one theory that explains all, a clean lens that sorts the dynamics of the unit into neat categories. The story of Unit 3A defies such simple categorization. This hospital unit must be understood as a complex web of all of these factors, and as this chapter demonstrates, these interactions were far from simple. The intervention existed at a complex intersection between the culture of the staff, the structure of the unit, and the psychology of individual personalities. The BMR intervention on Unit 3A was well intended, and very, very expensive. However, these efforts were not sufficient to overcome the complex web of influences that ultimately caused its failure.

- CH 6 -

THE CHANGEMAKERS

Down Under

On the surface, the hospital unit looked exactly the same. Doctors and nurses typed furiously on the computers by the nurses' station, and intravenous drip machines created a familiar, quiet whirr from the patients' rooms. A bed alarm went off in the background, and a page overhead for a doctor. Two nurses were preparing medications at a cart, and smiled at a patient being wheeled off the unit.

Despite the familiar scene, I had no idea what was going on. This confusion was partly because everyone was speaking in Australian accents ("G'day, how are you going?"), but also because the medical terminology was surprisingly foreign. For example, "attendings" were called "consultants." "Doctors" and "physicians" were not interchangeable in Australian English, as only specialists could be called "physicians." Advanced trainees in the US were called "fellows"— while in Australia, they were called "registrars", and confusingly only became "fellows" after completing training and became physicians.

As an anthropologist, I was especially thrilled to learn that medical slang was very different at my field sites in Australia. "Her bowels have been opened," an Aussie doctor might say about a patient. "She's got an IV bung in for fluids. Her bloods look fine. Obs stable. She's on frizzy and not much else. She can go home pretty soon, query CT brain."

In other words, this patient has had a bowel movement. She has an IV cannula on her left, and her blood tests were normal. Her vital signs were stable. The patient was taking furosemide (“frusemide”). She can go home pretty soon, depending on the results of a CT scan of her brain. “Query” seemed to be specific to the medical setting, and indicated a tentative conditionality of one action to another— akin to “maybe” or “possibly.” The doctors struggled to explain its meaning. “It means we hope,” one physician hesitantly offered, “but we’re not entirely sure.”

I was also surprised to learn that Australian doctors tended to avoid white coats. “If we see someone wearing a white coat,” one of the younger consultants laughed, “we will literally call them a wanker.” He recounted a story where he admonished one of his colleagues for wearing a white coat to work, proudly claiming the resistance against white coats as part of the egalitarian culture of Australia. Unlike the UK, where white coats were nationally banned in an effort to decrease hospital-acquired infections in 2007, Australia never had an official ban against white coats (Fraser 2012). In a national study of Australian junior doctors, white coats were confirmed to be rare and the majority averse to wearing them (Watson 2002).

In contrast, the white coat has *increased* in popularity in the US. Most striking has been the rapid spread of the white coat ceremony, an initiation ritual now practiced at 97% of medical schools in the US and Canada (The Arnold P. Gold Foundation 2013). During the ritual, students are formally robed in white coats and recite the Hippocratic Oath, symbolizing the induction of the student the professional medical community. Like many other human rituals, they are perceived as part of a long-standing tradition, yet the ceremony was invented only in 1989 at the University of Chicago, and intentionally disseminated with grant support from the Arthur P. Gold Foundation (Warren 1999). The ceremony has since

spread to other nations and other medical professions—including a pilot program to bring the ceremony to a hundred US nursing schools in 2014 (American Association of Colleges of Nursing 2014).

In two countries with similar levels of biomedical technology, why would attitudes towards white coats be so different? These are true, population-level trends between the two countries. Perhaps, as both the young consultant and many anthropologists have argued and counter-argued, this reflects a difference in the egalitarian values of both societies, translated and reflected within the hospital hierarchy. Perhaps this was simply a consequence of history and funding. Answering this question would require more research, but it demonstrates how studying the same biomedical artifact (the doctors' uniform) tells us something about differences in underlying values between both contexts.

And, most intriguingly, BMR was about to be implemented on over 70 hospitals in Australia.

The Healthcare Improvement Coalition

Unit 2B and Unit 3A were structurally similar places with different cultures, and even more different outcomes. Both the process of implementation and local culture drove the differences in how both groups responded to BMR. More importantly, the close study of

both units has demonstrated webs of complexity in the interactions between the hospital structure, unit culture, and the implementation process.

In order to better understand these interactions, a broader view at many different implementations would allow for the broader identification of different factors that drive implementation success. I found an ideal experiment in Australia, where BMR was being widely implemented. This wasn't a coincidence— at the time, Lee and David were reporting positive outcomes and cost savings from the Galen flagship unit. This caught the attention of the Healthcare Improvement Coalition (HIC), a government agency responsible for quality and safety across one of the six states in Australia.

The HIC was designing a new program that would target a list of key root causes of failures within the healthcare system, and specifically changes to healthcare structures and processes to improve teamwork work-cultures. The challenge for the group, however, was how to translate the list of concepts into practice. “Everyone was going, ‘I understand the concept, but what do I do now? How do I implement this thing?’” one government administrator recalled. “We were wracking our brains, and then BMR came along. BMR met the majority of these functions— not just fulfilling them, but actually plugging into those functions. I saw in BMR a way of starting to operationalize and roll out the program, instead of just this airy-fairy theoretical idea. People on the ground were saying, ‘What do I do to implement? I need something that I can hold onto and is tangible.’ BMR allowed that to happen.”

After Lee and David advised the implementation of BMR onto two trial units, the HIC decided to adopt the model, and developed a strategy to popularize it statewide. Lee and David were brought on again as consultants, developing a more formal implementation

manual. They were flown to Australia to help conduct a large training, much as described in Chapter 4, which invited practitioners representing fifteen hospitals across the state.

Despite Lee and David's involvement, the major HIC implementation took on a different strategy. "As soon as I saw what Lee and David had done at Galen, I knew we couldn't do what they did," said an HIC executive. "It would be very difficult and almost impossible on a large scale. My view always has been was to take a more flexible view in trying to do it." At a health system level, there were simply too many variables to standardize, as hospitals were organized very differently with different limitations. These were the same reasons that prevented the HIC from mandating implementation, which was discussed as a possibility, but it was decided that a mandate was both impossible and politically dangerous to impose widespread limits on physicians autonomy towards a whole new way of working.

This flexible implementation strategy would be key to the adoption of BMR across the state. "If you actually look at Lee & David's way, they say, 'I have a product. That's the way it is. Do it that way.'—irrespective of whether the product involves you trying to put a square peg in a round hole. The advantage of our strategy is that we can adapt to a square or a round hole. The disadvantage is that the results will not be exactly the same or perfect, and you're going to lose things around the edges. And, if you don't maintain some purity of idea around key things, that's when you will get into trouble."

The HIC strategy was to communicate these key concepts around BMR, but then allow each individual unit to develop their own implementation. Interested hospital units could volunteer to be involved, and ask for HIC support in terms of materials, training, or communication with hospital executives. The speed of uptake with this strategy was astonishing—some units launched BMR within two weeks of the initial training. Within two

years, between 70 and 80 hospitals had implemented BMR. And, even more surprisingly, there were only six failures.

I wanted to have a better sense of this ongoing natural experiment, and, more importantly, how those involved in the implementation understood their strategies and its effects. Examining all 70 sites in detail was not feasible. Instead, I focused the Australian portion of this research on the HIC itself, and, as a very loose control, another general medicine unit in another state. With the HIC, I spent three weeks scattered over two years, traveling with Lee and David during the initial trainings, as well as a follow-up conference and several conference calls.

In addition, I conducted site visits with the HIC program staff to six different hospitals where we observed BMR, usually at the expense of the HIC. I conducted unstructured interviews with both HIC staff, as well as opportunistically and informally during the site visits. My positioning for access to these groups was unique— my status with the HIC was primarily that of a student researcher, but I was also asked for my expertise and, on occasion, generated de-identified oral and written feedback for their staff. During site visits, I emphasized my status as an outsider as much as I could, but the reality was that my perception as an international visitor to the HIC was unshakeable. However, my status as a medical student lent itself to many frank and often critical conversations about the BMR intervention. These conversations I protected as I would informants in the main study, and careful to de-identify contents before sharing with the HIC. The relationship with the HIC was very collegial and academic, and I always felt comfortable airing any criticisms or speaking frankly about the project.

Similar Technology, Different Culture, Same Problems

Australia and the United States have dramatically different health systems. The US remains one of the few developed nations without publicly funded universal healthcare, while Australia relies on a public health system that exists alongside a robust private sector (Armstrong et al. 2007). The US also remains an outlier for healthcare spending, vastly outspending other nations based on both per capita healthcare costs and by percentage of GDP (OECD 2015). In contrast, Australian healthcare expenditures are closer to OECD averages (OECD 2015), and, like many other countries with public healthcare systems, also outperforms the United States considerably on many health outcomes (Schoen 2014).

For the purposes of comparing individual hospital units, however, the two countries have much in common. Both are roughly matched for markers of medical technology, number of hospital beds per capita, and average length of stay (OECD 2013). Rates of medical error are also comparable between Australia and the US (Wilson et al. 1995). Both countries also have very active quality improvement initiatives, as well as considerable calls for increased interprofessional teamwork (Brownie et al. 2014). Satisfaction of the system among sicker adults is also surprisingly similar, with the exception of complaints about costs and waiting times that are more common in Australia (Blendon et al. 2003). Historically, doctors and nurses derived from similar traditions in both countries, with Nightingale models of nursing and the Flexner report having considerable influence on the development of nursing and doctoring (Geffen 2014; Stein-Parbury 2000).

As a consequence, a hospital in Australia looks very similar to a hospital in the United States, despite national differences in the structure of healthcare delivery. The

similarities in healthcare technology, however, mask what are likely variations in the culture of medicine. While the literature frequently presents medicine as universally practiced around the globe, anthropologists studying medicine long have argued that substantial heterogeneity exists. Hospitals are not simply places where “established universal principles of biomedicine are practiced uniformly across cultures” (van der Geest and Finkler 2004), but are rather places where medical practices are simultaneously localized as they are globalized. Despite an international biomedical literature, local context and culture strongly modulate medical practices—low blood pressure may be considered a disease in Germany but not the United Kingdom, the same patient may be diagnosed with spasmophilia in France but chronic fatigue syndrome in the US, and choice of pharmaceutical treatments and aggressiveness of dosing vary widely around the world (Payer 1996; Finkler 2004; Degeling et al. 2000).

It's perhaps then unsurprising that although care delivery may be organized similarly in both the US and Australia, local culture and context modulate the social and cultural life of its employees. Little has been published comparing cultures of Australian and American hospitals, but the two do have distinct social histories. The Australian system developed amid a greater degree of medical pluralism, competing against osteopathy, homeopathy, and other medical systems (Baer 2008). Although Australian doctors have maintained their dominance over nurses and other allied health practitioners as doctors have elsewhere, Australian nurses have traditionally played a greater historical role in management of the healthcare industry (Degeling et al. 2000). Also, while the United States transferred control of nursing programs away from the healthcare sector to higher education in 1964, Australia maintained apprenticeship models until the late 1970s through to the 1990s (Stein-Parbury 2000). Doctors and nurses are also much more protected than their American counterparts.

Strong nursing unions have fixed the nurse-patient ratio to 1:4, and national guidelines existed to limit working hours of all doctors.

These differences were highlighted almost immediately in the superficial peculiarities of Australian hospitals— the lack of white coats, the tea rooms for the hospital staff and tea carts for the patients, and a strange sense of formality among the staff. I was warned that the hospital hierarchies were historically steeper in Australia— “the consultant was God,” one nurse described of traditional healthcare practice.

Understanding Australia as similar-yet-different made it an ideal site for a comparative case study, and these similarities were how I found myself attending the initial training session hosted by the HIC in the Australian countryside. Outside the conference hall, colorful lorakeets and cockatoos flew from tree to tree, and kangaroos bounded in the distance. Inside, Australian nurses and doctors were laughing at the same jokes that Lee and David used to engage American audiences. “Anyone know a doctor who comes to work and sees patients on multiple units?” Lee asked the group. This was met with laughter.

David asked, “How do we create a safer unit?”

“Stay at home!” a participant yelled. The crowd roared, and Lee and David began their pitch.

A Surprising Heterogeneity

The implementation strategy at both Galen units was one of high fidelity to the standardized implementation strategy, as discussed in Chapter 3. Lee and David advocated for not only the BMR intervention and the UBC model, but for a particular implementation package—the training courses, the letter writing, the relationship covenant, signed leadership messages, and the process highlighted on Units 2B and 3A. In contrast, the HIC strategy was very much the opposite, emphasizing the need to translate the key principles to local context as aggressively as possible. Both the HIC and the Galen models emphasized localization, but the primary difference was one of degree, and the HIC strategy was much more extreme.

“You really have to individualize it to how your unit works,” said one doctor at the HIC training. Many of the implementing wards were dramatically different in types, ranging from surgical to acute assessment units to general medicine, and from the urban to the rural. Yet, on the surface, many of the BMR rounds on the Australian units looked largely the same. There were small differences—who was present on the rounds, how often the rounds occurred, whether or not there was a formal training process, and whether or not the rounds were documented on a whiteboard or in the medical record—but the overall rounds appeared to be similar. Close observation, however, demonstrated dramatic differences.

Royal Bourke Hospital

“This is our big ward round,” one of the interns said to the patient, “we’ll just talk about you a bit as if you’re not here.” The intern then turned to the rest of the group. Here,

these rounds were conducted without consultants, and only with the junior doctors, bedside nurse, nurse unit manager, a pharmacist, and a physiotherapist. The structure of the rounds primarily involved the participants reporting to the nurse unit manager, who would interrupt the doctors to ask follow-up questions. The rounds didn't end with a plan for the day, and lacked a checklist. "We didn't feel a need to include it," a nurse would explain later, "because it would just be a duplication of the checklist that's already in the chart."

Most strikingly, the nurse unit manager (NUM) led and moderated the rounds. This strategy allowed the NUM to implement BMR quickly, as the ward was able to sidestep the physician hierarchy completely, as only the junior doctors were involved. "You need to have someone to drive it," the unit manager explained, "because the doctors talk longer than they should, and you need to have someone to fish the questions. You couldn't have a younger nurse facilitate, as they wouldn't feel comfortable talking up the hierarchy." In contrast to the Galen implementations, where flattening the hierarchy was a primary goal, the local model implemented BMR without fundamentally changing existing hierarchies. As a consequence, the primary function of BMR appeared to be for the care team to report to the nurses and to the NUM.

Opalfields Health Campus

The BMR rounds being conducted in front of me was a mirrored-model of Lee and David's intended rounds. If they were here, I thought, they would have been proud. The rounds looked almost identical to those on Units 2B and 3A. The rounds included a consultant, an intern, the bedside nurse, and allied health. A charge nurse acted as a rounds manager. The structure of the rounds was much the same as previously described in this

manuscript, warm and friendly, and largely avoiding medical jargon. Uniquely, the quality-safety checklist was performed in the call-and-response fashion that is mandated among pilots—the nurses report the checklist, and then the doctor physically checks off items on a paper checklist in front of them.

Yet, what was most unusual was that the medical team conducting the rounds was *not* the primary team taking care of the patient. “We’re not primary,” the doctors repeated several times in response to the patients’ questions. “The primary team will have to make the final decision.” They answered patients’ questions to the best of their abilities, but then devoted their attention to a review of the plans. Did a patient *really* need that IV? Could a patient’s diuretic be decreased if the patient was already dehydrated? The team would then write orders to change the plan as needed.

“My main job,” the consultant explained to me afterwards, “is to ensure quality and safety.” During this particular implementation, the main purpose of BMR was to permit an external review of the current plan within the unit. Although the medical team was not primary, they remained involved in the care of patients that they helped admit. In many ways, the team functioned as an external review to ensure that best practices were being followed. I couldn’t help but wonder, however, whether or not this risked further fragmenting care.

Ngaanyatjarraku Base Hospital

The style of the rounds here was distinctive. “We’re here to tell you how you are going,” the doctor said, before introducing the team. Then, members of the team took turns being at the patient’s side, slotting in and out to speak directly to the patient. The staff spoke

only minimally to one another, instead offering updates and reports to the patient directly, and usually words of encouragement and support. The nurses primarily offered a truncated handover— “You need two to assist, you didn’t want to shower this morning, and your obs have been stable,” one nurse said. The nurses didn’t use any kind of rounding sheets either, as there was no quality-safety checklist.

“You’re doing quite well in physical therapy,” one of the social workers said to an elderly female patient. She broke out into a large smile.

“I’m glad to know that they think I’m trying!”

The resultant function of these rounds was to inform the patients of their own status, and the rounds were consequently only conducted twice a week. The NUM explained to me that while BMR was useful for nurses to help gain a complete picture of the patient, she also emphasized that it was primarily for the patients. “BMR is to let the patients know that they’re in safe hands,” she said. The group conducted other interdisciplinary events on the ward, and BMR was just a component primarily driven at improving patient satisfaction scores and giving patients a better idea of their care.

Intriguingly, this implementation was a top-down decision, and hospital executives ordered the NUM to implement BMR. “Anything new there’s always going to be resistance, but you have to sell the good part,” the nurse unit manager recalled. “Sometimes, as a leader and I hate to use the word— but with leadership you can’t always be democratic. But sometimes you have to be a little bit of a dictatorship.”

Pacifica Hospital

On paper, Pacifica Hospital seemed the least likely to be able to successfully implement BMR. “We heard from Lee and David,” the lead doctor recalled, “that what works best for success is dedicated staffing and a dedicated ward. The challenge for most of us is we don’t work in that environment. We don’t work in wards with a dedicated medical environment. The nurses are constant, but the medical teams would work on many different units.” On this particular ward, achieving the geographic isolation that was accomplished in Galen and advocated for by Lee and David was near impossible— the ward was staffed by not only multiple in-house physician teams, but also private doctors from outside.

The solution was a ward round structure that the doctor called an “asynchronous synchrony.” The implementation was unique, as rather than setting a common time for all of the team members to come together, the nurses were instructed to simply grab the doctor as soon as they walked onto the unit. The nurse then performs a “mini-BMR” for their patients with this particular doctor, alongside the patient. “I think the essence is that at a moment in time, you stop the clock and give people the courtesy to listen to their opinions. We should be in there together. That’s the essence of BMR, isn’t it? Medicine and nursing working with allied health to *care*.”

The implementing team reported that it had become standard practice and a daily occurrence on the unit. As a brief visitor, it was difficult to thoroughly evaluate the implementation, especially as the particular challenge of the unit was that it was difficult to predict rounding times with multiple doctors. Instead, the round I observed involved the lead doctor who helped with the implementation, and who walked alongside different nurses until all of his patients were covered. The nurses and doctors reviewed their issues with one

another collegially, and the doctor ran the checklist with the nurse at his side, the nurses nodding after each item.

The fact remained, however, that this particular unit instituted a unique form of the ritual that avoided several of the common problems in implementation. The ritual itself was fairly unstructured—the primary ingredient was that the nurses were simply empowered to break previously established cultural norms. While nurses were traditionally told to keep out of physicians' way during rounds, here the nurses were told to actively intervene.

Purple Mountains Medical Centre

I had the opportunity to study one of the implementations in greater detail at Purple Mountains Medical Centre. The hospital unit was a general medicine unit, similar to Units 2B and 3A, and the implementation actually preceded the HIC initiative. In contrast to many of the other hospitals in Australia, this particular implementation was strongly supported by Lee and David—hospital leaders traveled to Galen to observe the flagship unit, and Lee traveled to Australia to assist. As a consequence, the implementation was much more formal than many of the other HIC sites, but still more informal than at Galen. The strategy centered on in-services and casual classes on the unit, including practice scenarios with the nurses, and primarily focused on the time before launch. Once BMR was started, there were no formal coaching or feedback mechanisms afterwards. This was typically the case on most HIC implementations.

Although the initial training of the rounds was nearly identical to the BMR model, I found significant variation in how BMR was conducted depending on the consultant in charge. The rounds style and format was ultimately dictated by the consultant on duty. “Some consultants kind of take over and do the whole thing,” one of the nurses described. “Others will just listen, and then make suggestions... And then, others, don’t put in much input at all, and just stand there to listen.”

Similarly, considerable variation also developed in nursing practices. Some nurses didn’t prepare at all, while others took significant time to prepare a BMR sheet. Some used their own checklist, others from memory, and almost no one used the official checklist. “There were some nurses who just had no idea what the checklist was,” recalled one junior doctor. “We don’t always ask for it, because sometimes there’s just too much other stuff going on and the round presses on. It’s also not really our duty. It’s the nurses’ checklist.”

Perhaps as a consequence, I found substantial disagreement among the allied health members, doctors, and nurses on the purpose of the rounds. “When it first started, BMR was supposed to be for the nurse and family,” one nurse described. “Now, I don’t know who BMR is for. Sometimes, I’m not even sure what the doctors got out of it.” This confusion reflected the multiple interpretations of the target audience for BMR. First, the majority of the nurses understood BMR as an advocacy point where they can intervene on behalf of their patients. Second, the doctors understood the rounds as a highly efficient ward round— “It’s like a normal ward round, but with other people on it” was how one registrar described the process. Some clinicians would also use take the time to examine the patient, which would exasperate the nurses and allied health members of the team, as this slowed down the rounds considerably at no benefit to themselves. Finally, allied health members

understood the rounds as primarily a short communication tool between the different members of the care team.

Part of this conclusion may arise because the value of BMR was not intuitive to team members. One surprising consequence of conducting these interviews was that informants *would often change their mind about BMR at the conclusion of the interview*. “My initial thought was, oh my god, no I would never recommend BMR,” one nurse said, “but once you think about it, it’s nice having your whole team there.” Without continued conversation or other supportive rituals to encourage reflection on the practice, the meaning of BMR rounds was degraded, easily forgotten, or otherwise not transmitted between staff members. This loss of meaning is understandable, as team members do not spend much time shadowing one another, and often have trouble seeing across roles. “At the start, I didn't really understand the benefit of really talking to the other team members,” one allied health member admitted, “just because I kind of wanted to do my own thing and just get it done.” It took time and reflection for him to understand BMR and its purpose. Busy hospital workers may not always have a good understanding of what the others do.

While BMR rounds continued at Purple Mountains for over two years, the rounds remained contested, and fought over between different departments. Many nurses also found the rounds to be less empowering than they had hoped, and found that the rounds also reiterated the existing hospital hierarchy with the consultant at top. A parallel mutation also occurred with having the nurses introduce the team, which ended up becoming a menial task. “I understood the principle of introducing them because I’m a bedside nurse, and it’s like I own this room and you’re entering my room, so it’s my responsibility to introduce visitors,” one nurse recalled. “But, you’re already there in front of the patient, and you’re also part of the team and you are managing the patient as well, so why can’t you introduce

yourself? Why do we have to introduce the rest of the team? I feel so small by just doing that.” These findings strongly echoed the experience on Unit 3A.

“I think they did that to give us power,” another nurse reflected, “but it had the opposite effect.”

A Global View

Despite anthropological arguments that medicine is not universal, close study of these variations in the implementation BMR review substantial commonalities between contexts. The structure and format of BMR look different between sites, and BMR is ostensibly solving different problems at different sites. Yet, the challenges and conflicts encountered in the *process* of implementation are surprisingly similar, even when compared to the challenges experienced by hospital units in the United States.

A major theme was the tension between patient-centeredness and prioritizing the needs of the staff. “This was nerve-wracking for us,” a nurse recalled. “If you’ve met some of our patients’ families, it’s nerve wracking to think that they’re going to be there at the start of the day.” There was considerable variation in how much to include patients, including some sites that excluded patients entirely in the rounds as at Royal Bourke, or where the rounds existed primarily to report to the patient at Ngaanyatjarraku. Hospital units also developed code words for sensitive topics that needed to be discussed between healthcare professionals, but risked alarming the patient or families. “Green forms” or “red forms” were used to refer to do-not-resuscitate orders. At another hospital, “special doctors”

became a euphemism for the psychiatric team. Although not typically presented in opposition, the reality was that moving work from the “back stage” of the hospital to the front stage before the patient was challenging across almost all the units.

Another common challenge encountered by the implementing units was how to navigate the hospital hierarchy, and specifically how to engage with doctors. This theme emerged even at the initial HIC training, where many of the participant teams from hospitals lacked a doctor representative. “This BMR rounding is great,” one nurse whispered to me, “but I have no idea how we’ll bring the doctors on board.” This particular nurse would later talk through the formulation of a political strategy to gather support, which was important as even “the head physician thinks that this is a load of kumbaya.” Some sites successfully convinced doctors to participate, others recruited hospital executives to exert power over the doctors, and yet others devised ingenious ways around the hierarchy by using junior doctors who had less power (as was the case at Royal Bourke Hospital), or through the asynchronous synchrony rounding at Pacifica Hospital.

These frank discussions were a stark reminder of how dramatic of a culture change BMR represented. In both countries, doctors exercised considerable professional autonomy. Conceptualized by social scientists as “biomedical dominance,” doctors historically had unequalled authority both within and outside hospitals, gaining the ability to regulate themselves and exercise control over nursing and other allied health. Only recently have doctors been asked to embrace new models of care that required them to relinquish their status at the top of the hierarchy, in what has been called a “proletarianization” or the new professionalism towards an egalitarian multidisciplinary within hospitals.

The conflicts around BMR were a perfect example. “This is something completely foreign to medicine—” one doctor pointed out. “A senior doctor controlling another group

of senior doctors, and having them stick to a process. That's an enigma to medical professionals who think they can do what they like when they like... You need strong leadership that says, 'This is how we do business here, and if you want to join our ward you will play by our rules.' That's challenging for our senior medical practitioners. It's a new concept and never taught in their training."

Another HIC executive pointed out that the system also didn't support doctors or nurses down the line. "If we only had time to actually take a breath and sit and think," the doctor lamented. "I'm sure they'd adopt this because it is so obvious. Why won't they? Because they are drowning. We're not taking care of people. We're not."

"Because what it takes to care of people, in the end, is more money. If we could take care of our people better by investing in them more, so that they were well treated in their workplace and didn't feel like it was an increasing burden just to do their job, then of course they'd be more receptive and open. Health is all about change."

Hearing this doctor speak frankly about this was striking, perhaps because the Australian health system was much more humane than the American one. Strong nursing unions limited patient-nurse ratios to 4:1 on medical-surgical units in two Australian states (Australian Nursing and Midwifery Federation (SA Branch) 2012). The junior doctors were also paid an hourly rate, like the nurses. "Everyone is paid by the hour," one of the junior doctors explained, "so we are quite protected." Hospitals are expected to pay their residents overtime, she explained, and the hospitals have considerable financial incentive to ensure that residents were efficient. In Australia, Junior Medical Officers (JMOs) work on average between 40 - 50 hours per week (Australian Medical Association 2012; Glasgow, Bonning, and Mitchell 2014)— in contrast, residents in the US work an average at least 80 hours a week, and the true average may be more (Blum et al. 2010). Many of the Australian JMOs

were surprised to learn that as a medical student, I often worked close to 80 hours in the hospital to help deliver care.

Regardless, in a workplace culture where time and autonomy were extremely valuable, BMR was often the target of political fights between the different groups. BMR was both politically valuable, held as evidence of progressive, forward-thinking quality care, as well as a simultaneous threat to professional autonomy. At some implementations, consultants exercised their power by calling JMOs away from the rounds, threatening its value to the others. In one particularly stunning de-implementation, a physician medical director supposedly waited until the nurse unit manager went on vacation to cancel BMR—however, this case was far from typical and impossible to verify, but also not unrealistic.

The dominant story told throughout all phases of implementation was that the doctors were both necessary allies and a major barrier to implementation. This narrative was present prior to implementation during the initial trainings, nurses expressed frustrations after it was implemented, and the HIC reported that doctors were largely responsible for all of the 8 failures out of the 70 hospitals implementing within the HIC system. “I don’t think they’re actively sabotaging it,” one HIC administrator reflected on the unit where the consultants ordered the junior doctors away from the BMR rounds. “But, the consultants think, ‘My time is precious, and when I’m on the ward, you come with me. I don’t care about this other stuff. You come with me.’” The dominant system of values among consultants does not prioritize interdisciplinarity, and the doctors had little incentive to do so.

Epistemological Differences in the Nature of Success

The HIC adopted a very different implementation strategy from Galen Memorial Hospital. Within Galen, standardization was thought to be key— the units were meant to follow the model of Lee and David’s flagship unit, focusing on not only the final structure of the ritual of the rounds, but a similar process of implementation. In contrast, the HIC strategy was to encourage substantial diversity, highlighting only fundamental concepts, and allowing for extreme localizations of the ritual to occur.

These differences mirror a fundamental, epistemological tension that is currently occurring within healthcare quality improvement. Medicine has sought to portray itself a science, borrowing established principles from the biological laboratory sciences. The evidence-based medicine movement relies on carefully controlled experimentation, a model of understanding that holds randomized control trials as the gold standard for the development of knowledge. Several leaders in the quality improvement field advocate that improving healthcare should follow a similar rigor (Shojania et al. 2002; Auerbach, Landefeld, and Shojania 2007; Leape, Berwick, and Bates 2002). Interventions that have successfully performed well in clinical trials— such as the surgical safety checklist (Haynes et al. 2009) and the Michigan-Keystone initiative (Pronovost et al. 2006) to decrease central venous catheter-blood stream infections— have been more widely disseminated and hailed as examples of a scientifically rigorous evidence-based quality improvement.

The Galen implementation of BMR allows for this kind of evaluation to occur, and the Galen evaluation team focused on the fact that the same package was deployed onto different units, allowing for the detection in measurements of clinical outcomes between units. “The HIC model has spread like wildfire,” David once said, “but they have no idea

what they've done." However, what this dissertation has demonstrated was that even the "same" intervention can look dramatically different between Galen sites— it would be foolish to consider BMR as equivalent on both Unit 2B and 3A, for example.

The HIC recognized this limitation in their strategy, but considered the tradeoff worthwhile. Generating flexibility allowed for the localization of the intervention onto as many different places as possible, and then the consequent evaluation must be conducted at a *local* level as well. "I think what you need to look at, rather than saying that they do look different," one HIC executive suggested, "is have we actually made an improvement or change in terms of communication, and how the teams work, and how we communicate with the patient?"

Another executive agreed with this sentiment. "It's called diversity. I'm not concerned," he said. "My view is that it's *theirs*. They choose to do whatever they want with it. If it works for them, good for them. If it doesn't, then they'll stop." Part of the challenge in evaluating BMR lies in the complexity of cultural change, he explained. "That's why I find the BMR program very different from the other programs, the metrics, implementation, who does it, keeping track of who's doing it. It's out of our control. We can't have full control of it. That's one thing from my experience at a state-wide level— I can't control it, because people can go off and do whatever they want."

Critics of this strategy would point out that rituals can often be performed purely for ritual sake, and lose its underlying meaning and efficacy. This is the idea of "cargo cult quality improvement"— a term coined by healthcare sociologist Mary Dixon-Woods (Dixon-Woods 2014), and borrowed from physicist Richard Feynman's interpretation of cargo cults in the Melanesia. Although the accuracy of modern depictions of cargo cults have been fiercely criticized by anthropologists (Otto 2009), the story usually told is of an

indigenous Melanesian tribe that observed airplanes landing with supplies for troops during World War II. Feynman (1985) famously describes what happened to the tribe after the war was over:

They've arranged to make things like runways, to put fires along the runways, to make a wooden hut for a man to sit in, with two wooden pieces on his head like headphones and bars of bamboo sticking out like antennas – he's the controller – and they wait for airplanes to land. They're doing everything right. The form is perfect. It looks exactly the way it looked before. But it doesn't work. No airplanes land. So I call these things Cargo Cult Science, because they follow all the apparent precepts and forms of scientific investigation, but they're missing something essential, because the planes don't land. (p. 326)

Similarly, in cargo cult quality improvement, the implementation looks similar on the surface, but is missing a fundamental piece that helped drive changes in outcomes. There is some evidence to suggest that this is a frequent occurrence as interventions become globalized and exported to different contexts. Subsequent implementations of the surgical safety checklist and the Keystone-Michigan project, for example, have frequently failed or otherwise not demonstrated improvements in quality.

This phenomenon has actually been well known to sociologists evaluating social programs for decades. The *iron law of evaluation* states that as a social program becomes implemented at a large-scale, the measured value of its net impact approaches zero (Rossi 1987). This effect is often the result of policymakers' failure to understand *why* an intervention worked at a demonstration site, or a failure to localize an implementation. This phenomenon translates well to healthcare— indeed, hospital ethnographers have demonstrated that the surgical safety checklist and the Keystone-Michigan projects are not always understood as highly complex social interventions, but instead their success are attributed to a “simple” checklist.

By emphasizing the principles behind BMR and its localization, the HIC strategy may actually help ensure that cargo cult quality improvement does not occur, and therefore avoid the iron law of evaluation. Dixon-Woods (2014) writes:

When an intervention does not work despite having worked in a demonstration project, there is a danger of mistaking problems of programme implementation for problems of context. It might be assumed, for example, that the new context was ill-suited to the intervention or incapable of supporting it, and thus abandoned. (p. 94)

Following a localization approach over standardization avoids this problem of context entirely, and potentially permits the fundamental principles to be transmitted to allow for change.

Evaluating the HIC strategy, however, then becomes a tremendous challenge. The diversity in implementations raises questions about the nature of success for BMR. The ritual has now taken a multitude of forms, and solving different problems on different units. Any evaluation work that is completed must also occur on a similarly localized scale, evaluating each individual intervention in its context. The lack of controls would further require a different set of statistics than most clinicians are trained, borrowing study designs from systems engineering or manufacturing towards studying change.

The HIC and Galen strategies therefore reflect a fundamental tension in medicine. On one side, medicine hopes to be evidence-based, and demands quality improvement changes be systematically and rigorously studied in a controlled, experimental fashion. On the other, medicine is a pragmatic profession, and scientific study of changes in the field is not always possible. Practical experience and before-and-after studies may comprise the best evidence available for quality improvement changes.

The ability to detect changes in social interventions like BMR may be limited, and a practical stance on its effects is likely to be healthy. “When you think about it,” one HIC manager said, “BMR is only one hour of the day. There’s 23 other hours. What we’re really doing is plunking in this thing called BMR, which allows everyone to plan for the day. I guess our aim is for the program is to enhance teamwork and communication, and involving the patient as part of the team.” He paused, and then sighed deeply.

“BMR is only,” he said, “the very first step for that to happen.”

- CH 7 -

CONCLUSIONS

During a visit to a community hospital outside of Galen, I was invited to a dinner with a few of the hospital executives. I had barely sat down before I was surprised by a question from one of the attendees. Excited to learn that I was an anthropologist, she leaned over and asked, “So, how do you define culture?”

I found this a wholly remarkable question to be coming from a group of medical professionals. Choosing my words carefully, I explained that multiple definitions existed within anthropology, but I found that the one most useful was to think about culture as a network of shared ideas. “Really?” she said. “That’s so interesting, because we think of culture as behavior.”

This particular hospital was implementing a widespread culture change, using lean management principles—a management philosophy derived from the Toyota Production System, which emphasizes a culture of continuous improvement and flat hierarchies (Kim et al. 2006). “We believed that if you have people do the behaviors first,” she continued, “then the ideas would follow.” She explained, however, that the hospital was struggling to engage with its employees through this change, and many were unhappy.

“Perhaps,” she said, “we need to be thinking about teaching them the reasons why we’re doing what we’re doing.”

Over the course of the dinner, we explored the idea that they may have neglected a key component of human motivation—the cultural models that create drive in behavior. I told her about how her conception of human behavior is not uncommon in healthcare, and

some have even recently argued that medicine needs to extend the traditional “Triple Aim”— population health, experience of care, and cost— to a new “Quadruple Aim” that includes the experience of its workers (Sikka, Morath, and Leape 2015).

This brief example may have highlighted culture’s obscuring properties, but one that seemingly could have been avoided. More importantly, I was struck at this example of how defining culture had real-world ramifications, in contrast to much of academic anthropology. How culture was defined informed how the hospital change strategies, and was suggestive of how these strategies might change based on how culture was understood. For those seeking to change culture in healthcare, the definition of culture had the potential to affect lives.

Webs of Complexity

Ethnography seeks to capture details that would otherwise be lost in abstraction, the realities of those who are closest to the ground truth. The risk, however, is that it becomes all too easy to become lost in the particularities. As anthropologists, healthcare professionals, or hospital administrators, what do we do with the information in these case studies? What are the major lessons and ramifications? Is any of this generalizable beyond the hospitals examined in detail?

In order to answer these questions, a brief review is in order. First, the central investigation of this manuscript is one of a curious, perplexing paradox. How can an identical quality-improvement intervention targeting cultural change, implemented in the same way, have such conflicting effects between hospital units? On Unit 2B, the UBCM/BMR intervention fundamentally changed the hospital hierarchy, encouraging

nursing technicians and nurses to work more closely with doctors. In contrast, the intervention collapsed on Unit 3A after a year, where the rounds did little to change the existing hierarchy.

The implementation strategy used on both units was similar. The evangelical style of the training classes run by Lee and David sought to not only impart mental models of the rounds, creating new rituals of interactions between doctors and nurses, but also cast the unit's implementation as a revolution worthy of the participants' time and attention. As illustrated in Chapter 3, the implementation artifacts generated as part of the implementation package sought to reinforce this perception—the signed letters, framed diagrams, and unit celebrations cast BMR as part of a new identity and a new culture, beneficial for both patients and staff.

Both units had distinct advantages and disadvantages. Unit 2B was notable for its baseline culture as the “friendliest unit”, and had an unusually strong nursing leadership. The Boss Lady ensured that the techs were involved in BMR, which was largely perceived as historic, and resulted in a sense of novelty and pride over their particular localization. Feedback across the disciplines was also normalized, which allowed nurses to exert power over the doctors in way they hadn't before. Disadvantages included an emphasis on nursing leadership to implement, which meant that the rounds were largely designed without input from the doctors, and doctors were largely excluded from formal training. Unit 2B also lacked geographic co-location of the physicians, a pivotal component of the UBC model.

In contrast, Unit 3A was a much larger and busier unit, but also had several advantages. The unit had previous experience with BMR, and, more importantly, successfully co-located its physician teams. Significant funding was also available to hire midlevel providers and a physician partner, and the implementation was conducted with high

fidelity. Disadvantages included a strong culture of workarounds to the unit's own practices, and a working culture where nursing was perceived as menial and fundamentally in conflict with both patient-centered care and hospital management. The performative aspects of BMR interacted poorly with this cultural context, resulting in a mutated meaning of the BMR checklists, and a recapitulation of hierarchy within the rounds. The doctors and nurses were burdened by a very high patient load, and the social workers could not consistently attend BMR—both of which further degraded perceptions of the rounds. Critical to this interpretation is that the failure of BMR on Unit 3A was not due to a lack of knowledge or competency. In contrast, doctors and nurses understood the technical aspects of BMR, as well as what it was meant to accomplish. Individual mental models surrounding the purpose of BMR were intact, and most of the staff would have been able to articulate the original intent of the implementation.

There were also many commonalities between the units. Both units were comprised of tremendously passionate and caring nurses, and staffed with an equally passionate group of physicians that also staffed both units. Racial and gender compositions were similar across both units. Significantly, both units failed to implement real-time order entry on the BMR rounds. The BMR rounds themselves were also structured very similarly, and the ritual was implemented with high fidelity at both sites. Both units were also located within the Galen Memorial Hospital system.¹³

¹³ Despite these commonalities, however, one major limitation of this comparison is that the units are not perfectly analogous. Unit 3A was considerably larger and focused on general medicine, while Unit 2B was smaller and specialized in renal medicine. Unit 3A was able to successfully geographically co-locate physicians with nurses, while Unit 2B became only partially geographic. While the Galen hospitalist service staffed both units, Unit 2B was also attended by private physicians, and the nurses, patients, and management was different on both units. The implementations also occurred at nearly a year apart, and there were likely other changes in institutional context during this time. I also did not choose these units as part of an intentional sampling strategy, and were instead samples of convenience and primarily chosen by the hospital leadership as implementation sites.

This limitation is unavoidable, and characteristic of research within healthcare quality improvement. True case-control studies are nearly impossible to develop between hospital units, as hospital units are heterogeneous and never truly isolated. This limitation has important ramifications for future research, as discussed in a later section with recommendations for implementation science.

In stark contrast to Galen, the Healthcare Innovation Coalition in Australia utilized an implementation strategy that emphasized localization over fidelity. The HIC presented the fundamental concepts behind the BMR intervention to hospitals, but each hospital unit developed a highly localized version of the rounds. This strategy resulted in substantial diversity in the form of BMR rounds, and BMR varied tremendously in both form and function at different hospital units, solving disparate problems at each site. The contrasting implementation strategies used by Galen and the HIC largely mirrors a broader tension between medicine as an evidence-based science, and medicine as an applied practice.

A cross-case analysis (Yin 2003) does not readily identify unifying factors that consistently predict implementation success or failure across the Galen sites. As further demonstrated on Units 2B and 3A, no singular factor predicted success or failure at each individual unit either. Instead, I argue that a web of complexity drove success or failure at each unit. Core to this complexity was the meaning of BMR, and how the local culture interacted with the frontstage/backstage components of the rounds. Yet, within each chapter I've presented alternative hypotheses— the severe patient load on Unit 3A that undermined the rounds, for example, or the argument that culture never really changed on Unit 2B at all. These analyses of each case illustrate the need to understand each unit as a multidimensional space, spanning structure, leadership, history, psychology, race and ethnicity, and culture.

The Social Life of Checklists and Rounds

The first major perspective that emerges from this analysis is that healthcare interventions against medical error must be recognized as *sociotechnical* in nature, and not purely as technical endeavors. Administrators hoping to implement BMR often initially viewed the rounds as a “simple round,” or as primarily a set of behaviors that staff must learn to adopt. As this manuscript demonstrates, not only did the implementation of BMR require a complex reconfiguration of authorities, relationships, and beliefs, but also its ability to affect unit cultures likely arose from this complex reconfiguration. Focusing on the *mechanics* of conducting the rounds simultaneously threatens the ability for successful implementation, and neglects the active ingredient of the rounds.

While recognizing this complexity is intuitive for anthropologists, it is not for many in healthcare. Healthcare tends to conceptualize technology as easily transferrable between contexts— after all, pharmaceuticals and stethoscopes can be carried across national borders and largely expected to work in the same way. In contrast, hospital quality improvement interventions are both challenging to export and challenging to standardize, as they require alterations of human behaviors, beliefs, resources, and relationships.

Yet, only recently has this constraint been recognized within the quality improvement literature, and especially as implementation failures have been increasingly reported. For example, checklists have been demonstrated to significantly decrease mortality and harm in both surgical complications (Haynes et al. 2009) and catheter-related bloodstream infections (Pronovost et al. 2006). These studies were trumpeted as major achievements in healthcare quality improvement, and one of the dominant narratives that

emerged was that checklists were a “simple, evidence-based solution successfully used in other industries” (Catchpole and Russ 2015, 4).

Recent work has highlighted the frequent failures of checklists, which suggest that they are anything but simple. Large-scale rollouts have reported failures of checklists in over a hundred hospitals in Ontario (Urbach et al. 2014), a state-wide program in Michigan (Reames et al. 2015), as well as the UK National Health Service (Bion et al. 2013). In a clever study that utilized medical students to audit surgeons in New Zealand hospitals claiming to have implemented the checklist, actual usage rates of the checklist varied significantly between hospitals, and depended primarily on *how* the checklist was implemented (Hannam et al. 2013)—a finding that has been echoed elsewhere (Cullati et al. 2013).

These failures are likely exacerbated as healthcare has largely ignored the *social* aspects of the checklist. Within aviation, for example, checklist design is highly complex, and also focuses on *how* the checklist is conducted—among most commercial pilots, for example, a challenge-response format is used where one pilot must respond to another (Degani and Wiener 1993). The efficacy of checklists in moving clinical outcomes may also arise from associated sociocultural changes, rather than the checklist itself. For example, an anthropological investigation demonstrated that the Keystone Initiative to decrease catheter-related bloodstream infections substantially changed hospital cultures by creating a new network community structure that promoted social norms and shared learning around safety (Dixon-Woods et al. 2011), and by elevating nurses into an oversight role over the doctors (Clay-Williams and Colligan 2015).

This sociotechnical perspective offers important lessons. The first is that the “active ingredient” of quality improvement interventions must be clearly identified. How, exactly, did a quality improvement intervention lead to changes in outcomes? Attempts to answer

this question must consider that changes in outcomes may be the result of *social effects* of the technical intervention, in addition to the technical components. In the case of BMR, the implementers did not have a full understanding of which aspects of UBC/BMR implementation actually lead to changes in outcomes— whether in the geographic collocation of doctors, flattening of the nurse-doctor hierarchy, or the rounds themselves— in much the same way that implementations of checklists failed to recognize the social changes associated with their implementation.

This kind of understanding is called a "programme theory" by some researchers (Davidoff et al. 2015; Dixon-Woods et al. 2011), specifically focusing on *how* the program is implemented and the context in which it is created, rather than treating such data as background or "noise." These perspectives are critical for measuring any changes in patient outcomes, because hospital managers and researchers cannot implement or evaluate hospital innovations unless the underlying mechanisms are understood. Attempting to do so is akin to ignoring the pharmacological mechanisms of a drug under development, and raises the risk for "cargo cult" quality improvement (see Chapter 6), as those implementing the innovation risks implementing a similar form but fail to implement the underlying mechanisms that actually drove improvement.

Clearer understandings of the active ingredients of quality improvement interventions would also permit a more nuanced discussion of which components of an intervention to standardize. Healthcare researchers tend to assume standardization as a universal good (Wears 2014), while a far more useful perspective is to recognize that standardization has both advantages and disadvantages, and to strategically choose which components to standardize or not. The case of BMR illustrates the fundamental tensions between standardization and localization, especially with the differences in the Australian

and Galen hospitals, and also demonstrates how standardization can be near-impossible—after all, both Units 2B and 3A were in the same hospital, and still had significant differences.

Recommendations for Healthcare Leaders

If healthcare interventions must be considered sociotechnical in nature, how does this insight translate to the pragmatics of a hospital setting? If a hospital is looking to implement BMR, how can this perspective inform subsequent implementation strategy?

This discussion is better contextualized by an example of what ought *not* to be done for complex organizational interventions. First, a hospital or hospital unit decides to implement a particular package, a predetermined kit that promises great results—as is frequently the case for checklists, a rounding ritual like BMR, or a management model like Lean. Hospital leaders review the evidence for the new package, and then decide to dedicate resources to implement. The implementation team then draws on change management techniques to ensure “buy-in” from frontline staff, and then the intervention is implemented.

This stereotyped series of events occurs not infrequently in healthcare, and while it may even function well for technical interventions, it risks failure for sociotechnical change. First, this process assumes both a certain amount of similarities in context between hospitals, which may be more easily ascertained in technical change, but more challenging for assessments of sociocultural context. Second, this process assumes that an intervention is easily transferrable between contexts. As the comparative case study of BMR has illustrated,

transferability for complex sociotechnical interventions can be challenging, and even fundamentally misguided.

Third, the concept of “buy-in” intrinsically positions hospital management against its own staff. Research on buy-in within healthcare is scant, but its conception fundamentally rests on the idea that bedside staff will be convinced of a change once management effectively communicates the right message in the proper way (e.g., Kirkley 2004; also see Kotter 1996, a change management classic). The implicit assumption is that buy-in is something for management to obtain, and that behavior change will occur once the proper mental models are in place. As the anthropological literature indicates, mental models are not always determinative of behavior in this fashion (see discussion in Chapter 1), and this unidirectional nature of buy-in ultimately disempowers the frontline staff.

Instead, prior to deciding to implement BMR, the implementation team should first investigate its own context and practices, understanding the drivers of the phenomenon under investigation (e.g., Bennett and Provost 2015). Why is it that doctors and nurses are not currently working well together? What are the local barriers that promote or inhibit collaboration? Ethnographic and community participatory methods may especially be useful here (e.g., Aronson et al. 2007), as decreasing the cultural distance between the bedside staff and management would help minimize mismatches in perception, such as those experienced on Unit 3A.

This proposition is a fundamental rearrangement of the Plan-Do-Study-Act (PDSA) cycle, a commonly used method for creating and testing changes within healthcare (M. J. Taylor et al. 2014). Teams utilizing a PDSA process set an aim for improvement, plan a test of a new change, conduct the test (“Do”), study outcome data, and refine the change based on the test (“Act”). Note that this process does not emphasize a study of the problem prior

to designing an intervention, and the model instead encourages rapid iterative testing of new changes.

Study-Plan-Do-Act cycles are likely to be more productive, as understanding both the problem and the context can inform subsequent design of both intervention and its implementation strategy. Packages like BMR are attractive, but they usually assume common solutions to common problems, and as this study demonstrates, substantial heterogeneity in context exists between hospital units even in the same institution. BMR is an intervention that fundamentally creates opportunities for more communication, a solution that was arguably not appropriate to every context. In the case of Unit 3A, simply spending funds to decrease the caseload of both doctors and nurses would've arguably improved coordination of care substantially. Yet, taking this step to interview the bedside staff was not part of the formal practice for the Galen implementation team.

The second recommendation is for leaders in healthcare to consider the episodic components of mental models of the intervention, or the psychological meanings of the intervention for bedside staff (see Chapter 1). The success of BMR and other such interventions depends on the willingness of participants to engage with the practice, and this engagement was lost on Unit 2B after the meanings of the rounds shifted. Leaders should recognize not only the importance of knowledge in guiding behavior, but also its limitations—human motivations are guided as much by the salience of mental models as the content, if not more so.

The final recommendation is to recognize that BMR is neither intrinsically effective nor ineffective. Most organizational interventions should be treated as such, as “implementing organizational interventions is not a matter of taking a pill or flipping a switch” (Singer 2013, 1). The statisticians formally evaluating the BMR intervention lumped

all of the BMR units in its analyses, including Units 2B and 3A, and compared all BMR units against other matched non-BMR units in the hospital. BMR was being evaluated as though it was a drug study, and the team expected to find a similar effect size across all units. As this manuscript highlights, however, BMR functioned differently on different units, and must not be evaluated as a binary variable of present versus absent. If BMR is to be evaluated in this fashion, the strength and nuances of the implementation must also be measured.

Recommendations for Anthropologists

In this section, I return to the issues identified in the introduction and the opening vignette of this chapter—how do we apply anthropological concepts of culture and meaning to the healthcare setting? In order to answer this question, I draw from both relevant literature and participant observation with the implementation teams at both Galen and Australia.

Anthropologists must first recognize that medicine is not a science, but a “learned, rational, science-using practice” (Montgomery 2005, 36), primarily concerned with the utilitarian endeavors of healing. In contrast to academic anthropology, those working in medicine need real and immediate applications of theory, whether preventing deaths from infectious disease or the need to improve the delivery of care. Within the context of medical error and as described in Chapter 1, the anthropological concept of culture is useful primarily because of its explanatory value to behavior.

Second, those working to change culture in healthcare are interventionalists, and are seeking to apply interventions to groups, whether nurses, doctors, or entire hospital units. In

contrast, anthropologists have resisted characterizing groups of people, arguing that extensive diversity exists within any artificially drawn boundaries. Discussion of population level trends, however, are useful for those seeking to change healthcare or policymakers. The question of utility again arises from fundamental differences in epistemological goals between social scientists and those seeking to apply social science— the former are focused on some form of truth or higher levels of explanation, while the latter are seeking to apply interventions or changes for groups. For practitioners, understanding statistical trends at a population level informs subsequent decisions on policymaking or strategy, despite the fact that the underlying categories may be arbitrarily drawn.

Many of these criticisms can be addressed through population thinking (Mayr 1959; Hey 2011), and conceptualizing culture in an epidemiological sense as ideas distributed between individuals in a population (Sperber 1985). Researchers can then document what kinds of cultural models are shared and at what percentages across the group. This shifts the conversation of meaning away from a binary typological one (“Doctors believe...”) and towards a more nuanced conception of meaning as a continuous variable examined at a particular time (“In 2015, $x\%$ of doctors on Unit 2B believe...”).

This population perspective to meaning is useful for practitioners. First, a population perspective allows for the study of dynamics and dispersion across the group over time. In much the same ways that the implementation team monitored individuals who “adopted” BMR, subsequent policies can then be designed to modify its flow across groups. Second, a population approach then allows for explanations to be sought for similarities. Do people who share similar meanings derive the meanings from similar original sources (e.g. training sessions), or because they derived due to similar environments or contexts (Tooby and Somides 1992)?

Finally, while anthropologists have largely debated where shared culture is, this debate is confusing for medical practitioners. Notions of shared culture outside of the brain conflict with neurobiological models of the mind, and, more importantly, provide a challenge to interventionists. If culture is defined in a non-descript space between individuals, how can interventions be designed to change it? It is far more intuitive to conceptualize mental models as individual, but restricted by both cultural models and environment. A model can have an additional character of soft or hard, the latter if it “resists change, either because it is deeply internalized within individuals, or because it is strongly institutionalized in a system of statutes and roles” (D’Andrade 1999, 96).

Both anthropologists and non-anthropologists alike may criticize the culture concept for these fuzzy boundaries, and criticize its definition. Anthropologists responding to this debate should consider highlighting the example of the species concept, as a concept with analogously fuzzy boundaries, but one that has been central to the study of evolutionary change.

Many are not aware that the major critiques of the culture concept are also largely true of the species concept, and biologists have similarly struggled to define species. “There are $n+1$ definitions of species,” writes Wilkins (2010), “in a room of n biologists.” For every definition of species in the history of biology, exceptions exist to problematize the definition. Early definitions examining morphology (i.e., grouping organisms together that look similar) fail to hold in cases of sexual dimorphism— Carl Linnaeus famously didn’t realize that male and female mallard ducks were members of the same species, for example (Wheeler 2014). Definitions focusing on reproductive isolation become problematic in the presence of hybrids (Mayr and Ashlock 1991), such as ligers and tions. All of these definitions become problematic when considering asexually reproducing organisms, the study of which requires

its own species concept (i.e., agamospecies (Mayden 1997)), and bacteria, which are found to be so genetically promiscuous that defining limits based on genetic similarities become problematic (Konstantinidis, Ramette, and Tiedje 2006; Chan et al. 2012; Gevers et al. 2005).

Much like culture, no scientific consensus exists for the definition of species, and the concepts explain phenomena whose realities are contested. Although they would not identify themselves as postmodern, some biologists have suggested eerily postmodern solutions—including abolishing the concept entirely (Mishler 2010) or focusing instead on “ecotypes” (Cohan 2002). Yet, every biologist would agree that the species concept has been central in understanding change within evolutionary biology.

The major lessons from this review of species is two-fold. The first is that the species concept has been defined within the experimental, theoretical, or pragmatic context of its usage. No universal definition of species exist, but rather the definitions change based the organisms being studied and the questions being asked. The search for a universal and rigorous operationalization of “species”— or culture— is consequently unnecessary and unlikely to be productive.

The second is that concepts do not need to be universal and rigorous to be useful. The species concept has been useful *because* of its oversimplifications, and not in spite of it. In developing natural selection, for example, Darwin (1859) vaguely defined species as “arbitrarily given for the sake of convenience”. A more comprehensive definition would not have enhanced his core argument, as Darwin clearly didn’t need it.

This is especially likely to be true of culture, a concept that is far more challenging, and the reluctance of anthropologists to engage with simplified definitions of culture may actually be limiting. For example, *The Spirit Catches You and You Fall Down* (Fadiman 1997) is a book written by a journalist that has made substantial impact, and widely taught in both

introductory medical anthropology courses and in medical schools. The book has been criticized for its essentialized and static conception of culture— yet as Taylor (2003b) points out, the narrative is compelling only *because* these simplifications help drive the story along.

Statistician George Box famously observed, “All models are wrong, but some are useful.” This type of population thinking recognizes that the borders drawn in assessments of culture are not meant to form universal typologies, but are categories with limitations. However, for practitioners hoping to change culture, anthropologists should help make these models useful, despite the fact that they are not perfect.

Recommendations for the Implementation Sciences

Hospital units are human systems, and intrinsically complicated spaces. Yet, an intended side effect of academic research is the reduction of this complexity. As scientists, we are interested in isolating individual factors— we are interested in the specific genotype that leads to a specific disease, which can then be treated with a very specific pharmaceutical. In scientific experiments, we control away any variation as much as possible, relying on the isolation of specific factors, whether in lab tests with genetically identical cloned mice, or randomized controlled trials in humans.

This approach has carried over to the healthcare implementation sciences. In a systematic review of healthcare quality improvement research, Alexander (2011) found that most studies tended to be overly focused on isolating independent effects of predictors, lacked theoretical frameworks, and failed to integrate holistic perspectives on the

implementation. This finding also mirrors the isolation between scientific disciplines that study organizational spaces— organizational psychology, human factors, management sciences, systems engineering, economics, anthropology, and sociology all typically work in isolation.

The healthcare implementation sciences, as a consequence, has struggled to integrate these perspectives, and is clearly seen in the fragmentation of implementation frameworks used by researchers to make sense of implementations. As an anthropologist, I found most of these frameworks perplexing, as they tended to be long lists of domains and factors. For example, the Promoting Action on Research Implementation in Health Services (PARIHS) framework is a widely cited list of 10 factors (e.g., “research,” “leadership,” “skills and attributes”) split into categories for evidence, context, and facilitation (Stetler et al. 2011); the Consolidated Framework for Implementation Research (CFIR) is a list of 39 factors spanning intervention characteristics, the outer setting (e.g., patient needs), inner setting (e.g., structural characteristics, culture/climate), characteristics of individuals, and process (Damschroder et al. 2009); and normalization process theory is comprised of four core processes in coherence/sensemaking, cognitive participation, collective action, and reflexive monitoring (May et al. 2007).

In many ways, these frameworks are reminiscent of the Human Relations Area Files, an anthropological initiative to study cultural diversity. The HRAF database is ethnographic, and, as of 2015, spanned over 295 different cultures ranging from hunter-gatherer groups to Italian Americans (Human Relations Area Files 2015). For each culture, there are 915 relevant factors, ranging from demographics to body alterations to humor to art to social stratification to sex. The main difference between the HRAF and implementation science frameworks, however, is that no anthropologist would claim the HRAF to be fully

comprehensive or universal. The list of characteristics provides data to construct cross-cultural comparisons, but any subsequent interpretation must draw from social theory found elsewhere.

In contrast, researchers in the implementation sciences have held hope that implementation frameworks will carry explanatory power, and even comprise a universal theory of implementation. The CFIR and PARiHS are meant as comprehensive frameworks, synthesized from literature reviews. Similarly, the General Implementation Framework has been developed as an abstraction from a systematic review of implementation frameworks (Moullin et al. 2015), and general implementation theory as a higher-level theory derived from NPT (May 2013).

This search for universality is an inappropriate translation of scientific principles to the study of a fundamentally social phenomenon. Efforts to identify contextual factors that universally facilitate or hinder implementation processes is highly unlikely to be productive, as the same factors have different effects in different contexts. For example, management researchers have demonstrated that leadership is not a universal phenomenon, and a leader considered effective in one context cannot be assumed to do well in another (Javidan, Dorfman, and De Luque 2006).

Furthermore, identification of universal contextual factors would require standardization of both the implementation process and its context. This standardization is challenging, as this kind of experiment would require each unit to implement identical interventions in the same way, controlling for differences in context between naturally heterogeneous hospital units. As the comparative case study of the Australian strategy suggests, this strategy may ultimately increase implementation failure, especially as failure to localize is thought to drive the Iron Law. Even if such standardization were possible, the

likely sample size needed for sufficient statistical power to detect differences between hospital units in a list of hundreds of factors is astronomical.

A universal theory of implementation is likely impossible. In a systematic review of implementation frameworks, Nilsen (2015) writes, “It seems unlikely that there will ever be a grand implementation theory since implementation is too multifaceted and complex a phenomenon to allow for universal explanations.” The complexity of BMR serves as a good example— none of the established frameworks would have been sufficient to explain implementation success or failure, and a multiplicity of factors drove its implementation at each site.

Instead of searching for a universal implementation theory, the implementation sciences should focus instead on the underlying *processes* and *mechanisms* that drive change in healthcare, focusing on the *how* and *why* rather than the *what*. Hospital units are complex social systems, existing outside of laboratory environments, and involve unpredictable and complicated human beings. These types of systems can be explained only with an holistic approach that spans multiple theories and multiple disciplines.

From this perspective, a universal theory is also simply not needed. Universal theories are rare in the sciences, and scientists regularly conduct work without them. For example, fundamental chemical and physical principles underlie every biological phenomena. Yet there is considerable diversity of theories and approaches, even within biology— ranging from the taxonomic, physiologic, evolutionary, molecular, ecological, to the genetic theories— which allow for the study of different components of biology without resorting to a universal underlying theory.

This separation already exists to some extent in the implementation sciences, although rarely discussed explicitly. In a systematic review of implementation frameworks,

Nilsen (2015) suggests that implementation theories are currently fulfilling three separate needs— to help guide the process of implementation (“process models”), explaining what factors influence outcomes (including classic theories from the social sciences), and providing frameworks to assist in the evaluation of implementation.

What would be far more useful, however, is recognize that a hierarchy exists between these different theories, and that the basic social sciences underlie all of them.

Anthropological, sociological, psychological, and economic principles provide the underlying *mechanisms* that are explained by higher-level frameworks. For example, leadership is a frequent factor in many implementation frameworks, yet leadership dynamics are likely broken down into anthropological understandings of power, psychological domains of charisma and trust, and sociological understandings of legitimacy.

The social sciences ought to be considered as a basic science for the implementation sciences. Rather than an overarching meta-theory, the social sciences provide a theoretical toolkit to explain complex human phenomena. This holistic perspective is fundamentally anthropological, and, specifically, key to the power of four-field and biocultural anthropological approaches. Anthropologists draw on cultural anthropology, biological anthropology, archaeology, linguistics, psychology, and the biological sciences as needed— this holistic perspective is critical for understanding the complexity of the human experience. This approach is also identical to those successfully used by applied anthropologists, who use contextually appropriate theory to inform their questions, methods, and subsequent actions. In applied research, theory guides the research design, and, in turn, is simultaneously informed by its application (Rylko-Bauer, Singer, and Van Willigen 2006).

How might this toolkit approach look in practice? Understanding the BMR and UBC implementations again provides a useful example, and Figure 1 is network of social sciences

disciplines and theories that applies towards understanding the units in the study. A comprehensive review of each component of this network is outside the scope of this manuscript, and not all elements of the framework received intensive study within this research project. However, it should be evident that each one of the elements in the framework would provide useful perspectives on the implementation of BMR, and, importantly, interact with one another in complex ways over the course of the implementation.

Thinking in this type of framework connected to the broader social sciences also permits to generalization to theory. The case studies of Unit 2B and 3A, for example, can be considered to constitute narratives that highlight how the meaning of BMR is transmitted through conversation, symbols, and trainings. These are informed by and also inform broader anthropological theories on meaning and ritual, as highlighted in previous chapters. Future ethnographic work might investigate these dynamics in greater detail, examining the epidemiology of who understood what, and examining the specifics of how those beliefs were transmitted between the doctors and nurses. In turn, this type of detailed understanding of the *mechanisms* behind how meaning is enacted would inform future implementations. Rather than generalizing to populations, the data can be generalized to theory.

This processual approach echoes the realist approaches suggested by Pawson and Tilley (1997). Realist approaches emphasize a “generative” strategy, emphasizing that evaluations should be uncovered to investigate *how* and *why* particular mechanisms generate certain outcomes for specific contexts, rather than a deductive approach characteristic of randomized controlled trials. I am extending this perspective in two ways. First, I agree with other critics of the realist approach that controlled studies and experimental designs are not

intrinsically fatal to implementation sciences (Dixon-Woods 2014). Instead, those types of experiments should be considered important components of an ethnographer's toolkit. Experimental and quasi-experimental designs are challenging to create in healthcare, but are enormously valuable when they are feasible. However, recognizing the great difficulty in creating tightly controlled arguments, other epistemological approaches must be sought and privileged.

Second, I argue, as I have above, that middle-level implementation theories should not be viewed as isolated from broader theories in the social sciences, but should be viewed as *applications* of fundamental social science concepts. Ensuring connections with the social sciences would ensure that researchers are not creating new constructs in silos (e.g., as was the case with the culture concept in healthcare), and also ensure that scientific theories can be informed with real-world experiences.

The realist argument, however, that the *focus* of research in implementation science should be on mechanisms remains a sound one. This focus on mechanism should be one that is holistic, and built on the foundations of centuries of research in the social sciences. Especially as implementation science is balanced against the pragmatic needs of healthcare, the discipline must work at the intersection between theory and practice.

Towards a Translational Social Science

The meeting was held behind a closed door in a small conference room in the hospital, and for a good reason. Standing in front, a hospital manager was expressing his disappointment that patient satisfaction ratings were not higher. The manager pointed to the trend over the past few months, the average rating in each month highlighted in bright red.

The audience included an attending physician who had a bit of social science training. “I’m sorry,” she asked gently, “but how big of a sample size is considered statistically significant?”

“What do you mean?” the manager asked.

“For power?” The manager shook his head, still confused. “Never mind,” the attending muttered, as the manager changed the topic.

After the manager was out of earshot, one of the other nurses empathized with the attending. “Some hospital units only get one survey back a month,” the nurse said, “but then the executives consider that a hundred percent, and it’s green and fine.” These scenarios were precisely the reason that social scientists consider sample sizes important when considering survey research— if a unit typically sees a hundred patients a month, and only one patient fills out the survey, the sample size of a single survey cannot be reasonably thought to represent the entire group.

The attending frowned deeply. “The statistician in me,” she said, “doesn’t like looking at the numbers without asking whether they have any *value* as a number. There’s no statistical significance! Who pays all this money for this junk?!”

This example was an extreme one, but I observed others at multiple institutions where both clinicians and hospital leadership lacked any sort of basic training in the social

sciences. Yet, basic understanding is clearly needed to manage constructs such as patient satisfaction—which is primarily measured in surveys, and should presumably involve a scientific sampling methodology. Patient satisfaction in particular is now a high priority for many hospitals, especially as the Centers for Medicare and Medicaid Services began withholding 1% of Medicare reimbursements based on patient satisfaction scores in 2012.

Tools from the social scientists are arguably needed, however, for most major issues in healthcare. After all, most of our health problems do not suffer from a lack of a technological fix, but instead are due to ultimate causes that are sociocultural in nature. For example, deaths from medical error aside, the top three leading causes of death in the United States are cardiovascular, cancer, chronic lower respiratory diseases, stroke, and injuries. We have both the knowledge and the technical ability to prevent many of these cases from happening—one CDC study estimated that around 40% of these deaths are preventable (Yoon et al. 2014). In other words, approximately 360,000 Americans die every year not because we don't have the technology or knowledge to prevent those deaths, but because of failures to help patients implement or access that existing knowledge or technology. Among patients who do develop chronic disease, only an estimated 43 to 78 percent of patients actually take their medications (Osterberg and Blaschke 2005).

Another dramatic example is handwashing in hospitals. The demonstration that handwashing can prevent hospital acquired infections was first conducted in 1846. Yet, in the United States, despite the fact that around 722,000 patients develop and another 75,000 patients die in the US from hospital-acquired infections every year (Magill et al. 2014), handwashing compliance rates average only around 47% (Chassin, Mayer, and Nether 2015; Erasmus et al. 2010). Handwashing is a simple and readily accessible technology, but our problem is that doctors and nurses are not using it.

In diseases still lacking a technological fix, however, social and cultural factors are likely still very important. Recent infectious disease outbreaks demonstrate this, as Ebola cannot be contained without an understanding of funerary rituals and marriage patterns in Sierra Leon (Richards et al. 2015), HIV prevention requires tailoring of messages to potentially stigmatized communities (Kippax 2012), and many infectious diseases have ultimate causes in poverty or inequality (Farmer et al. 2006).

These are all problems that involve human systems, which are every bit as messy and complex as a hospital. There is a need for anthropologists who work within this intersection between social systems and clinical practice. Within other scientific disciplines, these types of practitioners are common—biology leads to medicine, physics to engineering. In contrast, anthropologists do not have a practitioner equivalent to the field. Academic anthropologists typically study change, but do not play an involved role in creating it.

Anthropologists and other social scientists, however, cannot ignore the need for greater involvement. Recent models have slowly emerged that suggest that including practitioners skilled in the social sciences can help affect change. The British, Australian, and the United States governments have each announced the creation of behavioral insight teams, nicknamed “nudge units”, working to apply insights from the social sciences towards government policy. Similarly, the design thinking movement has highlighted the key importance of anthropologists in organizations, generating both insights and informing efforts to change (Kelley and Littman 2005). More anthropologists have been hired at senior levels of industry, including Dr. Genevieve Bell at Intel, and Dr. Lisa Allen at Johns Hopkins Medicine.

The hospital is already a divided place. After all, BMR was an intervention designed to create dialogue between doctors and nurses, two cultures in their own right. An even

greater distance lies between the healthcare community and social scientists. In order to tackle the health problems of the 21st century, however, a bridge must be built between the two disciplines, changing culture in healthcare.

- APPENDIX 1 -

QUANTITATIVE METHODOLOGY

Survey Instruments

This appendix is included to document the entire dataset collected as part of this dissertation. This dataset is very large, and its formal analysis has not been included in this primarily qualitative ethnography. The dataset will be included in subsequent joint publications examining the intervention, strengthened with the addition of clinical data collected by the Galen implementation team.

The purpose of including quantitative surveys was two-fold. First, as qualitative methods become more popular, the validity, reliability, and generalizability of qualitative research has been of increasing concern. The NSF has developed shared standards for qualitative research (Lamont and White 2009), and methods standards published in journals as diverse as *Academic Medicine* (O'Brien et al. 2014). Although this type of standard-based approach has also been criticized (Barbour 2001), the addition of quantitative surveys enhances the validity of the conclusions drawn from this project. Using previously validated surveys permitted a standardized way of assessing the context of each hospital unit, and the triangulation of qualitative findings against the quantitative data.

The second major goal was to gain experience using commonly used measurements of safety culture. Although anthropologists do not usually consider culture a dimension to be “measured”, strong pressures for hospitals to address safety culture has led to the widespread usage of safety culture surveys (Antonsen 2012; Halligan and Zecevic 2011). However, the content of the surveys tend to be closed-ended and superficial. I wanted to

better understand what the surveys capture, and, more importantly, explore what the surveys fail to capture when compared against the qualitative data.

With these goals in mind, the final survey included six different measurements from a variety of sources. The final tool was thirteen pages, and timed to be completed in 10 – 15 minutes. The packet included the following survey instruments:

- AHRQ Safety Hospital Survey on Patient Safety Culture (HSOPS) (Agency for Healthcare Research and Quality 2014) — a commonly used 52-item validated assessment of safety culture along multiple dimensions.
- AHRQ TEAMSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) (Battles and King 2010) – a 35-item validated measurement of perceptions of teamwork of a group.
- Interprofessional Collaboration Questionnaire (Kenaszchuk et al. 2010) – a 51-item validated assessment of interprofessional teamwork.
- BMR Relational Coordination Questionnaire - a 17 item unvalidated survey designed in-house and previously deployed prior to ACU implementation at Australia.
- BMR Specific Role Clarity Questionnaire – an 8-item unvalidated in-house survey previously deployed prior to ACU implementation at EUH Midtown.
- Basic demographics– age, gender, self-identified ethnicity, and state of origin.

Sampling Strategy

Conducting survey research in clinical environments is traditionally challenging. Within the hospital environment, research participants have limited free time and patient care often takes precedence. For this study, a major challenge was the small population sizes

of each hospital unit. Assuming that an average nursing staff size of 33, a 75% response rate was needed to ensure a 5% margin of error for proportions at a 95% confidence interval (Cochran 1977).

The sampling strategy was devised to aggressively maximize response rate while preserving participant autonomy. First, I identified all personnel eligible for the study using staff rosters. Within nurses, this included all nurses with exposure to BMR (e.g., nightshift nurses were excluded). Weekend staff were only included if they worked at least one workday with BMR. Doctors were only included if they had patients assigned to the unit for BMR during the study period. Social workers and other allied health staff were excluded from this component of the study, as were nursing technicians with the exception of Unit 2B.

Second, the survey was announced at huddles and meetings, and an invitation to participate in the study was e-mailed to all personnel using a modified Dillman's total design method (R. H. Bernard 2011). In order to increase visibility for the study, the surveys were designed to be visually appealing using colorful paper and envelopes, and I often provided light snacks or refreshments. All clinical personnel meeting eligibility criteria were offered a paper or electronic survey at these meetings—for both options, surveys were self-administered and completed by participants in locations convenient to the participant, including at work or in their own homes. Electronic surveys were administered securely through Qualtrics.

All surveys returned were anonymous. However, I also maintained an encrypted list of personnel to ensure that all eligible staff members were personally offered a survey at least once. I always emphasized that the survey was independent and anonymous, and completely

voluntary. Many staff members declined to participate, and once declined, I would not approach them again.

Finally, participants were provided with either \$5 cash or a \$5 gift card as an incentive. Within the Australian context, however, key informants indicated that it would be culturally inappropriate to offer financial incentives for participation. Australian participants did not receive any incentives for participation.

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