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“I JUST NEED TO GET MYSELF SUPERVISED:” EXPLORING TRANSFORMATIVE
LEARNING IN THE DEVELOPMENT OF PROFESSIONALISM AMONG
PHYSICIANS IN THE FIRST YEAR OF GRADUATE MEDICAL EDUCATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of
Philosophy at Virginia Commonwealth University.

by

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Dedication

For my grandmother, Margaret T. Smith, in memoriam.

Acknowledgement

To the study participants, I would like to express my sincere appreciation. Thank you for allowing me to be with you during your patient care responsibilities and for taking the time to share your personal learning experiences with me. Without you, this study would not exist and I will always be grateful for your participation.

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Abstract

“I JUST NEED TO GET MYSELF SUPERVISED:” EXPLORING TRANSFORMATIVE LEARNING IN THE DEVELOPMENT OF PROFESSIONALISM AMONG PHYSICIANS IN THE FIRST YEAR OF GRADUATE MEDICAL EDUCATION

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2016

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The study explored the learning experiences of first-year resident physicians during the first year of graduate medical education. The experiences of four intern physicians in the first year of residency training at an urban academic health system provided the site for the research. An exploratory case study research design was employed to examine the learning experiences of these new physicians. A qualitative approach was used to analyze data from interviews and ethnographic observations. The findings of this research study provide evidence surrounding how and what these physician trainees learned regarding professionalism during the first year of residency training.

The findings indicate these first-year resident physicians experienced significant learning related to professionalism through incidental learning in the clinical environment, particularly from role models and the hidden curriculum. The interns learned both positive and negative professional behaviors from attending physicians. The findings illustrate the increases and decreases of confidence due to the development of clinical skills, increase in responsibilities, and

increase in autonomy experienced by all four participants across the first year of residency training. Additionally, the findings highlight the important role of critical incidents, particularly memorable patient encounters, as potentially transformative learning experiences for these interns. Finally, the findings enumerate the pervasive influence of the hidden curriculum of graduate medical education on what these new physicians learned about professionalism, particularly the unprofessional social norms transmitted through attending physicians and others within the context of clinical learning.

The findings of the research study support the conclusions that a) incidental learning experiences during the first year of residency education directly influenced how and what these new physicians learned regarding professionalism; b) these intern physicians experienced non-transformative learning during the first year of residency, but critical reflection and critical self-reflection after critical incidents did hold the potential to result in learning that was transformative; and c) the ubiquitous nature of the hidden curriculum significantly impacted what these first-year residents learned about professionalism. These conclusions contribute to the literature related to the development of professionalism in the new physician and the power of the hidden curriculum in medical education to influence professional identity development. Implications for medical educators and recommendations for future research are also identified.

Chapter I

Introduction

In addition to acting professionally, medical students at the undergraduate level and resident physicians at the graduate level are expected to become professionals (Monrouxe, Rees, & Hu, 2011). The transformation from student to physician and the development of professionalism during undergraduate and graduate medical education is imperative as it will impact the type of care physicians provide to their patients in future practice. Scholars indicate that the development of professionalism in the aspiring physician begins in undergraduate medical education and continues throughout the years of residency training before the new physician is licensed to practice independently (Cruess, Cruess, Bourdreau, Snell, & Steinert, 2015; O'Sullivan, van Mook, Fewtrell, & Wass, 2012; Stern & Papadakis, 2006).

However, few studies in the medical education literature have explored or identified the particular educational experiences that help to impart the goals of professionalism to learners in undergraduate or graduate medical education (O'Sullivan et al., 2012). Additionally, few studies have focused on the development of professionalism apart from the informal undergraduate and graduate learning experiences during training (Cruess & Cruess, 2006; Goldie, Dowie, Cotton, & Morrison, 2007; Jha, Bekker, Duffy, & Roberts, 2007). The teaching of professionalism varies significantly across institutions of undergraduate and graduate medical education and may be not be adequate in some cases (Swick, Szenas, Danoff, & Whitcomb, 1999). Therefore, it becomes essential for those who design medical education curricula to know more about the nature of the

experiences that foster the development of professionalism during the years of training to become a physician (Sidlow, 2001; Stern & Papadakis, 2006).

In the United States, medical education consists of two major components.

Undergraduate medical education (UME) is the first stage of medical education which typically lasts four years and follows the baccalaureate degree, post-baccalaureate certificate, or master's degree and precedes the doctor of medicine degree or doctor of osteopathic medicine degree (Association of American Medical Colleges, 2013). Graduate medical education (GME) is the second stage of medical education which follows the doctor of medicine degree (M.D.) or doctor of osteopathic medicine degree (D.O.) and typically lasts three to seven years (Accreditation Council for Graduate Medical Education, 2014a). Both UME and GME are requirements for licensure as a practicing physician.

During the senior year of the four years of medical school, M.D. candidates apply to residency programs through a standardized process administered by the National Resident Matching Program (NRMP). Medical students select a medical discipline in which to specialize and apply to various hospital-based residency programs across the U.S. Residency programs are offered in the primary care disciplines of internal medicine, pediatrics, and family medicine, as well as specialty disciplines such as general surgery, obstetrics and gynecology, neurology, ophthalmology, orthopedics, neurosurgery, plastic surgery, otolaryngology, urology, physical medicine and rehabilitation, and psychiatry. The residency match process is highly competitive, as there are fewer resident positions in the U.S. medical system than medical graduates. The number of M.D. graduates continues to rise as federal funding for residency positions decreases.

The Accreditation Council for Graduate Medical Education (ACGME) accredits residency programs for graduates with M.D. degrees. Depending on discipline, residency lasts

three, four, or five years. Some physicians choose to pursue further training after completing a residency through a fellowship which can be an additional one to three years. Physicians in the first year of graduate medical education, also called the intern year, are sometimes referred to as interns or postgraduate year 1 (PGY-1) residents (Dezee, Artino, Elnicki, Hemmer, & Durning, 2012).

Residency education focuses on patient care, as resident physicians work as part of a healthcare team in a hospital setting and receive compensation as hospital employees. Upper-level resident physicians and faculty clinical educators, also known as attending physicians, supervise residents throughout the residency experience. The level of supervision decreases as the resident physician rises in rank and experience after each year of training. Conversely, the level of autonomy increases as the resident moves from year to year in training. The attending physician oversees the entire healthcare team which includes medical students, interns, upper-level residents, fellows, and professionals from other disciplines, such as pharmacy and social work.

In addition to being responsible for patient care, residency programs require residents to complete other curricular requirements. Formal learning activities include presenting medical topics in various forums, attending meetings such as the discipline's regular conference and grand rounds, and presenting patient cases for varied audiences. Board exams, tests to assess a physician's readiness for licensure, and in-service exams, tests to evaluate a physician's knowledge of a specific specialty, require intense preparation which residents must complete before, after, and during their training.

Residents at each level within graduate medication education must exhibit competency in the areas of patient care, medical knowledge, practice-based learning and improvement,

interpersonal and communication skills, systems-based practice, and professionalism. While the specific milestones associated with each competency vary by discipline, each residency program details expectations for learners at each level of residency among these broad categories.

Attending physicians, fellows, residents, interns, medical students, and other members of the healthcare team evaluate residents on achieving these competencies. Promotion to the next level of residency and graduation from residency depends on successful determination of competency.

A doctor is not licensed to practice independently until completing residency training, unless the resident chooses additional training in a fellowship for a subspecialty or seeks board certification (Accreditation Council for Graduate Medical Education, 2014a). This rigorous process has remained unchanged for several decades; however, medical training was not always such an arduous and time-intensive endeavor.

In the early 19th century, medical education in the U.S. varied significantly across institutions (Dezee et al., 2012). In general, medical education focused on depth of scientific knowledge and consisted only of didactic lectures (Arey, 1976; Ludmerer, 2004). In the mid-19th century, William Osler's apprenticeship model of medical training and the clinical clerkship system was adopted by a number of institutions (Dezee et al., 2012). This model of instruction moved teaching from the lecture hall to the patient bedside and allowed students to become more active participants in the acquisition of clinical knowledge and skill (Dornan, 2005). In 1910, the Carnegie Foundation published the Flexner Report, a study of medical schools in the U.S. and Canada. This now famous study called for significant reform in medical education. Flexner (1910) proposed a model of medical education that consisted of two years of education in the basic sciences (largely didactic instruction), followed by two years of clinical experience. It was widely adopted and remained the standard for medical education for decades. As a result, U.S.

institutions of medical education implemented a curricular model that consisted of two years of basic science followed by two years of clinical experience (Irby, Cooke, & O'Brien, 2010).

One hundred years after the Flexner Report, the Carnegie Foundation again called for reform of medical education (Cooke, Irby, Sullivan, & Ludmerer, 2006) and this theme continues to persist in academia. As a result, within the past ten years, 75% of American institutions of undergraduate medical education have initiated or completed curricular reform (Dezee et al., 2012), transitioning to a more integrated model that includes active and engaged learning and clinical experiences and patient encounters earlier in the curriculum.

Graduate medical programs are moving toward a competency-based model of education (Dezee et al., 2012). In July 2013, the ACGME implemented a new accreditation system based on the measurement and reporting of outcomes termed educational “milestones” (Green et al., 2009). The overarching goal of this new system was “to create a logical trajectory of development of professionalism in essential elements of competency and meet criteria for effective assessment, including feasibility, demonstration of beneficial effect on learning, and acceptability in the community” (Nasca, Philibert, Brigham, & Flynn, 2012, p. 2). As residency programs revised evaluation processes and procedures to meet educational milestone criteria, measures of professionalism became key elements to be addressed.

As noted by Irby et al. (2010), current recommendations for curricular reform follow the Flexner Report: emphasis on standardization of the learning experience while also promoting individualization, integration, habits of inquiry and improvement, and identity formation. The suggestions for the advancement of professional identity formation are based on a general definition of professionalism and include the provision that educational curricula:

- Provide formal ethics instruction, and the meaning of traditional storytelling and symbols (honor codes, pledges, and white coat ceremonies);
- Address the underlying messages expressed in the hidden curriculum (what is conveyed informally to students as they learn to be a doctor) and strive to align the espoused and enacted values of the clinical environment;
- Offer feedback and reflective opportunities for the assessment of professionalism in the context of longitudinal mentoring and advising;
- Promote relationships with faculty members who simultaneously support learners and hold them to high standards; and
- Create collaborative learning environments committed to excellence and continuous improvement (p. 226).

These recommendations specifically outline the obligation of institutions of medical education, both undergraduate and graduate, to provide meaningful and significant experiences about the development of professionalism.

Statement of the Problem

How to best educate and develop future physicians is a perpetual topic of medical education research. In recent years, there has been increased focus and emphasis on professionalism in medicine. Inui (2003) claims the increased attention comes from a need for the discipline to separate from commercialism, which Hafferty (1998) asserts negatively affected the culture of professionalism in medicine. To combat this disconcerting trend, physicians and leaders of medical organizations began a process to reaffirm the values integral to the profession during the last thirty years. Leaders in the field have made concerted efforts to restore physicians' credibility as genuine healers, not just providers of a service commodity (Inui, 2003).

There has also been increased attention on the professionalism of medical school and residency graduates. A number of professional medical societies and organizations, including the Association of American Medical Colleges (AAMC) and the ACGME, have endorsed the need to promote professionalism in medicine through the development of professionalism in UME and GME. As described by Shrank, Reed, and Jernstedt (2004), in 1999, the AAMC disseminated a statement that outlined four attributes of professionalism for medical students by the time they graduate with the M.D. degree: altruism, knowledge, skill, and duty. As defined by the ACGME, residents must be able to:

- provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health;
- demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care;
- demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning;
- demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals;
- demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles; and
- demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to

provide optimal health care (Accreditation Council for Graduate Medical Education, 2014b).

Despite these recent accreditation requirements, current literature in medical education describes a lack of professionalism among medical school graduates as a problem needing further investigation (Irby et al., 2010). Lyss-Lerman et al. (2009) interviewed residency program directors to identify common problems faced by residents during their first year of residency training and asked whether these problems could be addressed in the fourth year of medical school. Results showed that common difficulties for first-year residents (interns) include underdeveloped professionalism behaviors such as failure to assume professional responsibility and accept ownership for patient care. Additionally, these researchers found other deficiencies, such as underdeveloped medical knowledge and a lack of effort toward self-reflection and improvement of practice skills. Existing curricula in GME residency programs are designed around checklists of professional behavior; however, this does not meet the desired goal of improving professionalism in resident physicians (Gaiser, 2009).

To address this, the AAMC recently published new guidelines that provided expectations for both learners and educators in undergraduate medical education (Association of American Medical Colleges, 2014). These guidelines included a core set of expected behaviors for all medical school graduates called core entrustable professional activities (EPAs). A key component of professionalism addressed within the core EPAs is the concept of trustworthiness. A pilot project launched in 2014 seeks to develop new curricular approaches and assessments, as well as methods for determining when a medical school student can be considered “entrustable” for performing the duties required of the learner as a first-year resident (Association of American Medical Colleges, 2014).

Purpose of the Study

The purpose of this study has been to answer timely and relevant research questions regarding the development of professionalism in the new physician during the first year of graduate medical education. According to the literature, the purpose of medical education is not only to provide future physicians with necessary knowledge and skills to treat patients, but also to impart the values of the medical profession to effectively treat patients. As noted by Cooke, Irby, Sullivan, and Ludmerer (2006), “the moral dimension of medical education requires that students and residents acquire a crucial set of professional values and qualities, at the heart of which is the willingness to put the needs of the patient first” (p. 1341).

While professionalism is discussed throughout the medical school years, it is a concept that is extremely difficult to teach explicitly. Cooke and colleagues (2006) assert that institutions of medical education and the educators within them should strive to fulfill these purposes of student development in an integrated manner and be aware that the professional values may be difficult for medical students and residents to absorb if not explicitly taught. While there is little debate surrounding the need to achieve these espoused purposes of medical education because of their potential impact on patient care, there is a significant focus and discussion about how to efficiently and effectively accomplish the goals associated with teaching professionalism during the undergraduate and graduate years (Irby et al., 2010; O’Sullivan et al., 2012). Development of professionalism appears to be a phenomenon that is largely acquired tacitly through informal and incidental learning experiences. Little is known about which learning experiences among medical students and trainees contribute to instilling professionalism as an enduring quality for the physician. This study sought to address this gap in the literature.

Theoretical Framework

Mezirow's (1991) theory of transformative learning serves as the theoretical lens for understanding learning experiences that contribute to a revised perspective on the meaning of professionalism as experienced by residents during the first year of graduate medical education. Transformative learning involves a major revision to a learner's beliefs, values, or underlying assumptions which often occurs as a result of a significant or disorienting learning experience. Transformative learning can also occur through more modest changes that accumulate over time. Mezirow asserted that significant changes to personal beliefs and value systems are most likely to occur through critical reflection or critical self-reflection on experience (Mezirow & Associates, 2000).

The development of professionalism in the medical student and the new physician requires full comprehension of what medical professionalism requires and embodiment of professional behaviors (Monrouxe et al, 2011; Swick, 2000). Transformative learning theory is an ideal framework to understand the significant learning resident physicians experience about professionalism during residency training. The phenomenon of perspective transformation described in Mezirow's (1991) theory aligns directly with the shift from a self-centered perspective to a patient-centered perspective required in the development of medical professionalism.

Overview of the Literature

The following brief review of the literature includes an explanation of transformative learning theory, the theoretical lens for this study. Additionally, I define the concepts of formal, informal, and incidental learning, as well as the hidden curriculum, critical incidents in medical education, and the development of professionalism in medical education.

Transformative Learning Theory

Mezirow's (1978, 1991) theory of transformative learning is an adult learning theory based on constructivist assumptions about how adults acquire knowledge and how adults make meaning of experience. Transformative learning is described as a rational cognitive process of individual change (Cranton & Taylor, 2012). According to Mezirow (1991), transformative learning is "the process of using a prior interpretation to construct a new or revised interpretation of the meaning of one's experience in order to guide future action" (p. 162). Adults make meaning of experiences by examining, questioning, and revising their beliefs, values, and attitudes.

Transformative learning theory centers on the phenomenon of perspective transformation, a significant shift in one's worldview or personal paradigm, not simply the acquisition of new knowledge or advanced skills (Mezirow, 1991). This shift in perspective involves critical reflection on the content, processes, and premises of an adult's assumptions of reality (Mezirow, 1991). The revision of one's worldview can be dramatic, initiated by a disorienting dilemma, or incremental, based on a number of changes that occur over time (Mezirow, 1991).

Formal, Informal, and Incidental Learning

Formal learning is intentional learning led by an instructor, sponsored by an institution, and facilitated in a formal classroom or educational setting (Merriam & Bierema, 2014).

Informal learning, another type of intentional learning, is learner-initiated and self-directed.

Informal learning can occur in many different types of environments, including some that are deemed educational, but its chief characteristic is that the learning is always learner-driven and not instructor initiated (Marsick & Watkins, 2001). In contrast to these two categories of

learning is a third, incidental learning, or learning that occurs quite accidentally for the individual

while engaged in doing something else. This type of learning appears to be a byproduct of engaging in another activity that was not sought out for its learning potential (Merriam & Bierema, 2014; Reischmann, 1986).

Professionalism in medical education has been addressed in both formal and informal settings (Hafferty & Franks, 1994). Many institutions of UME and GME have courses or formal curricular initiatives with specific course objectives and educational interventions intended to teach professionalism. In GME, formal learning experiences include morning report, grand rounds, workshops, and residency program orientation for incoming graduate medical students. Residents participate in morning report, a teaching exercise during which an attending physician or chief resident facilitates a discussion about the medical service team's admitted patients. Various medical departments sponsor grand rounds which are lectures aimed at keeping physicians, residents, and medical students up to date on important clinical topics. While professionalism often underlies these formal learning experiences, it may not be explicitly taught. While formal learning experiences are important, informal and incidental learning through patient encounters and interactions with colleagues and faculty are fundamental to the development of professionalism in GME (Swanwick, 2005).

Role modeling may be the primary mode through which professional behaviors can be learned vicariously as part of the hidden curriculum, since learners' observation of role models often occurs without the student or resident being consciously aware of the influence of the role model (Haidet & Stein, 2006). Medical students and residents learn professionalism from each other as well as from other members of the healthcare team. This has implications for faculty development and medical educator awareness of the lessons imparted to learners via informal and incidental methods during critical educational experiences. Therefore, it is important for

those in medical education to understand what is learned and how it is learned in order to improve curricular initiatives aimed toward development of professionalism.

The Hidden Curriculum

The hidden curriculum is what is conveyed informally to students as they learn (Hafferty, 1998). It consists of set of influences outside the formal curriculum that transmit cultural norms and values to learners (Phillips, 2009). The hidden curriculum either reinforces or subverts institutional rules, codes, and assumptions for learners within informal and incidental learning experiences that occur in clinical training (Wear, 1998). Medical students and residents learn from both the espoused and the hidden curricula (Gaiser, 2009). The hidden curriculum of UME and GME has been the focus of a number of studies in the medical educational literature (Baernstein, Oelschlager, Chang, & Wenrich, 2009; Bernabeo, Holtman, Ginsburg, Rosenbaum, & Holmboe, 2011; Gaufberg, Batalden, Sands, & Bell, 2010; Gofton & Regehr, 2006; Karnieli-Miller et al., 2011; Lempp & Seale, 2004; Phillips, 2009).

The effects of the hidden curriculum become evident during clerkships (when third-year medical students rotate between specialized clinics in the hospital setting) in UME and extend through internship, residency, and fellowship training in GME (Roter & Hall, 1992). The development of professionalism in values, attitudes, beliefs, and behaviors appears to be highly influenced by the hidden curriculum (Hafferty & Franks, 1994; Rogers, Boehler, Roberts, & Johnson, 2012). Hafferty (1998) contends that the hidden curriculum transmits the most influential lessons in the development of professional identity. This is important for medical educators and administrators to know and understand because what is taught via the hidden curriculum, including unprofessional behaviors, may be in direct conflict with the goals of the formal curriculum (Hafferty & Franks, 1994). Negative behaviors displayed by role models and

observed by learners in the clinical environment have the potential to contradict the goals of explicit training in professionalism.

Critical Incidents in Medical Education

Critical incidents are significant events remembered in vivid detail, often described in brief written or oral accounts in educational contexts (Brookfield, 1990). As defined by Brookfield (1990), these brief descriptions of influential experiences usually include details regarding time, place, people involved, and the reason why the event was significant. In the education setting, critical incidents can result in critical learning moments through formal, informal, and incidental learning experiences. Flanagan (1954) asserted that incidents considered critical can only be identified by the learner who attributes significance to them. Critical incident reports are concise written narrative accounts of significant events. Widely used in UME and GME to enhance learner self-awareness, critical incident reports are usually developed as reflective learning exercises (Branch, 2005). Some assert critical incident reports are an ideal mechanism to teach or evaluate professionalism because they focus on the most meaningful professional experiences (Rademacher, Simpson, & Marcdante, 2010).

Development of Professionalism in Medical Education

The medical education literature offers many definitions of professionalism. Arnold and Stern (2006) present a definition used by physicians, medical educators, social scientists, and ethicists that defines medical professionalism as a combination of fundamental abilities and aspirational principles. Arnold and Stern (2006) provide a high level framework for the concept of professionalism in medicine:

Professionalism is demonstrated through a foundation of clinical competence, communication skills, and ethical and legal understanding, upon which is built the

aspiration to and wise appreciation of the principles of professionalism: excellence, humanism, accountability, and altruism (p. 19).

For this study, I operationalized specific elements and observable behaviors from this definition.

Gaiser (2009) suggests that a comprehensive understanding of the development of professionalism is not known or consistently implemented in the curriculum for trainees in GME. However, some scholars assert that the teaching of professionalism, including the reasons for and characteristics of professional behavior, needs to be taught explicitly (Swick, 2000). Others contend that the teaching of professionalism should be approached as a moral endeavor, including emphasis on altruism and service (Coulehan, 2005; Huddle, 2005).

A typical curriculum in professionalism for residents in a GME program includes lectures, discussions, and case presentations; however, this may not be where professionalism is likely to be learned (Gaiser, 2009). Residents learn professional behaviors, both positive and negative, from role models in the clinical setting (Cruess & Cruess, 2006; Gofton & Regehr, 2006; Hojat et al., 2009). This learning, which is embedded in the context in which it will be used, can also be described as learning situated in a community of practice (Lave & Wenger, 1991). It is significant for the development of professionals because the trainee's motivation to learn can be associated with the aspiration to join the community of medical professionals (Cruess & Cruess, 2006).

Research Questions

Research questions for this study focused on the educational experiences of physicians during the first year of graduate medical education, known as the internship year. This study addressed the following research questions:

1. Which educational experiences contribute to the development of professionalism in the physician's first year of residency training?
 - a. Which formal, informal, and incidental learning experiences contribute to the development of professional behaviors?
 - b. Which experiences are most likely to result in learning that is transformative (Mezirow, 1991) for the new physician?
 - c. What are the critical incidents (Brookfield, 1990) which contribute to learning?
2. How does the hidden curriculum (Hafferty, 1998; Phillips, 2009) of medical education influence what is learned about professionalism during the physician's first year of residency training?

Methodology

This study used an exploratory case study method within a constructivist research paradigm that consisted of observations and interviews. Study participants were recruited as a purposeful sample of first-year residents at a single urban academic medical center in the Eastern U.S. Each participant's educational experience as an intern was considered a separate case within the larger bounded system of graduate medical training at this institution. Cross-case analysis led to themes that address the research questions and others that described experiential learning during this important year of a resident's education. I analyzed interview data and observational field notes using an inductive process of analysis and data reduction through constant comparison of data categories and emerging themes (Corbin & Strauss, 2008). An initial list of codes based on the ACGME Internal Medicine competency milestones served as an

a priori list of what to look for during observations. These initial codes were preliminary and led to further codes and categories based on observations and the words of the participants.

Summary

Development of professionalism in the medical student and resident physician is a relevant and timely topic in the medical educational literature (Cruess et al., 2015; Irby et al., 2010). Within medical education, limited information exists about what medical students and residents learn from informal and incidental learning encounters that are part of the hidden curriculum (Hafferty, 1998), although it appears the development of professionalism is highly influenced through formal, informal, and incidental learning experiences and the hidden curriculum (Gofton & Regehr, 2006). The first year of graduate medical education, the intern year, has long been identified as a critical juncture in the professional development of a physician because this is the first time the trainee is functioning as a “real doctor” although under the supervision of higher-level clinicians (Siegel & Donnelly, 1978). Critical incidents during the intern year enhance learning and facilitate personal growth (Branch, 2005). Additionally, as Johnson (2000) asserts, residency training can be a transformative experience in which a novice physician becomes a confident practitioner. This study explored the experiences of physicians during the first year of graduate medical education to identify which learning experiences contribute to the development of professionalism and which contribute to transformative learning for the new physician. It also examined the influence of the hidden curriculum as well as critical incidents on what and how interns learn to become professionals.

Definition of Terms

Critical incident: Brief written or spoken depictions of vividly remembered events (Brookfield, 1990).

Formal learning: Intentional learning that is typically characterized as extremely structured, occurring in a defined classroom space, sponsored by an institution, and controlled by an instructor (Marsick & Watkins, 2001).

Graduate medical education: The period of education in a residency training program, typically three to seven years, that follows the doctor of medicine degree and precedes board certification or an advanced medical degree.

Hidden curriculum: What is conveyed informally to students as they learn; a set of influences outside the formal curriculum that transmit cultural norms and values to learners (Hafferty, 1998; Phillips, 2009).

Informal learning: Intentional learning that is typically characterized as less structured, based in or outside of a defined classroom space, not usually sponsored by an institution, and controlled by the learner (Marsick & Watkins, 2001).

Incidental learning: Unintentional learning that is a byproduct of another activity such as task completion, interactions with others, or experimentation (Marsick & Watkins, 2001).

Medical professionalism: An evolving concept within the discipline of medicine that includes abilities and principles such as clinical competence, communication skills, ethical and legal understanding, excellence, humanism, accountability, and altruism (Arnold & Stern, 2006).

Resident: A physician in graduate medical education training in a residency program at an accredited academic medical center or other institution that provides formal training in patient care upon the completion of the MD degree before a physician is permitted to practice independently.

Undergraduate medical education: The period of education in medical school, typically four years, that follows the baccalaureate degree and precedes the doctor of medicine degree.

Transformative learning: “The process of using a prior interpretation to construct a new or revised interpretation of the meaning of one’s experience in order to guide future action” (Mezirow, 1996, p. 162).

Chapter II

Review of the Literature

The purpose of this study was to examine the development of professionalism in the new physician during the first year of graduate medical education. Research questions explored which educational experiences contributed to the development of professionalism, which experiences were most likely to result in learning that was transformative, and how the hidden curriculum and critical incidents of medical education influence what was learned about professionalism. The chapter includes a review of the literature in transformative learning theory; formal, informal, and incidental learning; the hidden curriculum; critical incidents; and the development of professionalism in medical education.

Method for Review of the Literature

My search strategy consisted of multiple stages in which I began with an electronic search of educational literature followed by an electronic search of medical educational literature and ended with an exploration of published dissertations. My purpose was to identify relevant literature about the selected theoretical framework of transformative learning; formal, informal, and incidental learning as applied to medical education; the literature regarding the hidden curriculum and critical incidents in medical education; and the process of development of professionalism in medical education, particularly for resident education. For each topic, I sought to obtain broad overviews, seminal works, journal articles, and books, as well as dissertations pertinent to my research questions.

Initially, I searched the educational literature electronically using the ERIC database via ProQuest. The first search included only the keyword term of transformative learning. To narrow the search results and capture seminal works, the keyword term of transformative learning was paired with author terms of Mezirow, Taylor, Dirkx, and Cranton in separate searches, since these four are major contributors to the literature on transformative learning, and, in the case of Mezirow, the originator of the theory. To narrow the search results and capture resources about transformative learning in medical education, I next searched the term transformative learning as a subject keyword in combination with the term medical as an unrestricted keyword. The terms informal learning, incidental learning, and hidden curriculum were explored as subject keywords. The results were narrowed by combining the term hidden curriculum as a subject keyword with the unrestricted term medical. The term critical incident was explored as a subject keyword. The results were narrowed by adding the author names Flanagan and Brookfield.

Next, I used the electronic database PubMed using medical subject heading (MeSH) terms in combination with relevant keywords. PubMed is a database of biomedical literature, science journals, and online books. To begin, the MeSH term “*Education, Medical, Graduate*” was used as a major subject heading combined with the unrestricted general keyword of professionalism. Then I combined “*Education, Medical Graduate*” with unrestricted general keywords of hidden curriculum and informal learning in separate searches. This search was broadened by using the higher-level MeSH term of “*Education, Medical*” in combination with the keyword informal learning.

Finally, I examined the ProQuest Dissertations and Theses Global full text electronic database with the term professionalism as a subject keyword in combination with the terms

graduate medical education or medical education. Additionally, I used the term transformative learning as a subject keyword with the terms graduate medical education or medical education.

For each of the searches, I used the abstract view to scan results and determine relevancy of the resource for my purposes. If an abstract revealed related content, I procured the full text article via the institutional database subscription or through a Google Scholar search.

Additionally, upon review of relevant primary resources and journal articles, I was able to locate additional bibliographic material pertinent to my study. The *Standards for Reporting on Empirical Social Science Research in AERA Publications* (American Educational Research Association, 2006) served as a guide for assessing the quality of resources and inclusion in the review of literature. For each of these literature streams, I provide a summary of the literature that frames this study.

Transformative Learning Theory

The theory of transformative learning as conceptualized by Mezirow has been adapted, expanded, and further defined since its inception in 1978 (Cranton & Taylor, 2012; Kitchenham, 2008; Mezirow 1978, 1991). This adult learning theory is based on constructivist assumptions, humanist roots, and critical social theory. Transformative learning has been described as a rational, cognitive process of individual change (Cranton & Taylor, 2012). Defined by Mezirow (1996), transformative learning is “the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one’s experience in order to guide future action” (p. 162). Mezirow’s theory provides a framework for understanding how adults experience significant learning that holds potential for revising beliefs, values, or assumptions that may result in a perspective transformation (Mezirow, 1991).

Development of Transformative Learning Theory

Mezirow (1978) introduced the term *transformation* more than 40 years ago during the women's movement in the U.S. in his study of women returning to work or postsecondary education after a significant time away from these environments. His study sought to identify the factors which enabled or obstructed the women's advancement in their reentry to work or school. Mezirow (1978) and his co-researchers identified ten phases these women had experienced which resulted in individual transformation, including: a) a disorienting dilemma; b) self-examination with feelings of guilt or shame; c) a critical assessment of assumptions; d) recognition that one's discontent and the process of transformation are shared and that others have negotiated a similar change; e) exploration of options for new roles, relationships, and actions; f) planning a course of action; g) acquisition of knowledge and skills for implementing one's plans; h) provisional trying of new roles; i) building of competence and self-confidence in new roles and relationships; and j) a reintegration into one's life on the basis of conditions dictated by one's perspective (Mezirow, 1978). Mezirow drew upon the works of various theorists to inform the construction of transformative learning theory. Kuhn's interpretation of paradigms; Freire's concept of conscientization, and Habermas's domains of learning influenced the specific facets of transformative learning theory (Kitchenham, 2008).

Mezirow's original theory and subsequent expansions describe transformative learning as an individual multistep process that leads to the revision of beliefs, values, or assumptions. Mezirow's theory is often presented as a linear process; however, few studies have provided evidence confirming all of these phases (Taylor, 1998). As noted by Taylor (1998), other studies "find the process of perspective transformation to be more recursive, evolving, and spiraling in nature" (p. 40).

Key Aspects of Transformative Learning Theory

According to Mezirow (1991), learning is making meaning of experience by examining, questioning, and revising beliefs, values, and attitudes. Mezirow (1991) categorizes learning as either *instrumental learning* which includes task-oriented learning about cause and effect and problem solving or *communicative learning* which includes learning what others mean when they communicate and how to interpret feelings, intentions, values, and meaning. Mezirow (1991) asserts communicative learning is the most significant learning. Additionally, based on Habermas's definition of the emancipatory domain of learning, Mezirow (1991) contends that emancipatory knowledge can develop within either instrumental or communicative learning. Emancipatory knowledge resulting from critical self-reflection has the potential to free an individual from uncritically assimilated assumptions (Mezirow, 1991).

In 2000, Mezirow revised the terminology associated with transformative learning theory to acknowledge the importance of context, emotions, and circumstance (Kitchenham, 2008). The term *meaning structures* refers to how learners interpret and understand experiences; meaning structures provide context for the adult learner to understand experiences (Mezirow, 2000). Meaning structures consist of points of view, habits of mind, and frames of reference. *Points of view* are immediate, specific expectations, beliefs, feelings, attitudes, and judgments involved in making interpretations (Mezirow, 2000). *Habits of mind* establish broad, generalized, and orienting predispositions that act as a filter for interpreting the meaning of experience (Mezirow, 2000). *Frames of reference* are the structure of assumptions and expectations including values, morals, learning preferences, and sense of self through which a learner views the world (Mezirow, 2000). Frames of reference come from the learner's culture,

language, and caregivers in childhood (Mezirow, 1991) and connect points of view and habits of mind to shape the way learners make meaning of experience.

According to Mezirow (1991), learning can occur in four ways: a) learning within existing points of view, b) learning or developing a new point of view, c) revising points of view, and d) revising habits of mind. Learning becomes transformative when meaning structures are modified to include perspectives that are open to differing viewpoints (Mezirow, 1991).

Perspective transformation requires critical reflection on the content, processes, and premises underlying the learner's assumptions of reality. Points of view are more changeable than habits of mind or frames of reference and are transformed when adult learners become critically reflective on the content of a problem or the process of problem solving (Mezirow, 2000).

Habits of mind are transformed when we become critically reflective on the premise of a problem (Mezirow, 2000). Perspective transformation requires action and can occur dramatically as the result of a disorienting dilemma or incrementally through a longitudinal series of changes in points of view (Mezirow, 2000).

Central to the theory of transformative learning are the concepts of critical reflection and critical self-reflection which are precursors to a perspective transformation (Mezirow, 1994). Most reflection occurs in problem solving; learners can reflect on the content or process of a problem (Mezirow, 1994). However, premise reflection, far less common, is the foundation for critical reflection on assumptions. Premise reflection involves examining why we hold the beliefs that form our perspectives (Mezirow, 1994). Mezirow (1991) maintains that "by far the most significant learning experiences in adulthood involve critical reflection reassessing the way we have posed problems and reassessing our own orientation to perceiving, knowing, believing, feeling, and acting" (p. 13). Critical reflection consists of objective reframing by examining the

appropriateness of our knowledge, understanding, and beliefs in a certain context (Mezirow, 1998). Further, he defines critical self-reflection as subjective reframing that occurs by analyzing the psychological or cultural assumptions upon which our perspectives are constructed (Mezirow, 1998). Critical reflection focuses on the why associated with the reasons for and consequences of our actions rather than the actual process of action. After a learner critically reflects on uncritically assimilated assumptions from an earlier period in life, the process of transformative learning culminates when the learner adopts a changed meaning structure (Mezirow, 1998). Perspective transformation is a major shift for most individuals and is not a common occurrence.

Alternative Interpretations of Transformative Learning Theory

There are varied interpretations of transformative learning theory that extend Mezirow's original ideas during more than 35 years of theory development and expansion. Mezirow's conceptualization includes a cognitive-rational approach of perspective transformation based on constructivist assumptions (Mezirow, 1991). Boyd's (1991) model of transformation is based on concepts of analytical psychology and defines transformation as a process of individuation and change within the individual. Freire's (2000) view of emancipatory education includes elements of conscientization, or the elevation of consciousness, which allows learners to become empowered with newly acquired perspectives and a sense of agency. Daloz (1999) describes transformative learning as developmental transitions guided by a mentor who develops learners in a holistic manner toward greater freedom of thought and action in the world. Other scholars, including Dirkx (1997, 2006) and Tisdell (2008), adopt an extrarational, imaginative, intuitive, or spiritual perspective of transformative learning that is based more on humanist assumptions than were originally conceived in the theory as outlined by Mezirow in 1991.

Transformative learning has regularly been considered from psychological and sociological paradigms. Recent interpretations and variations of the theory have been influenced by diverse disciplines, including theology, neuroscience, and consciousness studies (Tisdell, 2012). In addition to interdisciplinary interest, new methodologies for studying transformative learning have emerged and research designs have expanded beyond retrospective studies (Taylor & Snyder, 2012). There has also been growing insight into the role of relationships in the process of transformation. Taylor and Snyder (2012) highlight a recent study regarding identity formation that showed how the outcome of transformative learning involved the learner recognizing the reasons why, for what purpose, and for whom a new identity was constructed.

Critiques of Transformative Learning Theory

Mezirow's theory is not immune to theoretical critique. As noted by Taylor (1998), there have been a number of issues regarding transformative learning debated in the educational literature. These include: a) the relationship of transformative learning to social action and power; b) original perceptions of transformative learning as a decontextualized view of adult learning; c) Mezirow's goal of developing a universal adult learning theory; d) the assertion that perspective transformation resembles the process of adult development; e) transformative learning theory's emphasis on rationality and lack of emphasis on the affective and emotional dimensions of learning ; f) Mezirow's failure to fully address other ways of knowing, such as the intuitive, somatic, or extra rational; g) the linear nature that was proposed in outlining a disorienting dilemma as a key feature of transformative learning; and h) the relatively narrow definition of a perspective transformation, as originally described. Collard and Law (1989) asserted that transformative learning needed to be more closely associated with social action and power relationships. Clark and Wilson (1991) argued that transformative learning theory did not

appropriately account for the context of the learning event or the learner's personal context at the time of the learning. Tennant (1993) criticized Mezirow's (1991) position that perspective transformation mirrors the process of adult development by noting that the theory of transformative learning fails to recognize the socially constructed nature of adult development. While these different interpretations and critiques of the theory have divided some scholars, others, including Taylor (1997, 2007, 2008), have made an effort to document and analyze the evolution of the theory, integrate varying perspectives, identify commonalities, and call for a more unified and comprehensive theory (Cranton & Taylor, 2012).

How transformative learning occurs through formal learning situations, and whether an educator should attempt to foster transformative learning among learners have also been discussed in the literature. As noted by Taylor (2006), fostering transformative learning is not an endeavor to be taken lightly or without thoughtful consideration of the consequences. An educator should consider the ethical implications of engaging students in curricular initiatives with the aim of transformative learning. Ettling (2006) defines this ethical demand on the educator as "conscious, ongoing examination of the appropriateness of methods that are used and the implications of outcomes that are fostered" (p. 60). Since development of professionalism in undergraduate and graduate medical education is explicitly aimed toward a change in the learner or new physician's perspective rather than the acquisition of skill, medical educators and administrators are not immune from this ethical demand.

Transformative Learning in Medical Education

Transformative learning theory centers on the phenomenon of perspective transformation which is characterized as a significant shift in one's worldview or personal paradigm, not simply the acquisition of new knowledge or advanced skills. The transformative learning process

outlined by Mezirow (1991) is applicable to the learning experiences afforded to new physicians during the first year of graduate medical education, as the first year of residency is explicitly designed as an experience for learners to take on the role of physician and adopt the perspectives of a professional. As noted by Mezirow (1991), “Anything that moves the individual towards a more inclusive, differentiated, permeable (open to other points of view), and integrated meaning perspective, the validity of which has been established through rational discourse, aids an adult’s development” (p. 7). The phenomenon of perspective transformation described in Mezirow’s (1991) theory aligns directly with the shift in perspective from self-centered to patient-centered that is required in the development of medical professionalism. As such, developing professionalism may include multiple changes in points of view for a medical student or new physician before a change in meaning structures results in a shift in perspective or worldview.

Formal, Informal, and Incidental Learning

The intended consequence of a prescribed structured curriculum is formal learning. As defined by Marsick and Watkins (2001), formal learning is intentional learning that occurs in a classroom setting with instructor facilitation and institutional sponsorship. Another type of intentional learning is informal learning. Learners can experience informal learning within or outside of a defined classroom environment. The major difference is the learner controls or takes the initiative in an informal learning experience, which is not led by an instructor. Informal learning is not typically sponsored by an institution and may include a variety of self-initiated and self-directed learning efforts (Marsick & Watkins, 2001). In contrast to formal and informal learning, incidental learning is described as unintentional learning or learning that happens “accidentally” while doing something else unrelated to the learning that occurs (Reischmann, 1986). Activities such as completion of tasks, interactions with others, or experimentation can

promote and facilitate incidental learning (Marsick & Watkins, 2001). Reischmann (1986) offers a complementary term for incidental learning, *learning en passant*, which he defines as:

This type of learning cannot be produced in advance; there is nothing like a prepared curriculum; it only can be identified by looking back. Often this learning is holistic; it includes not only knowledge, but also reality-handling, emotions, valuing. By being integrated into reasonable activities it is successful without much effort (with increasing explicit effort we move over by definition to self-directed or formal learning). It uses a wide variety of support [*sic*] (people, media, objects, institutions), educationally prepared as well as natural. Often it uses and continues and reactivates and builds on previous learning. The level of threat, stress, and frustration is mostly low, or even a feeling of success, interest, thrill can be observed. This learning teaches answers as well as it opens questions when incorporating it into the set of experiences the person already has. All these situations can be used as a basis for further learning. And they can be a starting point for intentional learning (p. 5).

Examples of formal, informal, and incidental learning (learning en passant), can be found throughout undergraduate and graduate medical education. Some of these may have implications for the learning associated with development of professionalism. Mandatory events and a structured curriculum are implemented to introduce concepts of medical professionalism to learners (Haidet & Stein, 2006). In UME, professionalism events include orientations, the signing of professionalism statements, and white coat ceremonies. The UME structured curriculum includes ethics lectures, panel presentations, small group discussions, problem based learning, simulations, and written assignments. In GME, curricular initiatives include orientations, grand rounds, and workshops (Swick, 2000). However, as supported by the medical

education literature, incidental learning proves to be the most pervasive in terms of learning associated with the development of professionalism (Cruess & Cruess, 2006; Gaiser, 2009; Hafferty, 1998).

Swanwick (2005) notes that the knowledge and skills which constitute informal learning in GME are specific to the context and facilitated through an apprenticeship model. The guiding principles for the apprenticeship model include learning by doing in which the higher-level residents and attending physician serve as role models. Incidental learning in the GME environment occurs through observations and interactions with others within the clinical setting, including peers and other members of the healthcare team (Sargeant et al., 2006; Swanwick, 2005). Therefore, attention to role modeling and strategies to enhance informal learning are essential in the GME environment to observe professionalism behaviors in action (Swanwick, 2005; van Mook et al., 2009a). Differences in knowledge and skill gained through formal learning, informal learning, and incidental learning have the potential to create conflict between what is taught and what is learned. This is fully described in the literature on the hidden curriculum (Hafferty, 1998; Hafferty & Franks, 1998).

The Hidden Curriculum

The term hidden curriculum is widely used in all levels of education including primary, secondary, higher, graduate, and professional education. Jackson first used the term in 1968 in reference to primary and secondary education that often contradicted lessons in the classroom (Gofton & Regehr, 2006). The hidden curriculum is what is unintentionally conveyed to students as they learn, absorbed through many nonverbal as well as verbal behaviors and actions (van Mook et al., 2009b). In the early 1990s, the hidden curriculum began to be addressed in medical education research and literature. The most widely accepted definition of the hidden

curriculum as related to medical education comes from Hafferty (1998), who defined it as a set of influences outside the formal curriculum that transmit cultural norms and values to learners. Hafferty and Franks (1994) assert that the majority of what learners adopt in terms of values, attitudes, beliefs, and behaviors associated with ethical behaviors is acquired through the hidden curriculum.

According to Hafferty (1998), three types of curricula exist in medical education, including formal, informal, and hidden with the possibility that what students are taught will differ significantly from what they learn. The explicit values of the formal curriculum are not guaranteed to correspond with implicit values of the hidden curriculum (van Mook et al., 2009b) so that “what is ‘taught’ in this hidden curriculum often can be antithetical to the goals and content of those courses that are formally offered” (Hafferty & Franks, 1994, p. 865). Studies about the hidden curriculum in UME and GME highlight the need for institutions of medical education to acknowledge the presence of and effects of the hidden curriculum on the training of physicians.

The hidden curriculum of undergraduate and graduate medical education has been the foci of a number of studies in the medical educational literature. Studies confirm the pervasive effects of the hidden curriculum on medical education, substantiate the effects of role modeling, illustrate the hidden curriculum within the rotational model of residency training, and highlight a need for educators and administrators to consider the hidden curriculum and its effects on students and trainees (Bernabeo et al., 2011; Gaufberg et al., 2010; Lempp & Seale, 2004; Phillips, 2009).

As noted by Gofton and Regehr (2006), role modeling is a well-established, evidence-based influence on a person’s behavior and values. Therefore, relationships are critical and

highly influential factors in medical education (Haidet & Stein, 2006). Relationships in the GME setting can include student-teacher, learner-learner, doctor-patient, and resident physician-administration relationships. The type and quality of relationship can explicitly or implicitly influence professional identity formation, including the development of professionalism (Haidet & Stein, 2006). Learners adopt positive as well as negative behaviors from those around them and this may subvert the goals of professionalism education (D'Eon, Lear, Turner & Jones, 2007). As described by Gofton and Regehr (2006), "it is also well established that protégés pick up not only a role model's professional behaviors, but also their bad habits, inappropriate behaviors, and questionable attitudes" (p. 21). A number of research studies have shown a decrease in empathy in the undergraduate medical student and the resident physician and have named influencing factors that include role models (Hojat et al., 2009).

As noted by Gofton and Regehr (2006), "the knowledge of ethics transmitted through classroom discussion alone cannot be expected to guarantee the virtues society or the profession should expect" (p. 22). Karnieli-Miller et al. (2011) explicitly examined the hidden curriculum's impact on the learner's experience with professionalism. Results indicate the professional dimensions of respect, responsibility and accountability, altruism, and honor and integrity were learned in the clinical setting and the professional characteristics of excellence, leadership, and knowledge and skills were acquired in the formal learning environment.

Critical Incidents in Medical Education

Flanagan and various collaborators introduced the critical incident technique in the 1940s. Originally, this methodology was used to gain understanding of the causes of airplane crashes in World War II. As outlined by Flanagan (1954), "the critical incident technique consists of a set of procedures for collecting direct observations of human behaviors in such a

way as to facilitate their potential usefulness in solving practical problems and developing broad psychological principles” (p. 327). Critical incident technique has since become a widely implemented research tool in educational and health care settings (Dunn, 1986). Researchers use this technique to access an individual’s frame of reference in order to understand that person’s structures of understanding and interpretive filters (Flanagan, 1954). As noted by Dunn (1986), researchers use critical incident technique to “identify those activities essential to good practice in a profession and as a tool to delineate the competencies needed by the members of the profession under study” (p. 207). Flanagan’s critical incident technique serves as the foundation for other scholars’ work and the development of additional methodological tools.

Brookfield (1990) defines critical incidents as brief written or spoken depictions of vividly remembered events. He developed the critical incident questionnaire as a method for exploring how students experience learning and teaching (Brookfield, 1995). The questionnaire includes five questions which require learners to reflect on experiences in the classroom. Learners identify their most engaged moment, their most distanced moment, the most affirming action, the most puzzling action, and what surprised them most about the learning experience (Brookfield, 1995). Instructors review the completed questionnaires to gain insight into learners’ experiences, identify potential issues, and modify teaching practices.

Critical incident technique and critical incident reports have become increasingly popular in medical education at both the undergraduate and graduate levels. In this setting, critical incident reports are brief written narrative accounts of significant professional experiences of medical students or residents (Branch, 2005). Medical educators use these reports to facilitate learners’ critical reflection on their values and attitudes as well as their professional behaviors.

In this respect, critical incident reports can be used to teach or evaluate professionalism in medical students and residents (Rademacher, Simpson, & Marcdante, 2010).

Development of Professionalism in Medical Education

The transition of student to physician and the development of professional identity has been a persistent topic for medical education research. Physician identity formation has been studied and explored through various lenses including: a) the doctor-patient relationship, b) the student-teacher relationship, c) socialization, d) bioscience theories and learning theories, e) socio-cultural theories, f) professional development theories, g) institutional value-based culture, and h) constructive-developmental theory and the literature on self-authorship (Arnold, 2011; Aultman, 2005; Bernabeo et al., 2011; Blesofsky, 2007; Galper, 2002; Haidet & Stein, 2006; Hodges & Kuper, 2012; Viggiano et al., 2007).

The development of a medical identity is comprised of what experiences the learner brings into the medical education setting, what the learner is exposed to during training, and what identity the learner embodies at the end of the educational endeavor or training (Mendel & Green, 1965). In GME, when residents take on new professional roles and responsibilities, they must overcome personal and professional challenges, as they are no longer medical students but not yet fully trained physicians (Apker & Eggly, 2004). As noted by Mizrahi (1986), the years of internship and residency in GME are critical in professional identity development because new physicians begin to discover their professional consciousness during their first experiences with hospital-based clinical practice as an M.D. as well as their first experiences as a hospital employee.

Medicine has a number of traditions, ceremonial rituals, and rites of passage to facilitate the development of professional identity; however, this alone is not sufficient. As noted by

Gofton and Regehr (2006), “there is little evidence to suggest the rituals of medical orientation contribute in any meaningful way to the development of ethical values” (p. 22). Early research asserts medical trainees acquire professional attitudes and behaviors through a process of socialization (Bloom, 1963). In a seminal 1961 study described in *Boys in White*, Becker, Greer, Hughes, and Strauss (2007) examined how undergraduate medical students become doctors and adopt medical values through interactions with peers and role models. In a longitudinal study using observation and interviews, Mizrahi (1986) identified resident physicians’ perspectives about patients as originating from various sources, including reinforcement from peers rather than attending physicians, and influences of structural and contextual factors in the clinical setting. Mizrahi (1986) found the hierarchical structure of residency training and the contextual factors of the hospital in which they worked contributed negatively to interns’ professional identity. Interns felt degraded due to loss of control of their personal lives, considered themselves exploitable labor due to the extremely long hours and disproportionate compensation, and identified themselves as having low status (Mizrahi, 1986).

In the 1990s, there was a call to formalize the teaching of ethics in medical schools to ensure appropriate development of professionalism in graduates (Hafferty & Franks, 1994). The medical education literature of the time highlighted a need for faculty development initiatives to address the hidden curriculum that pertained to development of professionalism among students and trainees (Hundert, Hafferty, & Christakis, 1996). Additionally, some scholars indicated a need for reconsideration of hospitals as teaching spaces to become learning spaces (Hundert et al., 1996).

The foundation for development of professionalism begins in undergraduate medical education and continues through postgraduate training (Hilton, 2004; Stern & Papadakis, 2006).

Medical professionalism includes clinical competence, communication skills, ethical and legal understanding, excellence, humanism, accountability, and altruism. Clinical competence is defined as advanced scientific knowledge and competency in clinical skills (Arnold & Stern, 2006; Thomas, 2009). Communication skills include the ability to effectively communicate with patients and families as well as with colleagues as evidenced by verbal communication, including speaking and listening; nonverbal communication including gestures, facial expressions, and body posture; or written communication with patients and other healthcare providers (Klamen & Williams, 2006; Thomas, 2009). Ethical and legal understanding is a commitment to ethical principles evidenced by securing informed consent, protecting patient confidentiality, disclosing difficult information appropriately and sensitively, and withholding or withdrawing care as appropriate for the condition or expressed wishes of the patient or legal decision makers (Kao, 2006; Thomas, 2009). A commitment to excellence, shown by honesty and integrity in dealing with others, is also an important aspect of professional behavior (Thomas, 2009). Another important quality much discussed in medical education is humanism, or a respect for others demonstrated by empathy and cross cultural sensitivity (Thomas, 2009; Veloski & Hojat, 2006). Other qualities associated with professionalism include accountability or a sense of duty that is demonstrated by interprofessionalism, shared decision making and ongoing development of skills and knowledge (Thomas, 2009; Veloski & Hojat, 2006), and altruism, the responsiveness to patient care that can be seen in compassion and consideration of others that supersedes self-interest (Thomas, 2009).

Today's undergraduate and graduate medical education programs all have policies that define professionalism, with most institutions adopting professionalism review committees to address major issues of unprofessional behavior reported of trainees. Teaching professionalism,

according to Stern and Papadakis (2006), can be divided into: a) setting expectations which includes white coat ceremonies, orientation sessions, policies and procedures, and codes of conduct; b) providing experiences which include the formal curriculum, ethics courses, the hidden curriculum, and role models; and c) evaluating outcomes which includes assessment by faculty, peers, and patients.

Summary

The chapter outlined key literature from the educational and medical educational literature in the areas of transformative learning theory; formal, informal, and incidental learning; the hidden curriculum; critical incidents; and the development of professionalism in medical education. The literature on transformative learning theory (Cranton & Taylor, 2012; Mezirow, 1991) provides evidence that it is an appropriate theoretical lens to consider the educational experiences of resident physicians during their first year of graduate medical education. The literature about formal, informal, and incidental learning indicates that all three of these types of learning occur in graduate medical education and any of these may have important implications for the development of a professional identity among first-year residents. The literature on critical incidents shows how the development of professionalism can be examined through and examination of critical learning moments during graduate medical education. Undoubtedly, the hidden curriculum in medical education is a pervasive factor in the development of physicians, as illustrated by the large body of work that has accumulated in this area of study. Finally, the literature and research on the development of professionalism among physicians emphasizes a current need to explore the learning experiences that contribute to this important aspect of what it means to be a doctor. These literature streams provide the theoretical foundation upon which my

study examined the learning experiences of first-year residents, or interns, in the early part of their careers as physicians.

Chapter III

Research Methodology

Each approach to research (e.g., quantitative, qualitative, and mixed methods) requires a research paradigm, a research design, and specific research methods (Creswell, 2014).

Qualitative research methodology allows for understanding meaning, context, process, and identification of influences that affect the research endeavor (Maxwell, 2005). The process of qualitative research “involves emerging questions and procedures, data typically collected in the participant’s setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data” (Creswell, 2014, p. 4). The case study approach is the preferred method when exploring a phenomenon that is inextricably linked to the context in which it occurs (Yin, 2009) and is the most common method to study perspective transformation (Merriam & Kim, 2012). This type of inquiry allows for an inductive process of discovery not common in medical education research, but required when exploring the highly individualized learning experiences associated with the development of professionalism.

As described by Creswell (2014), the qualitative researcher serves a number of roles and carries out specific tasks throughout the research process: a) the researcher positions herself thoughtfully within the study, keeping in mind her personal values; b) the researcher focuses on a single concept, studies the context and setting of the concept, and collects participants’ meanings about the concept; and c) the researcher collaborates with participants to make interpretations of the data and strives to validate the accuracy of findings. The chapter will introduce the research

paradigm for my study and the research methodology used for studying the learning experiences associated with the development of professionalism among first-year resident physicians.

The Research Paradigm

The research study exists within a constructivist paradigm with assumptions regarding the nature of reality, the relationship of the knower and the known, the possibility of generalization, the possibility of causal linkages, and the role of values as described by Lincoln and Guba (1985). A constructivist paradigm asserts reality is constructed by the individual, therefore, multiple realities are possible. Knowledge and the person owning the knowledge are indistinguishably linked within this paradigm. This worldview also assumes generalizability depends on time and context and that causal relationships are not able to be identified due to the constantly changing nature of constructed reality. Finally, this paradigm asserts inquiry is inherently laden with value (Lincoln & Guba, 1985). Each of these assumptions influenced the research process.

The research study site is the natural setting for the individual experiences of first-year resident physicians. To expose the reality constructed by individual participants, I employed an emergent design which allowed for flexibility in data collection in order to capture the nuanced detail of individuals' experiences. The participants' reporting of their experiences was supplemented by significant observational time in the "field." My observations in the clinical setting in which interns spend so much of their time permitted me to grasp the significance of what they were learning about patient care and the role of the physician as well as observe professionalism in action.

The Research Design

As noted by scholars, the case study method is the method best suited to answer how and why research questions (Creswell, 2014; Merriam, 1988; Yin, 2009, 2012). Therefore, I used an exploratory case study design for this inquiry, based on the works of Stake (1995) and Yin (2009, 2012). Differing definitions of *case* exist in the research literature. Some define it as the process of conducting the inquiry or the product of the research (Merriam, 1988; Stake, 1995); however, most scholars define the case as the unit of study bounded by time and activity (Creswell, 2014). For the study, the participants were considered individual cases within the bounded entity of the first year of the residency training program at a particular academic medical center. The research method involved a cross-case analysis (Corbin & Strauss, 2008) among study participants that allowed me to compare and contrast individual experiences, but also capture the overall flow of the daily routine in the life of an intern.

The focus of a case study is process rather than outcome, and the case study method allows the researcher to gain deep insight and understanding of individuals within a particular situation. The intention was to expose the complexity of a single case within the setting, and to discover the intricacies of processes, as well as the influence of contextual factors (Check & Schutt, 2012; Merriam, 1988). As noted by Yin (2009), case study design is especially applicable in settings where the variables are inextricably linked to the context in which they occur. This characteristic makes it particularly pertinent to the exploration of the development of professionalism in the new physician engaged in learning activities within the hospital-based educational setting. It is imperative for researchers employing the case study method to emphasize nuanced details and characteristics of the environment and participants, the chronology of events, and the individual as a whole in order to adequately answer research

questions (Check & Schutt, 2012; Stake, 1995). The case study method, in conjunction with the constructivist research paradigm, allowed for an indepth exploration of individual experiences of participants in the study as well as a collective understanding of what the first year experience is like for a new doctor still in training.

The goal of my study was to provide an indepth analysis of cases bounded by location, time, and activity. This exploratory goal did not include evaluation of an intervention. Following Stake (1995), my study examined the story of the learning about the development of professionalism as experienced by resident physicians during their first year of residency training.

The Research Questions

My research study addressed the following research questions about the first year of graduate medical education, known as the intern year of residency training or the first post-graduate year (PGY-1):

1. Which educational experiences contribute to the development of professionalism in the physician's first year of residency training?
 - a. Which formal, informal, and incidental learning experiences contribute to the development of professional behaviors?
 - b. Which experiences are most likely to result in learning that is transformative (Mezirow, 1991) for the new physician?
 - c. What are the critical incidents (Brookfield, 1990) which contribute to learning?

2. How does the hidden curriculum (Hafferty, 1998; Phillips, 2009) of medical education influence what is learned about professionalism during the physician's first year of residency training?

For the study, I defined professionalism in terms of the ACGME and the American Board of Internal Medicine (ABIM) milestones delineated for training of residents in the discipline of internal medicine. Similar interpretations exist for surgical residents. According to milestone competencies, a first-year resident physician is expected to: a) accept personal errors and honestly acknowledge them; b) demonstrate empathy and compassion to all patients; c) respond promptly and appropriately to clinical responsibilities, including, but not limited to, calls and pages; d) carry out timely interactions with colleagues, patients, and their designated caregivers; e) dress and behave appropriately, according to the standards set by the institution; f) maintain appropriate professional relationships with patients, families, and staff; g) ensure prompt completion of clinical, administrative, and curricular tasks; h) recognize the scope of his or her abilities and ask for supervision and assistance appropriately; i) treat patients with dignity, civility, and respect, regardless of race, culture, gender, ethnicity, age, or socioeconomic status; and j) maintain patient confidentiality. In the study, these 10 criteria served as the characteristics of what constitutes professionalism, and similar standards exist with all residency program disciplines.

Description of the Research Site

The site selected for this research study is a large, urban, academic health system in the Eastern U.S. with nationally-ranked graduate medical education programs. For purposes of this study, the institution is known as the pseudonym Urban Academic Healthcare System or UAHS. The Internal Medicine Residency Program at UAHS was selected as the initial pool for

participants not only because of its large number of residents and potential study participants, but also because it has well defined educational programming with curricular emphasis on the GME milestones, including professionalism. Difficulties in recruitment from the Internal Medicine Residency Program meant that I needed to expand my recruitment to other specialties, an aspect of emergent design permitted within qualitative research. The decision to expand the participant recruitment pool was discussed and approved by my dissertation committee.

The learning environment for new physicians.

UAHS is an urban, comprehensive academic medical center in the Eastern U.S. which includes a Level I trauma center, a dedicated cancer center, a children's hospital, and five health sciences schools including allied health professions, dentistry, medicine, nursing, and pharmacy. The health system's culture is steeped in history and tradition, as it has existed in some form for over 175 years. The medical school and health system serve the surrounding city and counties, the state, and the mid-Atlantic region of the U.S. Historical buildings retrofitted for education and medical services stand next to modern, state-of-the art hospital, education, and research buildings.

The UAHS main hospital is located in a downtown setting with outpatient ambulatory clinics located adjacent to the hospital and inpatient services with hospitalized patients. Navigating the streets surrounding the intricate web of buildings can prove difficult even for those familiar with UAHS. Massive buildings are connected to one another with bridges and complicated numbering of floors (e.g., the second floor of one building connects to the fifth floor of another). While ample signage exists, patients continuously ask for directions from people they meet in the bustling hallways. The first obstacles for an intern when beginning residency at UAHS are to learn the most efficient way to navigate between the hospital and home, between

the maze of buildings, and to locate patient rooms, as they can be spread far and wide across multiple hospital buildings.

The cohort of interns who begin work on July 1 each year is collectively known as the intern class. This group of co-learners develop professional and personal relationships throughout the years of residency training. Residency programs coordinate formal orientation sessions, informal social gatherings, and formal training events for each residency class. A formal orientation occurs each year in the weeks prior to July 1. Upper-level residents, called chief residents, facilitate orientation sessions for the intern class, sharing information about the residency's policies, curricula, and other essential information. General topics typically include online resources, virtual pagers, telephone and paging systems, and the use of electronic medical record (EMR) system, as well as how to navigate the campus.

The EMR contains patients' health-related information in digital format and is stored within a computerized health system. Physicians use the system to access a patient's records with medical history, submit notes describing each patient encounter, and order tests. Computerized health systems and EMRs vary by hospital system; therefore, the difficulty of learning these systems depends on where an intern attended medical school and whether that institution used the same computerized health system at UAHS. Interns and other members of the team access EMRs at computer stations within the hospital environment. Some computers are stationary at workstations and in team rooms while others are mobile on carts with wheels. On rounds, the group attending to the patient often moves through the hallways with the mobile computer for accessing records and laboratory results.

Intern orientation also introduces the role of the intern and the structure of medical teams to the intern class. Typically, a team includes one attending physician, one upper-level resident,

and one to two interns. Some teams include a pharmacist and pharmacy or medical students. Interns work directly with varied professionals at multiple levels within the hospital setting. Physicians work collaboratively on medical teams. While interns may look to a fellow intern for advice or empathy, they may look to upper-level residents and fellows for guidance, and then look to attending physicians for final approval. Interns also get input and assistance on patient cases from other learners including medical students, pharmaceutical students, dietetic students, and social work students. Additionally, interns benefit from guidance provided by residents and faculty in other specialized disciplines. While a new class of resident physicians begins each July and leaves three to five years later in June, the nursing and ancillary staff remain. This group of professionals remains relatively constant in an environment which sees rotating physicians and patients. To maximize the learning experiences presented in the clinical setting, the resident physician must successfully interact with all members of the healthcare team in the hospital.

Finally, intern orientation includes an overview of daily responsibilities, admission and discharge procedures, code blue responsibilities, death pronouncement procedures, calling physicians in other specialties for consults, handoffs, and schedules. Discharge planning requires an intern work collaboratively with social workers and care coordinators to ensure patients have the appropriate support and resources for care after hospitalization. A code blue indicates a patient needed immediate medical attention or resuscitation and interns are responsible for assisting the resident running the code. If necessary, an intern may need to pronounce a patient dead and report the event to the attending and upper-level resident.

Calling consults requires clear communication. An intern must understand the reason for calling a physician from another specialty to consult on a patient case and convey that reason to

the other physician clearly and concisely. Depending on the patient case, interns may need to call for a consult from cardiology, gastroenterology, renal, infectious disease, hematology-oncology, pulmonary, intensive care, surgery, or other services.

Typically, the chief residents are in charge of scheduling for residents. There are several schedules for interns, including specific schedules for conferences, clinic, and wards. The term “conference” refers to formal learning sessions usually facilitated by an attending physician or other clinical faculty member.

The language of graduate medical education.

In graduate medical education, learning to use and understand the meaning of terms, acronyms, and language is vital for successful entering into the profession. As with any community of practice, language performs a unique role to orient the learner, aid efficiency in communication, and provide meaning for insiders (Wenger, 1998).

The term “clinic” refers to outpatient medicine for ambulatory patients during which an intern sees patients in a doctor’s office setting. In the outpatient clinic setting, residents see patients independently according to the clinic schedule and then follow up with an attending physician for approval. Some attending physicians see the patient after the resident and before giving approval while others simply sign off on the resident’s assessment and patient management plan. Residents present patient cases individually to the assigned attending physician.

The term “wards” refers to inpatient medicine for hospitalized patients during which an intern serves on a medical team. Some also refer to this as being “on service” which means on a team for a hospital service that sees hospitalized patients. In recent years, the ACGME limited the work hours of resident physicians to 80 hours per week to address the patient safety risks

associated with the sleep deprivation of healthcare providers. A shift for an intern cannot exceed 16 hours and a shift for a second-year or third-year resident cannot exceed 24 hours. The shifts define the hours associated with patient care and do not explicitly factor in time for other curricular activities or study time. At the end of a given shift, interns transfer responsibility for patient care to another intern or resident physician. This transfer process from one shift to the next is called a handoff. Included in the handoff is the transmission of essential information about each patient. The dissemination of this significant information is called signout.

Handoffs require clear communication and collaboration, as they are one of the most important aspects of patient care. It is imperative that interns involve the nursing staff, as they may offer valuable insight and opinions. Signout should always include code status, allergies, bed location, important aspects of the patient's history of present illness, past medical history, and physical exam, as well as key medications, changes in the treatment plan, and any anticipated problems. Handoffs should always be face-to-face and not conducted over the telephone. All handoff procedures and signout requirements aim to ensure patient safety.

In the inpatient hospital setting, residents see patients independently before rounding with the medical team. Rounds or rounding is the term used to describe the medical team's process of reviewing each patient case. Typically, the attending physician leads rounds and the resident physicians and medical students take turns presenting the patient cases for which they are responsible. The format of rounds depends on the attending physician's preference or the residency program's directive. Sometimes rounds occur at the patient's bedside or in the hallway outside the patient's room. Other times, teams conduct table rounds where all patient cases are presented in the team room prior to the team going to each patient room. The style of rounding is also attending-specific or discipline specific. Some teams conduct family-centered

rounds which focuses on patient and family involvement in the treatment plan. Regardless of style, rounds occur daily and usually first thing in the morning. Residents also systematically review patient cases during handoffs when they give signout to their counterparts.

Daily responsibilities for an intern working on an inpatient hospital team include arriving early to receive signout from the night intern, checking morning laboratory results, and seeing all assigned patients to note any significant overnight events. The intern then places urgent orders for medications or treatment plans, telephones any needed consults, schedules urgent procedures, places non-urgent orders, completes discharge planning, starts patient encounter note documentation, and updates the signout. The intern participates in rounds with the entire team including the attending physician. After rounds, the intern continues to complete tasks associated with patient care and perform any necessary procedures. At the end of the day, the intern provides signout to the night float intern. Before leaving the hospital, the intern switches over the virtual pager which completes the handoff.

Resident physicians work in team rooms when not at the patient's bedside, in the patient exam room, or rounding with the team in the hallway. The features and amenities of the team room depend on location and service. Some locations have spacious and bright team rooms with ample chairs, quality furniture, functioning computers, and organized bulletin boards or whiteboards. Other locations have windowless team rooms plagued with clutter and cramped workstations while lacking adequate seating and comfortable temperatures. While they may differ significantly in physical appearance, all team rooms are bustling with activity and are rarely empty. Residents use team rooms to eat, study, prepare for patient care, put in orders for medications or treatments, return telephone calls, complete patient encounter notes, and nap. Interactions in the team room range from casual conversation between colleagues to formal table

rounds led by attending physicians. In these private rooms, teams can openly discuss patient cases while respecting patient confidentiality.

The extremely diverse patient population at UAHS provides varied patient care experiences for doctors in training. The UAHS patient population includes insured and uninsured patients, non-English speaking patients, homeless patients, and patients from surrounding areas of the city and state. A resident physician must be able to adapt to unpredictable patient encounters based on variable factors. While the distinctively diverse patient population provides breadth and depth in clinical learning, it can also be a challenge for a physician in training who was not exposed to a population such as this one during medical school.

Description of the Study Participants

To gain access to potential participants at a particular site or within a bounded system, researchers often coordinate with formal and informal gatekeepers (Seidman, 1998). Formal gatekeepers oversee the operations of the site or program (Lincoln & Guba, 1985), while informal gatekeepers may be self-appointed or granted informal power by the rest of the group to which they belong (Seidman, 1998). It is essential for researchers to identify gatekeepers before contacting potential participants directly, as failure to do so may negatively impact the recruitment of participants or status of the research study.

For the study, I identified two formal gatekeepers. The first gatekeeper, the Director of the Internal Medicine Training Program, was responsible for overall oversight of the internal medicine residency program. The second gatekeeper, the Internal Medicine Chief Resident, is charged with oversight of the first-year residents during the intern year. I worked with both

formal gatekeepers to introduce my study to all internal medicine first-year residents and recruit participants.

Each year, the internal medicine residency program at UAHS accepts approximately 50 first-year residents. Of these, approximately 30 new physicians are accepted into the categorical program of study. A categorical resident specializes in internal medicine and completes all four years of residency training at UAHS. The remaining 20 new physicians are accepted into the preliminary program of study. A preliminary resident will specialize in another discipline after completing one year of internal medicine training and may or may not complete the remaining residency training at UAHS. The study did not differentiate between categorical and preliminary first-year residents (interns) since it was assumed that either could speak to the development of professionalism as a new physician. The other residency programs at UAHS accept intern classes ranging from a single resident to as many as 50 residents.

With permission from the formal gatekeepers for the internal medicine residency program, as well as prior Institutional Review Board approval, I announced my study at a session during intern orientation in July 2014 at which all first-year internal medicine residents were present. After presenting an overview of the study and what participation would entail, I left materials with my contact information for those who were interested to contact me. I followed up via email to individual residents when I received an inquiry.

The initial recruitment efforts resulted in one participant volunteering for the study. After consulting my dissertation research committee, I decided to employ additional recruitment efforts, with little success. After six months of data collection from the one participant, I identified five additional potential participant pools, other specialties at UAHS, from which to recruit and the five associated formal gatekeepers with these residency programs. I met with

each of the residency program directors and obtained permission to recruit the first-year residents in their respective medical specialties. I recruited through emails by mailing recruitment materials and presentations at group meetings. The additional recruitment efforts resulted in three additional participants who volunteered for the study. Despite extensive recruitment efforts, my sample size remained at four. Participant recruitment was particularly difficult because of the overwhelming demands on the new physician during the first year of residency, including the increased patient care responsibilities, the 80-hour workweek, and serving in the role of new and most inexperienced doctor on the medical team.

As noted by Patton (1990) and Creswell (2014), there are no formalized rules dictating sample size in qualitative research. Sampling and sample size depend on a number of factors including the qualitative design, the purpose of the study, the research questions, the logistical constraints of the research project, and the available pool of potential participants. For this research study, the goal was to explore the learning experiences of first-year residents in graduate medical education; therefore, depth of data was preferred over breadth of data (Patton, 1990). A sample of four participants provided reasonable coverage of the educational experience that described the development of professionalism during the first year of residency education. A screening interview using the protocol shown in Table 1 was used to gauge the ability of the first participant to articulate his learning experiences (Creswell, 2014). This screening interview was not recorded and was used only to assess the suitability of a potential participant. After the screening interview, I felt comfortable that the first participant would make a suitable candidate for participation in the study and I invited him to join the study. The screening interview protocol was not used for the remaining three participants, as their enthusiasm and ability to articulate their experiences were evident from initial contact.

Table 1

Screening Interview Protocol

Type	Content
Introduction	The purpose of my study is to explore residents' educational experiences in the first year of graduate medical education. Today, to determine whether your participation in this study is likely to be worthwhile for us both, I need to ask you a few questions that will help both of us determine whether to go forward. Are you okay with this approach?
Question 1	For this study, I am interested in your learning experiences during the first months of residency. Is this a topic that you think you can discuss with me in detail over the next few months, and is this a topic that you are willing to explore in some depth?
Question 2	As you begin your training as a resident, what do you think others expect of you in terms of learning?
Question 3	Do you consider learning a difficult topic to discuss? What is it about the nature of learning that makes it difficult to discuss if you think it is?
Question 4	As this research study proceeds, I am going to be interested in the types of learning experiences that cause you to think differently in the situation in which you are now working as an intern. Do you think that this is something that you will be able to reflect upon and describe to me?

Due to the limited size of the sample, the participant characteristics were not as diverse as I had hoped. All four participants were men in their mid-twenties. Two came from primary care specialties and two came from surgery. Three earned their M.D. degree from the medical school associated with UAHS and one attended medical school in the Midwest. I knew three of the participants from their years in medical school and credit this as contributing to their willingness to volunteer to participate. My prior acquaintance enabled me to have authentic and relatively uncensored dialogue with these participants, a clear advantage in this type of study.

All four study participants attended accredited U.S. medical schools and entered residency at UAHS in July 2014. Dr. Reed Richards responded to the initial recruitment efforts in June 2014. Dr. Hank McCoy, Dr. Andrew Nolan, and Dr. Edward Nygma responded to the additional recruitment efforts and volunteered to participate in the spring of 2015. Table 2 displays specific characteristics of age, gender, race, marital status, medical school location, degree(s), residency discipline, number of observations, and number of interviews.

Table 2

Participant Characteristics

	Dr. Hank McCoy	Dr. Andrew Nolan	Dr. Edward Nygma	Dr. Reed Richards
Age	27	27	28	26
Gender	Male	Male	Male	Male
Race	White	White	White	Asian
Marital Status	Married	Married	Single	Single
Medical School Location	East	East	Midwest	East
Degree(s)	M.D.	M.D.	M.D. M.P.H.	M.D.
Residency Discipline	Surgery	Surgery	Primary Care	Primary Care
Hours of Observation	7 hours	15 hours	22 hours	24 hours
Number of Interviews	2	3	3	4

During the 12 interviews, which ranged from 30 minutes to 45 minutes each, the participants expressed varying opinions regarding the first year of residency training and provided detailed accounts of their individual learning experiences. Additionally, I spent approximately 68 hours in the clinical learning environment within the hospital context while observing the professional behaviors of each participant as they performed patient care and completed curricular requirements.

Data Collection Procedures

The data collection in qualitative studies should aim to be holistic and comprehensive (Merriam, 1998). The research tools of observation and interview are regularly employed in various types of case studies and were employed in the study. Based on the guidelines described by Stake (1995) and Yin (2009, 2012), data collection methods were varied and conducted over a defined period of time. To minimize the potential for participants to provide socially desirable answers to interview questions or modify their behavior in the clinical learning environment, I did not reveal how observations or interviews would reflect on the development of professionalism. Rather, I characterized the study as an indepth exploration of learning during the first year of residency training. For the study, data collection was anticipated to last six months; however, this period was extended to 13 months to achieve data saturation and collect sufficient data to answer the research questions (Patton, 1990).

Observations

As noted by Mizrahi (1986), observations of physicians in the clinical setting provides an opportunity to capture interactions between resident physicians and their mentors, collegial processes within groups of residents, interactions between resident physician and patient, and the effects of culture and context on training. For my study, settings for observation included both

outpatient and inpatient areas of the hospitals. I also had the opportunity to attend departmental meetings and other presentations. I observed the study participants during pre-rounds, rounds, clinic, handoffs, intern reports, group and individual patient encounters, conferences, and grand rounds. Most of these occasions also included their interactions with attending physicians, other residents, and members of the healthcare team. All of these settings allowed me to observe both supervised and unsupervised behaviors.

During participant observations, I took on the role of overt observer rather than covert observer, participant observer, or covert participant (Check & Schutt, 2012; Patton, 1990). The participants and others at the research site knew I was observing for a research study about learning during the first year of residency; however, neither participants nor others in the clinical learning environment knew I was observing professionalism. I kept notes during the observation process and expanded on those initial observations when I composed formal field notes after each observation encounter. As noted by Patton (1990), an observer is incapable of recording every detail of an observation therefore, the observation data collected should be focused into defined areas. For my study, field notes included descriptions, comments made by study participants to me or to others in the setting, and my own observer comments related to: a) the participants, including their body language and attitudes; b) the environment, including the physical setting and how participants moved within the physical environment; c) the interactions among participants, other healthcare professionals, and patients within the setting; d) the formal and informal conversations among participants, other healthcare professionals, and patients within the setting; and e) any significant events that occurred during my observations (Check & Schutt, 2012; Merriam, 1998).

Interviews

The interview is the fundamental method used to gain insight into participants' individual experiences, perceptions, thoughts, and feelings (Weiss, 1994) and the meaning they make of certain experiences (Seidman, 1998). In qualitative research, participant interviews can be described as purposeful conversations between researcher and participant (Check & Schutt, 2012). Interviewing participants directly aligns with the goals of this research study including developing detailed descriptions of individuals' educational experiences and describing the process of development of professionalism in this specific context. As suggested by Merriam (1998), some of the interviews occurred after observations in order to further explore and clarify actions and events that occurred during observations.

It is critical for a researcher to be deliberate in terms of how questions are asked, the order in which questions are asked, and which questions from the interview protocol are asked. As suggested by Check and Schutt (2012), the interview protocol started with high level, global, and low risk questions about the educational environment and experience and did not include leading questions, yes-no questions, or double-barreled questions. Additionally, as detailed by Merriam (1998), some follow up questions were interim interpretations of what has already been revealed during observations or previous interviews, or probes to explore in more depth an aspect of participant experience.

Interviews for the study were semi-structured with open-ended questions in order for the participant to be expansive about his experiences. Table 3 outlines the questions for both the initial and subsequent interviews.

Table 3

Interview Protocol

Initial Interview		Subsequent Interview	
Question 1	Tell me about what your first weeks/months as a resident have been like. What have you learned?	Question 1	Tell me about any major events that you have experienced since we last met.
Question 2	During your first weeks, have there been any significant incidents that have caught you by surprise in terms of something you didn't know?	Question 2	Since we last met, have there been any significant incidents that have caught you by surprise in terms of something you didn't know?
Question 3	When you think about learning in the clinical setting, who are you learning from?	Question 3	When you think about learning in the clinical setting, who are you learning from?
Question 4	When you think about learning in the clinical setting, what sort of things are you learning?	Question 4	When you think about learning in the clinical setting, what sort of things are you learning?
Question 5	When I observed you, I noticed _____. Tell me about what happened.	Question 5	When I observed you, I noticed _____. Tell me about what happened.

Interview questions focused on perspectives; however, the questions were flexible, iterative, and continuous as described by Rubin and Rubin (1995).

During the interview process, researchers must be aware of the inherent power differential created by the act of questioning (Check and Schutt, 2012). To ameliorate the effects of this inevitable power structure, I maintained a comfortable distance between myself and the participant, maintained eye contact, kept the questioning at a conversational and appropriate pace, allowed breaks as needed, and closed the interviews gently. I also attempted to dress in a

manner comparable to clinicians at work, even though it was obvious at times that I was the one without the white coat.

I coordinated directly with the participants to gain access for face-to-face interviews. These were scheduled at a time and in a quiet location convenient to participants. I used a digital recorder for interviews (Patton 1990; Seidman, 1998; Weiss, 1994) and I secured the services of a professional transcriptionist to create verbatim written transcripts of each interview.

Data Analysis Procedures

I conducted preliminary data analysis simultaneously with the collection of data, as described by Bogdan and Biklen (2007) and Creswell (2014). Data collected at the beginning of the study informed subsequent data collection and analysis. I noted my observer comments in data collection documentation, including memos and diagrams (Corbin & Strauss, 2008). As suggested by Miles and Huberman (1994), I created codes for data analysis with the goal of matching data gathered to relevant constructs contained in the research questions. I considered each individual physician's experience as a case within the larger bounded system of the residency program for interns in residency programs at UAHS. Therefore, I analyzed each separately, and then conducted a cross-case analysis as described by Corbin and Strauss (2008) to analyze across participants' experiences for shared insights and meaning.

I organized both hardcopy and electronic files according to participant and labeled each file with the participant's chosen pseudonym. Files included all field notes, observer reflections, interview transcripts, interviewer reflections, and correspondence. A general electronic file housed correspondence with my committee and the residency directors, IRB documents, recruitment flyers and presentations, and other study document. All files were physically locked or password protected.

While I was still gathering data, I began to code and analyze the data to make meaning of what I was observing and hearing (Creswell, 2014). These early insights informed future data gathering efforts. Preliminary data analysis included: a) organizing and preparing the data for transcription; b) listening repeatedly to the digital recordings of interviews for nuances that came through the spoken word; c) beginning the process of hand coding using the descriptive codes for professional behaviors; d) using the interpretive codes to generate a description of the participants, the environment, and their experiences; and e) interpreting the initial findings and contemplating how to present them as results and conclusions.

I started with first-level descriptive codes and developed more interpretive codes as themes began to emerge. The first code list was based on the operational definition of professionalism for the study that included professional behaviors. These initial codes were the descriptive codes shown in Table 4.

Table 4

Descriptive Codes for Data Analysis

Code	Description
P/ERROR	Accept personal errors and honestly acknowledge them
P/EMP	Demonstrate empathy and compassion to all patients
P/RESP	Respond promptly and appropriately to clinical responsibilities including but not limited to calls and pages
P/TIME	Carry out timely interactions with colleagues, patients, and their designated caregivers
P/DRESS	Dress and behave appropriately, according to the standards set by the institution
P/REL	Maintain appropriate professional relationships with patients, families, and staff
P/TASK	Ensure prompt completion of clinical, administrative, and curricular tasks
P/ABIL	Recognize the scope of his or her abilities and ask for supervision and assistance appropriately
P/EQUAL	Treat patients with dignity, civility, and respect, regardless of race, culture, gender, ethnicity, age, or socioeconomic status
P/CONF	Maintain patient confidentiality

These descriptive codes allowed me to track what kind of professional behaviors I was observing in the clinical learning environment while conducting observations. I was able to ask participants about certain behaviors during follow up interviews based on the initial coding of field notes. I then coded interview data with these descriptive codes to ensure that once themes emerged, I could link the themes to the development of professionalism.

As I immersed myself in the data with repeated review of field notes and interview recordings, interpretive codes began to emerge. These interpretive codes that followed elaborated and extended the descriptive codes to include coding of experiences and events as well as the meaning made by study participants of the setting, context, and relationships with others. Table 5 outlines the initial interpretive codes used for the study.

Table 5

Interpretive Codes for Data Analysis

Code	Description
ROLE	Roles of the intern
EXPECT	Varied expectations
CONF	Increase or decrease in confidence
LEARN	Formal, informal, or incidental learning from attendings, colleagues, patients, or others
PERSP	Changes in perspective
CI	Critical incident
HC	Hidden curriculum
P	Professionalism

I employed these interpretive codes later in the data analysis process which allowed me to continuously connect the professional behaviors with the emerging themes.

To maintain the integrity of the original data collected, I made copies of field notes before adding reflective components or coding professional behaviors. I saved one original version of interview transcripts and then made multiple copies, one for each iteration of coding. Once the descriptive and interpretive codes were assigned to both interview and observational

data, I created one composite electronic file for each participant including all the coded observational and interview data. This allowed me to construct a comprehensive individual narrative for each participant to capture his individual story and experiences. I used the composite files for the cross-case analysis and employed a process of constant comparison to discover commonalities and differences. I compared and contrasted the narratives, descriptive codes, and interpretive codes across all four cases and manipulated the electronic files so that the data were in a logical order according to theme.

Once I identified common themes and negative cases, I constructed an ethnographic narrative to capture the common experiences of the participants. I then used the remaining data to construct an outline of findings. I examined the findings in light of the existing literature on transformative learning prior to making recommendations for future research or developing implications.

Strategies for Validating Findings

When reporting results and interpretations, a researcher should aim to establish trustworthiness and authenticity as defined by Lincoln and Guba (1985). Credibility, or the truth value of the findings, was established through triangulation of data collection methods and repeated engagement with study participants in the clinical environment. Credibility was also ensured through the use of a peer reviewer. I asked a professional colleague who is familiar with graduate medical education and currently enrolled in a master's program in adult learning to serve as a peer reviewer. I provided her a sample of an interview transcript, approximately seven pages in length, and a list of interpretive codes. The peer reviewer returned the coded interview transcript to me in a password-protected electronic file within five days. I compared her coding to mine and discovered a number of differences. When we met to discuss the differences in

coding, I discovered our interpretations of the learner's experience were, in fact, the same; however, my brief explanation of the interpretive codes was not sufficient and led her to use different codes for certain passages. After further explaining the meanings of and delineation between interpretive codes, we determined our coding would have matched.

Transferability, or applicability of the findings, was established through detailed data reporting which will allow those who use my research study results to evaluate its potential applicability in other contexts. Dependability, or consistency of the findings, was established through overlapping methods of data collection and analysis. Confirmability, or the neutrality and objectiveness of the findings, was established through reporting of raw data, products of data analysis, products of synthesis, formal process memos and diagrams, and interview protocols (Lincoln & Guba, 1985). Additionally, I constructed an ethnographic narrative in order to gain authenticity and present supporting evidence in a data-theory coupling style prescribed by Golden-Biddle and Locke (2007).

Complete objectivity is not a goal for the qualitative researcher since the instrument of interpretation is the researcher and the experience she brings to bear. However, researchers should make every attempt to identify potential biases so the influence on the data collection and analysis is minimal (Corbin & Strauss, 2008). As defined by Ahern (1999), researchers should navigate "an interactive, reflexive journey that entails preparation, action, evaluation, and systematic feedback about the effectiveness of the process" (p. 408).

For the study, I recorded reflexive components amongst my field notes to track my potential biases and questions. As described by Ahern (1999), before collecting data, I identified relevant personal interests and values, potential areas of role conflict, and personal feelings that could have affected my neutrality. Before each observation session, I allowed time to prepare to

transition into the role of unbiased observer. During the drafting and interpretation of findings, I monitored my sensitivity to the findings and reframed any interpretations during the research process if affected by my biases. I met with my adviser to discuss how to report the data. The reflexive components of my field notes also outlined my methodological decision making reported in Chapter 4 of the study.

Anticipated Ethical Issues

I employed the ethical best practices from the field of qualitative research described in the literature including participant well-being, disclosure of identity, confidentiality, and appropriate boundaries (Check & Schutt, 2012). To protect the confidentiality of participants, I let each participant choose a pseudonym and used it for all data collection and reporting. To ensure confidentiality of data, I saved all documents on a password-protected computer network drive. Any hard-copy files were kept in a locked cabinet. I also completed the required UAHS HIPAA certification.

Additionally, the study followed all required Institutional Review Board (IRB) protocols, including informed consent for participants. I submitted a request that included plans for the study to the Virginia Commonwealth University IRB and received approval to conduct the study. Additionally, I formally sought permission to conduct the study from each of the program directors in the varied residency programs at UAHS after the study received IRB approval.

Summary

As described in the chapter, this exploratory case study exists within a constructivist research paradigm. Each resident physician's educational experience is considered as a case within the bounded system of study participants chosen from the various residency training programs. Interview and observation were the primary methods of data collection. Data analysis

for interviews and observations consisted of inductive coding with a priori descriptive codes based on the operational definition of professionalism and interpretive codes which emerged throughout data analysis, in addition to extensive field notes gathered through ethnographic observation. Findings were validated through various processes to ensure credibility, transferability, dependability, and confirmability. Permission to conduct the study was received from the IRB and from formal gatekeepers to provide access to first-year medical residents at an urban, academic medical center in the Eastern U.S. identified as UAHS, the pseudonym intended as the site for the study.

Chapter IV

Methodological Decision Making

The emergent nature of qualitative research requires constant evaluation and often modification to the research methodology of the study protocols. For this exploratory case study, I made a number of methodological decisions during the pilot study, the data collection, and the preliminary data analysis. These decisions centered on participant recruitment and selection; the process by which data were generated, gathered, and recorded; the systems for keeping track of data and emerging understandings; and results of preliminary data analysis. I tracked these methodological decisions by recording them in field notes and in reflective notes after data collection. The chapter describes the methodological decisions made, how the decisions altered the original research study design, and whether the strategies employed were congruent with best practices outlined in the qualitative research literature.

Participant Recruitment and Selection

My original participant recruitment plan focused on first-year residents in the UAHS Internal Medicine Residency Program. I planned to work with two gatekeepers (Seidman, 1998) to gain access to this participant pool and present the study in person as well as through follow up flyers and emails. I was able to complete all the steps outlined in my original recruitment plan; however, my efforts to obtain a sample of eight to ten participants were not successful because I was only able to enroll one participant from the Department of Internal Medicine as outlined in my plan. Repeat recruitment efforts including an additional presentation at intern

conference, additional flyers distributed to intern mailboxes, and additional follow up emails were also unsuccessful. All recruitment strategies were required to be distributed through one of the formal gatekeepers and this may have negatively affected recruitment attempts.

After meeting with my dissertation committee and discussing the issues with participant recruitment, I broadened the potential participant pool to include first-year residents from disciplines other than internal medicine. After meeting with UAHS residency program directors in alternative disciplines and obtaining permission to recruit, I presented my study and sent recruitment emails to the members of various UAHS intern classes. These additional efforts yielded three additional participants, two from surgical specialties and one from another primary care specialty. After several weeks of additional recruitment efforts, I had exhausted the potential for additional participants.

Because of the low number of participants recruited, the screening protocol was not an integral aspect to finalizing the selection of participants. The four participants who volunteered were included in the study because they met the study requirements of inclusion and agreed to participate in interviews and observations. The final study sample included four male participants, two of which came from primary care disciplines and two of which came from surgical specialty disciplines. Of the four participants, three attended UAHS for their undergraduate medical education and one attended another accredited U.S. medical school.

Generation, Gathering, and Recording of Data

The original research design indicated a period of six months for participant observations and qualitative interviews. Because only one participant was recruited during the initial recruitment attempts, only one participant was observed and interviewed during the first six months of the study. After I decided to recruit participants from different disciplines, I extended

the data collection period an additional six months. The additional three participants were observed and interviewed during the final six months of the study. When communicating with participants, text messaging proved to be more reliable and efficient than emails, phone calls, or voicemails. Interns use texting to communicate with attending physicians and other residents, so it was best for me to use the same method.

Gathering data at regular intervals in varied educational settings was a priority for me but was not possible at times due to a number of factors. The residents' availability changed often, sometimes at a moment's notice during an interview or observation. Additionally, I struggled personally with health issues during the data collection period and had to work hard to continue to gather data as regularly as possible in order to gain a full appreciation for the experiences during the first year of graduate medical education. In total, I completed 12 interviews and approximately 68 hours of observation in the hospital setting.

Interviews

I piloted the interview protocol with two resident physicians and determined the questions were clear and produced relevant answers (Maxwell, 2005). I used the initial interview protocol at each participant's first interview; however, the questions at subsequent interviews were modified to address topics which emerged from observations or to clarify something from a past interview or previous observation. I found it most important to customize questions based on the specific participant rather than the topic of interest (Maxwell, 2005). All qualitative interviews were conducted at a time and date convenient for the participant and in a private office with a closed door; this provided a quiet environment to ensure participants' privacy and to facilitate clear audio recordings. The office was in close proximity to the UAHS hospital

facilities which made it relatively easy for me to conduct interviews with participants when it was most convenient for them, whether before, after, or during patient care.

Ethnographic Observations

I pretested observational methods in both formal and informal learning environments with two resident physicians and determined they would provide the data I needed (Maxwell, 2005). At the beginning of any participant observation, I would introduce myself to the attending physician, residents, and other members of the healthcare team. During participant observations, I let the participant introduce me to patients and patients' family members and explain my purpose for being in the clinical setting. Some participants introduced me as a clinical educator, others introduced me as a researcher. All participants emphasized to the patient that I was there to observe only the physician and that any information I recorded was only about the physician and would not include any patient personal health information.

During observations in the clinical setting, I took notes on paper. During the pilot study, I learned not to take notes with ink because it decreased legibility and not to take notes on the back of a sheet of paper for the same reason as well as to prevent anyone from reading my notes as I held my notebook in my hand. Taking notes using an application on my smartphone was not appropriate, as it could give the impression I was not paying attention or doing other tasks. However, I did take notes on my phone while observing formal learning experiences such as grand rounds or conference because everyone was using a phone during these large group meetings. Rather than using a prefabricated observation guide (Bogden & Biklen, 2007) with specific questions or areas for data collection, I used blank paper to allow for maximum flexibility in the data collected.

In a few cases, I did not follow the participant into certain settings. When a patient room indicated contact or airborne precautions, I did not enter the room with the medical team.

Instead, I waited in the hallway and used the time to take additional notes.

During observations, I tried to be as silent and as unobtrusive as possible in order to reduce observer effect (Bogden & Biklen, 2007). During the pilot study, I learned that some patients may address questions to me rather than the physician. I developed a strategy to combat this in which I focused on the physician rather than make eye contact with patients or patients' family members during clinical encounters. In the event a question was directed toward me, I would silently gesture toward the physician and he would answer. This strategy helped to diminish the effect of my presence in the room. Additionally, during observations, I remained as stoic as possible. At times, it was extremely difficult to not show emotion, particularly in cases where a young patient was terminally ill or a patient was enduring a painful procedure. During one patient encounter, I became ill because of the intense smell in the room. I had to quietly excuse myself and complete the observation of the encounter through the window. This was not something I encountered during the pilot study, so I did not anticipate it or prepare for it.

When making my way through the hospital, I would see many people who recognized me and wanted to speak or ask why I was with the healthcare team. It was important that I not become distracted by engaging with medical students or other physicians. I would silently gesture or quietly mention that I was conducting an observation if directly asked.

After I left the observation setting, I would add to my field notes as needed and fill in any gaps in the data collected. I would also record my personal reflections at this time and note any follow up questions I wanted to ask in subsequent interviews. This time of reflection afforded me concrete closure to each observation and provided an opportunity for me to thoughtfully

transition from the role of researcher. At no time were study participants or members of the healthcare team aware that I was observing for instances of professional behavior or the lack of it. My stated purpose was to observe physician learning during the first year of graduate medical education.

Tracking Data and Emerging Themes

When participants agreed to participate in the study, I asked them to choose a pseudonym. I assigned one for a participant who neglected to choose one. I used these pseudonyms to list the participants as contacts in my phone and email contact list. These have been deleted now that data collection has been completed. Additionally, I used these pseudonyms in all field notes and written documents presented to my dissertation committee.

The field notes for qualitative interviews included overall observations about the participants' responses to the questions, personal reflections about the interview process, and any methodological decisions (Bogden & Biklen, 2007). At the beginning of the study, I started to type all my field notes from my handwritten notes but soon abandoned this practice because I found I was losing contextual information. My handwritten notes included diagrams of participant movement within the observation environment and indication of what I was thinking as particularly interesting things transpired. I found analyzing directly from my handwritten notes more efficient and accurate. The field notes for participant observations included details about the physical environment, observed actions of the participant as well as observed actions of attending physicians, co-learners, other members of the healthcare team, the patients, and patients' family members. I also recorded my actions as the researcher. Finally, I included personal reflections about the observation process, my learning and any methodological decisions (Bogden & Biklen, 2007).

Preliminary Data Analysis

As I gathered interview and observation data, I continually returned to the purpose of the study to examine the development of professionalism in the new physician. By constantly connecting the data gathered to this goal of the research through the use of descriptive codes about professional behaviors, I was able to ensure the data gathered could be connected to the concept of professionalism development. Additionally, I continually reviewed the research questions pertaining to the educational experiences of the first year of residency and the influence of the hidden curriculum on what is learned about professionalism.

The first data gathered for each participant was interview data. This allowed me to establish a relationship with the participant and get a sense of their initial impressions of the first year of residency and the learning experienced during both informal and formal learning experiences. The next data gathered for each participant was observational data. When the observation environment allowed, I posed clarifying questions to the participant. If I was not able to ask questions during the environment, I would make note of what to ask in a subsequent interview. By referring to previously conducted observations during subsequent interviews, I was able to gather rich and descriptive data regarding the learning environment and learning experiences. Data were collected to the point of saturation (Bogden & Biklen, 2007).

The observational data proved to provide the most valuable evidence regarding the formal, informal, and incidental learning experiences and the influence of the hidden curriculum on professionalism. The interview data proved to provide the most relevant evidence regarding critical incidents and the experiences most likely to result in transformative learning. Together, these two types of data provided patterns and themes surrounding the experience of being a first-

year resident at UAHS and the influence of relationships with upper-level physicians, other residents, members of the healthcare team, and patients.

Construction of Ethnographic Narrative Based on Observation Data

To illustrate the unique experiences of the participants, I crafted an ethnographic narrative based on guidelines provided by Golden-Biddle and Locke (2007). This ethnographic vignette was composed from actual observations that took place among the four interns going about their daily routine. The composite narrative included aspects from each participant's observation data and added authenticity, plausibility, and criticality to the study's findings (Golden-Biddle & Locke, 1993). By particularizing the everyday events in the life of an intern physician, the narrative provided authenticity. By building dramatic anticipations surrounding significant events in the clinical learning environment, the story provided plausibility. And, finally, by provoking the recognition of differences between the reader's life and the life of an intern physician, the account of the residents' experiences provided criticality.

Summary

The chapter outlines the emergent nature of methodological decision making which occurred during this qualitative research study. Participant recruitment strategies were modified to obtain a sufficient sample. Specific observation and interview techniques were modified as needed to obtain data congruent with the purpose and research questions of the study. I used descriptive codes during preliminary data analysis to ensure the data collected were exposing patterns and themes that pertained to the development of professional behaviors. Finally, I conducted preliminary data analysis with interpretive codes to ensure the data collected aligned with study goals and would adequately answer the research questions.

Chapter V

Findings from the Study

The chapter presents the findings from a case study of the educational experiences of new physicians during the first year of graduate medical education at an urban academic medical center. Observational and interview data support the themes that address these research questions:

1. Which educational experiences contribute to the development of professionalism in the physician's first year of residency training?
 - a. Which formal, informal, and incidental learning experiences contribute to the development of professional behaviors?
 - b. Which experiences are most likely to result in learning that is transformative (Mezirow, 1991) for the new physician?
 - c. What are the critical incidents (Brookfield, 1990) which contribute to learning?
2. How does the hidden curriculum (Hafferty, 1998; Phillips, 2009) of medical education influence what is learned about professionalism during the physician's first year of residency training?

The research results represent data collected from July 2014 through July 2015 at UAHS, an academic health system in the Eastern U.S. Four first-year resident physicians, also known as interns, participated in face-to-face interviews and on-site observations.

The purpose of the chapter is to present the findings from the study gathered through approximately 68 hours of observation and over six hours in 12 interviews. I considered each study participant to be a unique case within the larger bounded system of residency education at UAHS. Cross-case analysis revealed both commonalities and differences among participant's learning experiences about professionalism during the first year of residency training. The chapter begins with an ethnographic narrative which illustrates the combined experiences of the first-year resident participants. The narrative is based on synthesized observational and interview data from the study participants.

A Day in the Life of an Intern

The intern starts his day before the sun rises. When the alarm goes off at 4:45 a.m. for the second time, he is exhausted from the previous day and has to dig deep for the motivation to get up and get going. His morning routine is short because it has to be. If he has clean clothes, he wears them. If not, scrubs will have to do. He'll need his white coat today because he wants to carry his iPad during rounds and the white coat pocket serves as the carrying case. He wants to get to the hospital as early as possible to see all his patients and finish his progress notes before rounds start at 8:00 a.m.

On his way to the hospital, the intern thinks about the patients he saw yesterday and wonders how they did overnight. He also thinks about the patient presentation he has to give later in the week at intern conference. He makes a mental note to find an article and some images to add to a PowerPoint template. He finds a parking place in the regularly overcrowded parking deck. There are open spaces because it is so early. On his brisk walk to the floor, he smells the coffee from the coffee kiosk but doesn't have time to stop. Coffee will have to wait until after rounds.

He arrives at the team room a little before 6:00 a.m. The small, windowless room is a bit cluttered with empty coffee cups and old paperwork strewn on the table in the center of the room. The four computer workstations around the perimeter of the room are all empty and for this he is thankful. He wishes there were a more private place to work because he is easily distracted by others working in the small environment. Arriving early ensures he will have a workstation and a little bit of quiet time before the room fills with other interns and medical students.

He accesses the hospital-wide computerized system which holds all of the patient electronic medical records (EMR) using one of his many usernames and passwords. He prints off the team's patient list and marks which are his responsibility. He notices that his five patients are in four different areas of the hospital. Just before heading out to see the first patient, the night float intern comes into the team room and announces that there have been two overnight admissions. These two new patients will need to be assigned to him or the other intern. Even though he knows he has two more patients than his colleague, he offers to see one of the new patients. He quickly prints out the new patient's chart and rushes out the door.

On his way to see the first patient, he runs into two interns who are currently on a different team. They casually joke with him about his business attire. He defends his clothing choice by noting that it was the only clean outfit in his closet. They shake their heads in disbelief because he is always dressed extremely well. After this brief interaction, he continues to the first patient room.

He knocks on the door of the patient's room and slowly opens it. The room is dark and the patient is asleep. He turns on the light and says the patient's name gently. The patient groggily replies with a brief greeting. He asks how the patient is feeling and how her night was while sanitizing his hands. She responds in brief sentences and allows him to conduct a brief

physical exam. He lets her know that he'll be back in just a bit with the entire team and the attending physician. He sanitizes his hands again, turns off the lights, and closes the door behind him. Just outside the patient's door, he sees the nurse and asks him to confirm the account just given by the patient. He jots some quick notes on his patient roster and heads to the next patient room.

Upon arriving at the second patient room, the intern realizes that the patient name on the door doesn't match the patient name on his roster. He sees a nurse and asks, "Hey, did you all move Mrs. Cartwright?" The nurse flatly replies with, "Good morning." The intern rephrases his request and asks, "Good morning, did you all move Mrs. Cartwright?" The nurse replies, "I don't know, you'll have to ask up there," and motions toward the nurses station. The intern follows her directions and finds out the patient's new room number.

By 7:25 a.m., the intern has pre-rounded on all six of his patients. He returns to the team room to begin his progress notes, hoping to finish them before rounds begin at 8:00 a.m. When he enters the team room, a colleague asks him a clinical question and he takes a minute to explain the answer. He knows the answer because he had a patient with the same condition last week; when he didn't know the first-line treatment, he found an article on UpToDate with the most recent guidelines.

At 7:30 a.m., the social worker assigned to the medical team comes in to discuss the patients who will be discharged on this day. The intern reports, "Mr. Thornton should be able to." The social worker thanks him and leaves. The intern accesses the EMR for each of his six patients and records the findings from his morning pre-rounds. He finishes the notes at 7:52 a.m., just in time to run get coffee before rounds begin.

On his way to the coffee kiosk in the bustling hospital hallway, his thoughts drift to a patient he saw last week in the intensive care unit (ICU). It was a troubling patient case and he hasn't seemed to be able to get it off his mind. The homeless patient coded and needed to be resuscitated. The team attempted resuscitation but only did the bare minimum required for a code blue. He wondered if they should have done more. He wonders if he should have spoken up but then he remembers his place; he is only the intern and the lowest ranked physician on the team. "There was a life there," he thinks. He remembers the discussions in medical school about hypothetical ethical decisions. This was a real life one and it haunts him.

While the intern drinks his coffee and nibbles on an energy bar on the way back to the team room, his thoughts drift back to today's tasks. When he enters the team room, he takes a seat at the table with another resident and a medical student. The resident asks the medical student, "Did Mrs. Davison show you her butt?" The student laughs and responds, "It was a little scratch!" The resident replies, "Can't we just coach these people to leave AMA (against medical advice)?" The intern sharply interjects, "Man, that's messed up! You're a doctor!" The resident explains, "I know, it's just, I got a 6:45 p.m. admission last night." The intern nods his head and empathically replies, "Oh, that's rough." Then, each of them begin to focus on their hardcopy patient rosters to prepare for rounds.

Another resident enters the room and sits at the table. He asks the intern whether he wants off Friday or Saturday. Before the intern answers, the resident states he wants Friday off since it will be busier than Saturday. The intern accepts this choice made for him and explains how the new attending starts on Friday and this will give him a chance to work with him first.

When the attending physician comes into the team room at 8:00 a.m., he looks around and sees two interns, two residents, two medical students, a pharmacy student, a dietetic student,

and a social worker. He asks if everyone is ready. They don't answer the rhetorical question, rather, they all stand up and start exiting the room. A medical student puts on her short white coat over her scrubs. The intern grabs his iPad, puts on his long white coat, and follows the group.

The team room is on the 6th floor of one hospital building and the first patient's room is on the 3rd floor of another hospital building, so the large group travels slowly through a confusing series of crowded hallways and slow elevators. The intern grabs a mobile hospital computer just as the group stops outside the door of the first patient room. The medical student begins her oral presentation of the patient case while the intern pulls up the patient's EMR. It isn't his patient, but he knows the attending will have questions about recent lab results, so he wants to have the records ready. At the end of the presentation, the medical student, her supervising resident, and the attending enter the patient room. The rest of the team waits in the busy hallway, moving around as needed to allow pedestrian traffic to flow. The intern receives a page and slips away to return the call.

The voice on the other end of the line says they aren't going to perform the lumbar puncture on the intern's patient. When the intern asks why, the consulting physician says the service doesn't have time. The intern becomes visibly frustrated and politely ends the call. When he return to the team's location, the attending is back in the hallway. The intern explains the situation to him and the attending asks clarifying questions. After obtaining the full scope of the situation, the attending tells the intern that another service should never deny a request for a procedure just because they are busy. The intern explained that he was not confident in his ability to justify the procedure to the consulting physician and the attending says he will take care of it. The intern is relieved.

On their way to the second patient room, the intern walks next to the attending physician. While other residents and students hang back, the intern takes advantage of the opportunity to engage with the attending physician. He asks the attending about the dosage of a certain medication. During the walk, the attending reviews the pharmacokinetics of the drug to the intern. He is the only one who benefits from this teaching, as he is the only one physically close to and engaged with the attending. As they arrive at the second patient room, the intern prepares to present the patient to the team.

The intern presents the second patient case to the team efficiently and effectively. Neither the team nor the attending have any follow up questions because the intern was thorough and clear. This patient is being discharged today, so the attending reviews all the steps associated with discharge with the team. While he is teaching, the intern calls the floor nurse to tell her the patient is being discharged. The attending ends the brief, informal lecture with a review of the doctor's role in following up with patients after discharge.

A medical student presents the third patient. During her presentation, the intern fills in gaps during the presentation, as he has been following this patient as well. The attending corrects the student when she refers to a liver donor as dead and instructs her to use the word deceased. The attending also highlights two aspects of the patient case that correspond to frequently tested material. He says, "This will be on Step 3 (the board exam for residents)." The upper-level residents and the intern nod in acknowledgement. As the medical student continues to present the case with excessive detail, the attending interjects with, "Yeah, yeah, yeah. Get on with it, we gotta get going. Is there anything else important?" The medical student shortens the presentation and only says a few more pertinent things before the team enters the room.

After that encounter, as the group begins to travel toward the fourth patient's room, the resident managing the patient's case indicates the patient needs to be moved to a different medical service. The attending instructs her by saying, "Well, make sure that floor will take her and that the nurses are able to observe her. You know, they may be busy doing their nails or something." Both the attending and the resident laugh. When the group arrives at the fourth patient room, the attending receives a call and answers his cell phone. The group hears him adamantly say, "I have it. I have it. Do you want it? Well, that's a different question." The group waits patiently for his call to end and then enters the room.

The rounding for the fourth through eleventh patients follow a similar pattern to the first three. One student, intern, or resident presents the case to the attending and the attending examines the patient and fills in any gaps in the presentation. During the rounding routine, the intern gains insight into the attending's clinical decision making and benefits from his formal teaching.

At 11:30 a.m., the team is at the twelfth patient room. The group's energy level has noticeably decreased and the overall tone is more serious as compared to earlier. The resident begins to present the case in the hallway, directly outside another patient room's open door. Another resident suggests the group move to the end of the hallway to prevent others from hearing the health information being presented. The group shifts location and the resident continues. The intern, standing toward the back of the group, notices a patient stumbling out of another room as a nurse calls out, "Go stop her!" The intern rushes to the patient and asks her if she needs anything. She asks for ice chips. The intern escorts the patient back to her bed and retrieves ice chips for her. The nurse thanks the intern for stopping the patient and helping. The intern let her know no thanks was needed and quietly returned back to the team.

When the team finishes the last patient, the attending declares, “Let’s go do some medical stuff.” The group disperses; some residents leave with their assigned medical student while others scatter independently. The intern heads back to the team room to finish placing orders and checking lab results before afternoon conference begins.

On his way back to the team room, the intern remembers he needs a tube of Dermabond (a topical skin adhesive) for a patient, so he stops by the Omnicell (an automated medication and supply cabinet system) in the hallway to grab a tube. The machine prompts him for his individual physician code and he uses the code passed down to him from upper-level residents; it belongs to a former resident from years ago. Using the old code is much more efficient than getting a new code. He selects the supply and then charges the supply to the general floor. It is much faster to charge it to the floor rather than to charge it to the patient’s room. He shoves the tube in his white coat pocket and hurries toward the team room to start putting in orders for his patients.

At 12:33 p.m., the intern looks up from the computer and realizes he is late for morbidity and mortality (M&M) conference (formal meetings with a focus on education during which medical errors, complications, and unanticipated outcomes are discussed). He rushes four floors down the narrow staircase and tries to inconspicuously slip into the conference room which is already full of attendings, fellows, residents, interns, medical students, and guest speakers. The attending leading the meeting has already started the general announcements by the time he finds a seat. The crowded room smells of various lunches and the intern’s stomach growls as he realizes he is missing his chance to eat. He scans the room and spots another resident from his intern class napping in the far corner. He settles in to hear the review of patient cases.

Before the first case is presented, the attending physician facilitating the M&M conference distraughtly expresses frustration with the residency program director's recent decision to no longer require residents to present patient cases at M&M. Another faculty physician chimes in to explain that the decision was intended to allow residents more time for patient care. The attending rebuts with an assertion that the presentations are indeed an important part of patient care because they educate all about how to do things better and safer. The faculty member agrees but reiterates that the program director thinks it is a waste of time; the decision has been made and needs to be implemented. The attending angrily declares he will appeal directly to the program director regarding this decision.

As the intern listens to the heated exchange during M&M, he is reminded of the presentation given by the department chair at last week's grand rounds regarding residency education. The chair announced a renewed focus on residency education and the creation of a new committee charged with oversight and optimization of residency education in the department. The chair explained a recent study that found new fellows unprepared after residency education, particularly with a lack of patient ownership. Additionally, the chair reviewed his expectations for faculty members to be examples of how things should be done. The intern realizes how the message from last week conflicts with the decision made by the program director this week, but in the end, he is just relieved that one of the many formal curricular requirements has been lifted.

This M&M conference covers a number of patient cases and various topics including labs for urinary tract infections, pneumonia caused by a patient's refusal to move around, pain control, airway management in a fatal case, and withdrawal of care. During the conference, faculty physicians in the audience ask the presenters questions, noting that the questions are

similar to those they will face during their oral board exam. The intern tries to maintain a high level of attention in order to absorb all the salient points, but his exhaustion and hunger hinder his attempts and his mind starts to wander to all of the patient care tasks he needs to complete before the end of the day. The conference ends at 1:50 p.m.

The afternoon and early evening are filled with admitting patients, discharging patients, ordering tests, calling consults, and helping with one code blue. No day is the same and the intern adapts his work flow based on the specific needs of his patients and the demands on the team. He took a few minutes around 3:00 p.m. to eat a piece of cold pizza leftover from a meeting in the department's conference room and loaded up on more coffee. By the time the night intern arrives for the handoff just before 7:00 p.m., the intern is mentally and physically exhausted.

The intern meets with the night intern and floor nurse in the team room for the handoff. He transfers responsibility for his patients to the night float intern by providing signout on all his patients. He provides sufficient and succinct information for each patient including bed location, pertinent history, physical exam findings, key medications, changes in the treatment plan, and any anticipated problems. Once he confirms the night intern has everything she needs, he heads home.

The intern arrives home at 7:35 p.m. He spends a few minutes with his daughter before her bedtime and eats dinner with his wife. He disappears into the home office and reads a few journal articles and textbook chapters. He scribbles down some thoughts for what to include in his presentation at intern conference later in the week. It's now after 10:30 p.m. and he doesn't have the energy to start the PowerPoint presentation. It will have to wait until he has some free time, if he ever has any.

The Limited Resource of Time

Time is a valuable commodity and critical resource during the first year of residency. I saw the importance of using time efficiently during observations in the clinical environment and these interns described the effect of time, or lack thereof, during interviews. All four study participants noted how the concept of time shaped their overall experience during the intern year. Time, or the lack there of, affected how these interns practiced medicine as resident physicians, studied and completed curricular requirements as students, and fulfilled personal roles within their families.

Three of the study participants spoke specifically about learning how to allocate time in the clinical environment. Dr. McCoy described time management of clinical duties as “the biggest thing you learn” during the intern year. Dr. Richards noted that “learning how to be efficient” was essential to effective patient care. Similarly, when referencing significant learning as an intern, Dr. Nolan said, “you learn how to prioritize.” One study participant recounted a series of events in which efficient and effective use of time in the clinical environment was essential to patient safety. Dr. Nygma described a particularly busy day where “if it rained, it absolutely poured” because his team was pulled to multiple locations due to multiple urgent patient cases. In the period of an hour, his team was called to consult on three emergency patients, in three separate areas of the hospital. He said, “Learning efficiency, learning the best way to ensure all of your patients’ safety is the way to go.” His team divided and conquered in order to meet all of the patients’ needs and this was a significant learning experience for Dr. Nygma.

During the 12 months I spent interviewing and observing Dr. Richards, I heard and saw how much he valued learning from attending physicians during rounds. On multiple occasions,

he mentioned the importance of getting all of his patient encounter notes completed prior to rounds in order to take full advantage of the learning opportunities during rounds. He explained, “If you’re not done with your notes...then throughout your day you’re all stressed out because you have so much to do in the back of your mind.” On a particularly busy day, I observed Dr. Richards not going into patient rooms during morning rounds. Rather, he sat at a computer in the hallway to complete patient care tasks. Due to a lack of time, he was experiencing the negative consequence he had previously described.

In addition to allocating time effectively when in the clinical environment, these interns also described the need to be efficient when outside the hospital. When discussing reading and studying at home, Dr. McCoy said “it’s definitely difficult.” Similarly, Dr. Nygma said, “in terms of getting to...read articles...you get two days off in a two-week period, so I didn’t have as much time for that.” These interns characterize the student responsibilities of an intern as difficult due to limited time and as contributory factors to the overall demanding and laborious nature of residency training. Dr. Richards said this became apparent to him during the first months of his intern year:

I learned in the first couple of months being an intern is that these three years of training are supposed to be hard not because the working hours are so hard. It’s supposed to be hard because the training you...have to endure...by yourself when you’re not working. Which is go home and read and read about your patients and all that stuff.

For Dr. Richards, the long hours of patient care are not the hardest aspect of residency training, rather, the informal and self-directed learning outside of the clinical environment proved to be most burdensome. He went on to describe his personal strategy for meeting the demands of intern year:

I'm digging deep to find that motivation just so I can do all that stuff, 'cause you get one day off a week you're working 80-90 hours a week. It's really hard to find that motivation, but it's only three years of your life for this training to be a good doctor, so you might as well be fully dedicated.

Looking inward for motivation allowed Dr. Richards to complete all of tasks competing for his limited resource of time and acknowledging the finite time period of residency training gave him the perseverance to continue.

One study participant described how lack of time affected him in two personal ways including limited social interactions with his colleagues and lack of time with his family. At the end of the study, I asked Dr. Nolan if he had any regrets about the intern year. He described how the amount of social interaction with his fellow interns decreased throughout the year:

I mean if there's anything that I guess I could regret about this year, integrating with the other interns I think, doing social stuff. You do it at the beginning 'cause you're all together and you're all doing orientation and then work starts and...you just have to be more intentional about it.

Dr. Nolan described another role not expressed by the other study participants, the role of social companion to other intern physicians. In addition to being a physician colleague he was expected to interact socially with his counterparts. Dr. Nolan explained how limited time and exhaustion impeded his efforts:

At the end of the day, I just wanna be home and hang out with family. I'm so exhausted during the week and I just wanna get rest [on the weekends]. I'm like, well, I have a good excuse if I don't get out and do things. It would have just been more fulfilling or more satisfying in some of those interactions and relationships.

He did not indicate that his absence from social events damaged his professional relationships; however, he lamented that his connections with his fellow interns could have been enhanced, if not for the lack of time.

When speaking of lack of time to socialize, Dr. Nolan mentioned his family. He was the only study participant with a child; therefore, his perspective on the demands of intern year are unique, as he is balancing being an intern with being a new father. He reflected:

There's not enough time for everything that you wanna do, everything that you're expected to do [teach medical students, research, presentations, independent learning, board studying, in-service exams]... There's not enough time for all of it and having babies. I think one thing is I think I've tried to and gonna continue to try to do the work stuff at work and just be available at home. Of course, it never works out that way.

There's always some hours per the week that I have to devote to making that presentation or whatever. Certainly with having a baby I wanna make that happen more than ever.

Dr. Nolan expressed his desire to further separate his roles of physician and student from his role of father by completing all professional tasks during work time and dedicating personal time exclusively to family. However, as he notes, it rarely works out that way due to the lack of time.

The limited resource of time affected all facets of residency training for these study participants. Interns learned how to be efficient in the clinical setting because it was essential for patient care and patient safety. Additionally, interns struggled to allocate the required time to read and study outside the clinical learning environment. Finally, interns attempted to find time as much time as possible for social relationships and family time. The pressure to be efficient that the study participants experienced related directly to the professional behaviors of

responding promptly and appropriately to clinical responsibilities as well as ensuring prompt completion of clinical, administrative, and curricular tasks.

Formal and Informal Learning

Dr. Nygma described the first year of residency training as “a whirlwind of learning” in which interns “sink or swim” because the learning from the third and fourth years of medical school may not be sufficient. On his first day of residency, when Dr. Nygma arrived, he was told he had to round on seven patients and be ready to present in two hours, using an EMR he had never used. He explained, “I felt a bit overwhelmed, but by the end of the two weeks, I definitely had a better handle of what was going on.” Dr. McCoy echoed this sentiment when he said interns “learn the ins and outs of being a resident pretty quickly.” The amount of learning during the first months of residency is “surreal” according to Dr. Richards. When he considered his knowledge level at the beginning of the year, he said, “The fact that I was seeing patients in July is...funny because I feel like I didn’t know much back then.” The study participants experienced formal, informal, and incidental learning experiences throughout the intern year. These were highly influenced by the clinical learning environment and others within the context. Many of these learning experiences related to concepts of professionalism.

When these interns speak of formal learning opportunities, they describe the didactic sessions they are required to attend each week, primarily to learn knowledge-based content needed for board exams and in-service exams, and administrative tasks that include such things as learning to write admission orders or patient encounter notes. Dr. McCoy explained, “We have conferences Tuesday nights and Friday mornings with our attendings” and “[the formal sessions] are helpful, but more for testing purposes, like preparing for boards and in-service exams.” Occasionally, the topic of a formal learning session will be about a specific disease seen

in the clinical setting and discussion of treatment options, such as dealing with infectious hepatitis in the neonate. Some programs have a multi-day or full-day resident retreat each year, and often these are focused on learning basic teaching skills for working with students, things such as giving feedback in the clinical setting, how to deliver bad news to the patient or family, or how to lead an interdisciplinary team.

Formal learning has a pattern and a rhythm to it – weekly lectures, noon conferences, and attending-led learning sessions, depending on the medical specialty. Interns know that these are an important part of their education that supplements what they are experiencing in the clinical setting and that attendance is important, and expected of them. However, as Dr. Richards noted, “there’s only so much you can learn in the [lecture] hall.” The crux of learning in residency is experiential, learning that occurs through practice and repetition, learning by observation, and learning by trial and error. Dr. Nygma noted, “I think just absolute repetition was probably the best way [to learn].” The age old adage of “see one, do one, teach one” may still exist, but these new physicians know that it takes many more than “one” to become proficient at something.

Formal learning in the clinical environment provides ample opportunity for learning through repetition according to Dr. Nygma, “you’ve seen constipation once, you’ve seen it 20 times, and know how to treat it.” Learning in situ is the primary mode of formal learning in the clinical learning setting as detailed when Dr. Richards explained, “a lot of learning is done by doing.” He further explained, “I feel like I’m not there yet where I can...see the entire picture all together...I need to observe other people do that first.” Dr. McCoy also described learning from upper-level residents through active observation:

I tried and couldn’t do it, then they [upper-level residents] showed me, and then we were able to do it together. They’ll [upper-level residents] watch you do it one or two times,

and you kind of just learn. It's a very hands-on, even if you haven't seen one before, then when you can't get it, they'll do it.

When describing formal learning in the clinical setting, the study participants focused on learning clinical skills such as determining a differential diagnosis or completing a medical procedure.

All four participants characterize informal learning as an additional activity which occurs outside the clinical learning environment, on their own time, requiring lots of internal motivation and pre-planning. Like the ethnographic narrative illustrates, reading at home after a long day at work is difficult. As noted by Dr. McCoy, "especially when I was on the floor, you get home at 7:30 p.m. and then you usually read or eat dinner, then read for an hour, and then it is 9:30 p.m. or 10:00 p.m." Like formal learning, informal learning contributes to these interns' medical knowledge base through reading textbooks, reviewing journal articles, and preparing for required presentations on patient cases or medical conditions. According to Dr. Richards, "knowledge is something that comes over time, but it is very important that you read...you can tell who's a well-read physician and who's not." He based these assertions on his interactions with an attending physician, Dr. J, whom he described as "very intelligent, very professional, and at the same time, very approachable. To have that balance...is the epitome of a physician."

Dr. Richards described the amount of informal learning required during residency as insurmountable. Obtaining all the necessary supplemental knowledge is a moving target for this intern because of the limited time he has to dedicate to informal learning, as illustrated in this comment by Dr. Richards:

It's kind of scary because you don't have that much time outside of work as it is, but you really have to be extra disciplined. When you leave work you have to tell yourself I'm gonna read.

When this intern didn't meet the goals he had set in terms of completing reading outside of the clinical environment, feelings of regret emerged. Even though Dr. Richards knew he spent a significant amount of time reading about pertinent medical topics, it was not enough:

I feel like I wish I'd been more disciplined with reading. I mean, I read as much as I could on my free time—but I didn't have one particular book that I read. I just picked up articles here and there. It kind of helped, in a way, but I wish I could have said, "Oh, for sure it's done, and I accomplished something by reading this entire big, really big book," you know? I wish I had done that.

Complacency with regard to informal learning also sets in during the intern year as the demands of the clinical environment increase. As evidenced by the response I received from Dr. Richards when I asked what advice he would have given himself at the beginning of the year. He replied, "Intern Year is really hard...keep your expectations in check, because once you start getting comfortable...I forgot I that I was an intern, at times." Interns have to balance the role of student with the role of paid physician, and many times, the expectations associated with the role of student are trumped by the expectations associated with the role of doctor.

In one case, an intern used informal learning to expand upon what he had learned formally in the clinical learning environment. When Dr. Nolan didn't know how to treat a patient with hypertension in an emergency situation, he asked for assistance and someone helped him with the answer. While that took care of the immediate needs of the patient, the specific answer did not sufficiently fill Dr. Nolan's knowledge deficiency. When he got home that

evening, he sought additional information from UpToDate, an evidence-based medicine online resource, to ensure he knew how to treat a future patient with a similar need. He explained, “I may have learned what they did in that situation, but then I also wanna broaden my understanding of, well, why exactly did they pick that? Or what’s the evidence behind that versus something else.” Dr. Nolan further explained that this is a regular pattern for him and that he tries to research any topic raised by an interesting patient case. When an intern can successfully balance the roles of student and physician, he benefits personally with an increase in knowledge to produce higher exam scores and his patients benefit as well as from his heightened ability to treat them.

The formal learning experiences in the clinical learning environment and the informal learning experiences outside the clinical learning environment described by the participants directly correlate to professionalism. The learning related to the professional behaviors of ensuring prompt completion of clinical, administrative, and curricular tasks, as well as recognizing the scope of one’s abilities and asking for supervision and assistance appropriately. While it is relatively easy to identify formal learning in the hospital and informal learning at home, it is nearly impossible to distinctly categorize the learning that takes place in the hospital during patient care. The significant learning that takes place in the clinical learning environment encompasses all three types of learning in complex combination. Additionally, the context and other people in the setting considerably affect what is learned and how.

Incidental Learning from Role Models

Three study participants described learning in the clinical environment as attending-specific. The personality, teaching style, communication strategies, and overall demeanor of the attending physician permeate every aspect of the clinical learning experience. Dr. Richards noted that

“every attending has been different” and that interns just “kind of have to go with the flow.” Dr. Nolan echoed this by stating “particular attending[s] like things [in particular] ways for their patients.” When describing the attendings as teachers with distinct styles, Dr. Nygma described one as “a little more overbearing on the day to day minutiae, as opposed to this one who sort of wanted me to do my own thing while keeping tabs on me.” The attending physicians most memorable to these interns are those who not only teach medicine, but also model how to think like a doctor and communicate effectively with patients.

During multiple interviews, Dr. Richards described an attending physician, Dr. K, as “the epitome” of what he wants to be in the future. He explained:

I’ve never seen any attending having that kind of people skills, patient skills. If I could sum up in two words, I would say she cares. She cares about me as a learner. She cares about patients...she really cares about them. She cares about everyone else on her team.

Dr. Richards outlined Dr. K’s superb leadership skills, particularly her ability to successfully manage a large team comprised of professionals and students from multiple disciplines. Dr. Richards also enumerated Dr. K’s extraordinary teaching abilities, especially her willingness to gather feedback from learners about her teaching in addition to providing feedback to learners about their performance. In terms of clinical learning from her, Dr. Richards said, “I don’t think I’ve learned from every attending as much as I have from Dr. K.” She taught him how to thoroughly examine sedated and intubated patients and communicate with them in a caring yet uncondescending manner. Dr. Richards recalled:

I learned a lot [about] how she examined her patients. She’s very thorough. [I’ve] never seen any other attending being that thorough. Even if the patient is sedated, intubated,

she would almost pamper her patients. She talks to them like they're little babies...in a good way...not like she's being condescending.

Dr. K also taught Dr. Richards the intricacies of clinical decision making by explaining her thought process and outlining how he should consider a patient case. He explained, "She tells us what she's thinking and how I should be thinking." When composing patient encounter notes, Dr. Richards would model his notes after Dr. K's notes to ensure he grasped what and how she was thinking. He detailed, "I tend to match my note with the attending's note...then I can see...how the attending is thinking." Dr. K modeled exceptional professional behavior for Dr. Richards, particularly the components of demonstrating empathy and compassion to all patients and maintaining appropriate professional relationships with patients, families, and staff.

At times, two attending physicians lead the same medical team; therefore, an intern must simultaneously meet the varied expectations of two supervisors and must adapt to two different teaching styles in order to maximize learning. I saw this scenario play out when I observed Dr. Richards. One attending valued efficiency, demanded concise patient presentations, and rushed through rounding. In contrast, the other attending valued thoroughness, expected detailed patient presentations, and spent extensive amounts of time rounding because he taught each patient about their specific disease process and took the time to remind the team to use caution when speaking to a patient with an alert roommate in order to maintain as much confidentiality as possible. I asked Dr. Richards about the experience of having two attendings on the same medical team during a follow up interview. He recalled:

With the first attending...very brief presentations, to the point, and then you don't spend as much time in the patient's room chit chatting...[the] second attending...very thorough,

longer presentations, and when you walk in a patient's room, you end up staying there for a long time.

Dr. Richards continued by describing the benefits of rounding from the second attending, "It was very good because when [the attending] talks to patients, you end up learning a lot of medicine...because the way he explains certain things is very good." While Dr. Richards enumerated the benefits of learning from the second attending, he also indicated that both attendings facilitated appropriate learning environments. He said, "both attendings...they created that environment where you wanna learn...it was very non-threatening...very friendly."

Like the ethnographic narrative illustrates, some attendings unabashedly express strong opinions regarding other hospital staff or departments. I observed an attending physician make disparaging comments about nurses on a certain floor. When I asked Dr. Richards about it during a follow up interview, he explained:

Nurses definitely have reputations based on what unit they're on. If you're in ICU...I mean those nurses know what they're doing...they've been there for a long time...longer training...also, they have only two patients [for which they are responsible]...they know a lot.

He then characterized nurses on the general floor as being "good" if they want to do their job right and not being as good if they want to "slack." Dr. Richards noted that he had not been working in the hospital long enough to construct his own generalizations, so one must assume he learned these generalizations from others in the healthcare setting. These tacitly acquired generalizations directly relate to the professional behavior of maintaining appropriate professional relationships with staff.

Some attendings strive to make aspects of professionalism traditionally taught through incidental learning more formal by explicitly highlighting key learning points during table rounds or rounds. Observations with Dr. Nygma provided many examples of the incidental learning being made formal by at least two attending physicians. When referring to a demanding patient, Dr. I instructed the team to use the adjective “choosy” as opposed to the word “whiny” because the former has a better connotation than the latter. During a discussion about anxious parents with a sick child who had not received vaccinations, Dr. I directed the residents to not make the parents feel bad about not vaccinating their child and openly empathized what a nightmare it must be for the parents to feel responsible for the child becoming ill. During a discussion about a treatment plan, Dr. I interjected a reminder for residents to do no harm, as outlined in the Hippocratic Oath. Additionally, after the team finished rounding on a particularly interesting patient case, Dr. C passed out an article about the patient’s condition and reviewed it with the team. Dr. C used the article to highlight why it is important to keep up with current medical literature by drawing a distinction between evidence-based medicine and “eminence”-based medicine. He further noted how the use of recent, relevant, and reputable evidence is important in hospital medicine and even more important in external primary care settings.

During a follow up interview, I asked Dr. Nygma about the articles received from Dr. C and he explained his strategy for storing articles electronically in a cloud drive and organizing them by physiological system so that he can easily access the resources when needed. Dr. Nygma noted, “you can collect as many paper articles as you want, but inevitably you’re going to lose it [sic], so at least Dropbox allows you to keep all those articles in one place...maybe you can use them again in second or third year [of residency] also.”

When asked from whom they were learning, the two participants from surgical specialties indicated they interact with upper-level residents more often than attending physicians. Dr.

Nolan explained:

I think I'm learning mostly from the chief resident as we do rounds in the morning and rounds again in the afternoon. Talking about the plans for the patients and things like that. Certainly whenever the attendings are around we're expected to be there as well, and sometimes they have questions and things. I'd say at least for the surgical intern and the role that I'm in, the chief resident is just there every day. The expectation of them is that they're responsible for the service.

Surgical attendings are not always very visible because they spend most of their clinical time in the operating room. During the later years of residency, upper-level residents spend more time in the operating room with attending physicians. During these times, surgical interns are on their own. As noted by Dr. McCoy, "You're kind of by yourself. You really just have to kind of learn it [how to manage clinical responsibilities] on your own." In contrast, primary care interns interact with both attendings and upper-level residents during rounds and have direct access to attending physicians during clinical time. The discipline-specific format of clinical activities determines who interns learn from most often.

Communication Skill Development

The surgical intern participants described learning what to communicate to patients from observing attendings during rounds or initial meetings with patients. Whenever a surgical attending physician is in the hospital room with a patient, the surgical intern is expected to be there as well. This provides an opportunity for the intern to hear the conversations between attending and patient. These interns described hearing how the attending addresses the patient's

questions and concerns, explains the reason for medical procedures, and explains the risks associated with interventions. Dr. McCoy explained why he benefits from observing these conversations:

I think the biggest thing that I still struggle with is communicating with patients...I'll struggle to say something and tell them what we're gonna do or a problem that they have. Then the attending will come in and say it in like, two sentences that makes 100 times more sense.

When I asked if being concise was his issue with communicating with patients, he replied, "No, I think just doing it without medical jargon, but then also explaining why we need to do something."

Interns realize that attending physicians are not going to specifically carve out time to teach communication skills, so they take any opportunity to observe and learn within the context of patient care, as illustrated by this comment from Dr. Nolan:

If patients ask them [the attending] a question, I hear the explanations for what's going on in terms of the disease and things like that. I always try to pick up what they say, if there's any kind of pearls of wisdom...in terms of how to answer people's questions or put them at ease.

Dr. Nolan further outlined his active learning process during these encounters as "knowing what I've already learned and then sort of actively comparing that to what they're doing."

The format of the ambulatory clinic rotations for the participants did not allow much direct interaction between the interns and the attending physicians. When I observed Dr. Nygma in clinic, he saw patients independently, briefly presented the patient to the attending, and then the attending saw the patient independently. When the attending exited the room, he would

briefly indicate whether the plan Dr. Nygma proposed was adequate. That was the extent of the interaction I observed. The primary care interns in this study had significantly more opportunities to learn how to communicate with patients primarily from observing attendings during rounds in various inpatient settings.

When I observed Dr. Richards on an inpatient service, I observed an attending crouch down beside the hospital bed to get eye-level with the patient and softly touch his shoulder in a caring manner before asking the patient how he was feeling. When I observed Dr. Nolan on an inpatient team, I saw an attending patiently listen and nod affirmatively as the patient recited a litany of complaints about the number of medical tests that had been endured; then, the attending apologized for the length of the patient's hospital stay. When I observed Dr. Nygma on inpatient medicine, I saw an attending enter a patient room and greet the patient and family members by name, gently cradle the sick child, praise the child for medical milestones met, and concisely explain the follow up treatment required after discharge to the parents.

The study participants also described learning how to communicate with patients through trial and error. New physicians make mistakes when communicating with patients. Though these interns prepare by completing simulated encounters with standardized patients (trained actors who portray patients) and by observing others, no experience is quite as powerful as the real-time feedback received from interactions with real patients in the hospital context. Dr. McCoy described this process:

You catch yourself saying things that you didn't really mean to say, and you can see their reaction...[you] don't want to give them too much hope...you don't wanna make them feel too hopeless. You kind of just learn to read their expressions on how much they wanna know.

Like the development of clinical skills through formal learning in the clinical setting, repeated experiences with patients give interns the opportunity to learn not only what to say but how to say it based on the individual patient's needs and preferences.

While talking to patients is of utmost importance, listening to patients and their family members is an essential skill as well. Dr. Nolan described it this way:

Listen to your patients...and the patient's family. We always hear that, and I think that's really important. If someone's family member thinks that something's going on, or if I call a nurse back [and they tell me], "Hey, his brother's really concerned. He [the patient] doesn't seem like himself." If I hear that, I'm gonna go to the bedside pretty quickly because things like that seem to indicate that something's going on. That certainly has played out...a couple of times. They [the family members] just have a sense....It's good to trust or just to look into it. Take it seriously when people are concerned like that.

The intern functions as the liaison between the patient and the medical team and the intern has the most direct contact with a patient and the patient's family. Interns learn to listen to patients' family members because they know the patient best. If a family member indicates that a patient is not acting normal or doesn't seem like himself, the intern cannot ignore or dismiss that information, as it may be extremely significant and indicative of a serious change in medical status.

The participants described learning how to communicate with other professionals in the healthcare setting through trial and error as well. These interns interacted with resident physicians and attendings from within their own department as well as those within other disciplines. They also interacted with nurses, care partners (low-level nursing staff), care

coordinators (social workers), pharmacists, and students from various disciplines. When these interns rotate through different services, they are exposed to the inner workings of that specialty. This allows the intern to learn what patient information is most important to specific specialties, so that when an intern calls consults from that specialty, he knows exactly what kind of information they need in order to properly consider his request. For example, a primary care intern rotating on an obstetrics (OB) service is exposed to that side of medicine and learns which part of the patient's history would be pertinent to an obstetrician consulting on a patient admitted to a general medicine unit. As described by Dr. Richards:

Every time you do a rotation [in a different specialty], you gotta ask yourself why you're doing this rotation. You have to pick certain things [to learn] and move on with your training. You're there for a reason. You're only there for one month. Then you're gonna go back to [your specialty]. Your job is not to learn medicine as much. Your job is to learn what's gonna be important to you in [your specialty's] setting.

After an experience like this, when the intern has a need to call an OB consult, he will know, based on his experience, how to present the reason for the consult efficiently and effectively.

When I observed Dr. Richards during inpatient rounds, I saw him become frustrated when a consulting physician refused to come see a patient in his care because the consulting service was too busy. When I asked Dr. Richards about the incident in a subsequent interview, he explained:

I feel like that's just part of my personality coming out...I'm short-tempered as it is. I feel like that physician...he could have said the same thing in a...better way, better manner. He just came across being not blunt, but just seemed like he didn't care about a patient.

When I asked him about the incident later during the observation, Dr. Richards explained how his lack of medical knowledge contributed to the ineffective communication with the consulting physician and that he still struggles with justifying certain consult calls. The trial and error process described here, with intervention as needed from the attending physician, allows the intern to develop effective communication skills for interacting with consulting physicians.

Dr. Nolan described learning how to communicate openly and honestly with others in the hospital setting to ensure a common understanding of expectations exists between departments, particularly during consults. In an ideal consulting scenario, the intern on the consult service receives a page requesting a consult, goes to see the patient, comes up with a plan, presents the plan to the upper-level resident on the consult service, goes to see the patient with the upper-level resident, modifies the plan as needed, checks in with the attending to get final approval, and executes the plan. However, the reality of medicine is rarely ideal for the intern.

At the beginning of the first year of residency training, an intern takes on as much as possible, as illustrated by this comment from Dr. Nolan: “Early on, I would try to...people please or try to do everything.” Many times, the intern carries the pager for the entire consulting team and will receive two or three pages simultaneously. If an intern does not respond in a timely manner to multiple page requests, the attending physician for the consulting service will be notified. As noted by Dr. Nolan, “if that happens too much, then attendings hear about it...it’s not good. It doesn’t reflect well.”

Medical teams regularly receive consult calls from the emergency department (ED). Unaware of what else might be going on for the consult service, the ED expects immediate responses due to the nature of emergency medicine. As Dr. Nolan explains, “they don’t know all the other stuff that might be going on, so there has to be an interplay and a communication that

happens.” An intern must ask his colleagues for backup support in order to avoid the service receiving a “ding” for missing a page when there are multiple simultaneous requests for consults. Some upper-level residents may use this opportunity to teach an intern how to prioritize by asking the intern how the team should handle the situation and what the intern considers to be the highest priority cases. If backup support is not available, then the intern must openly and honestly explain the situation and reason for delay and expected timeline for response. As noted by Dr. Nolan, the intern has to say, “Okay, hey, I’m doing this one thing right now. I’ll be down there in 45 minutes, approximately.”

Learning communication skills through observation and trial and error directly relates to the professional behaviors of accepting personal errors and honestly acknowledging them as well as maintaining appropriate professional relationships with staff and ensuring prompt completion of clinical tasks. Therefore, learning from these experiences that only occur in the clinical learning environment is integral to the development of professionalism in the new physician.

During observations, I witnessed informal conversations between the interns and their colleagues, including other interns, medical students, and upper-level residents. One resident joked with a medical student about a patient’s butt and the possibility of telling such patients to just leave the hospital. In this instance, one of the study participants called out the unprofessional behavior exhibited by the other resident and reminded him of his position as doctor. The resident defended his unprofessional comments by referencing his late night, indicating exhaustion as the reason for his unsavory comments. The intern nodded understandingly as acceptance of the excuse.

When observing one of the study participants in a team room, I heard other interns speak disparagingly about another department in the hospital. Rather than make a diagnosis, the

department contacted someone on the team for a consult. The other interns thought this was ridiculous since the patient's symptoms correlated directly with the classic symptoms for seizure. The participant agreed by stating, "they never do anything down there...a person off the street could tell [the patient] was seizing." The negative comments about the other department flowed freely and all residents in the team room participated by indicating agreement. Additionally, during time in the team room, the intern was considering ordering a test and asking his colleagues for their opinions. At the end of the indepth discussion, he said, "[expletive] it, I'm doing it." These unprofessional communications of this participant only occurred in the privacy of the team room and were clearly condoned by his resident colleagues.

In contrast, I observed an unprofessional behavior in front of a patient as well. When collaboratively casting the arm of a patient with a fellow intern, one study participant engaged with his colleague in an extremely casual way. When the study participant asked the other intern to hand him something, the intern smugly replied and this study participant called him a "smartass." Significantly, this was a homeless patient, and I was left to wonder whether this behavior was patient-specific or normal for all patient interactions.

The Ebb and Flow of Confidence

For an intern, learning in the clinical setting can be exhilarating, and also humbling. As explained by Dr. McCoy, "every day you learn that you don't know something." It is these ups and downs of actual practice that contribute to vast swings in confidence that characterize so much of the first year experience of a practicing doctor. All four participants referenced changes in level of confidence during the first year of residency.

Increases in Confidence

All four interns experienced a gradual increase in confidence across the entire first year of residency, starting with a low level of confidence at the beginning of the intern year and ending with a higher level of confidence. The participants attributed the increase in confidence to various learning experiences in the clinical environment that resulted in the acquisition of new or refined skills which allowed them to serve as more competent and independent physicians.

Dr. Nygma detailed his increased confidence:

I come to work feeling a lot more confident than what I was before...I remember back during fourth year [of medical school], I'd still always get nervous about having to do an H&P [history and physical exam] on somebody, because what if I forget to ask something? What if I screw up? Now, I feel a lot more confident in those [interview and exam] skills.

Additionally, these participants attributed increases in confidence to increases in autonomy. As noted by Dr. McCoy, "[it's] the confidence in being the one who's actually doing this stuff...completely managing them [patients] from admission to discharge and starting to make decision on my own...without having to ask for approval from someone." The increased independence he experienced contributed to his general increase in confidence across the entire first year of residency training.

The gradual progression of confidence parallels the increase in responsibilities given to interns during the first year of residency training. The higher-level and more complex responsibilities allow interns to gain increased knowledge and refined clinical skills as well as more autonomy. Increase in confidence represents significant change in an intern, for some it is the most significant change they notice about themselves. Two participants reported an overall

increase in confidence as the biggest change they experience during the intern year. When I asked Dr. Nygma the biggest change he had seen in himself during the first year of residency training, he replied, “I feel a lot more confident.” When I asked Dr. Nolan the same question, he replied, “I think my knowledge level and I think confidence.”

For the first time since graduation from medical school, interns celebrate their achievement of obtaining an M.D. degree when they realize the title of doctor actually means something in the clinical learning environment of residency education. Dr. Nolan described this experience as both “empowering” and disconcerting when he recounted going into a patient’s room at the beginning of the year and thinking, “I’m, wait...I’m your doctor?” The title alone does not provide confidence, as confidence is gained only through experience.

For some interns, confidence is boosted by the successful completion of clinical procedures for the first time. During an interview, Dr. Richards described his experience with performing a lumbar puncture (spinal tap) independently for the first time:

I did my first lumbar puncture yesterday. It was a champagne tap, meaning no blood. It was very clear. It was great. But the thing is, obviously people are helping me out, so can’t really take the entire credit, but it was good. Yeah, I mean they’ll say if you need to be humbled, do a lumbar puncture, do a spinal tap because they’re really hard.

Dr. Richards enthusiastically recounted the story to me, highlighting its significance. This memorable learning event resulted in an increase in clinical skill competence and subsequent increase in confidence. The participants also noted that increased competence results from constant repetition of common patient care tasks such as performing a history and physical exam (H&P), determining a diagnosis based on a common chief complaint such as an ear infection, and administering the appropriate vaccinations based on age.

During the holidays, hospitals operate with reduced staffing. A team can have as little as three members including one intern, one upper-level resident, and one attending physician. Due to limited staffing, interns may be required to function at the level of a second-year resident by following a majority of the patients, independently making clinical decisions, and practicing medicine without direct supervision. Dr. Richards experienced this and detailed the effect on his confidence:

At times I was working just at the same level as the resident. I felt like I was making a lot of calls on my own, hosting a lot of work, doing a lot of medicine on my own. I felt like I was making a lot of decisions. That kind of felt good. I felt more independent. Then after that—and my feedback from the attending was pretty good too. I could just feel the confidence coming in.

Additionally, Dr. Richards credited this rotation as his biggest learning curve during the first year of residency training.

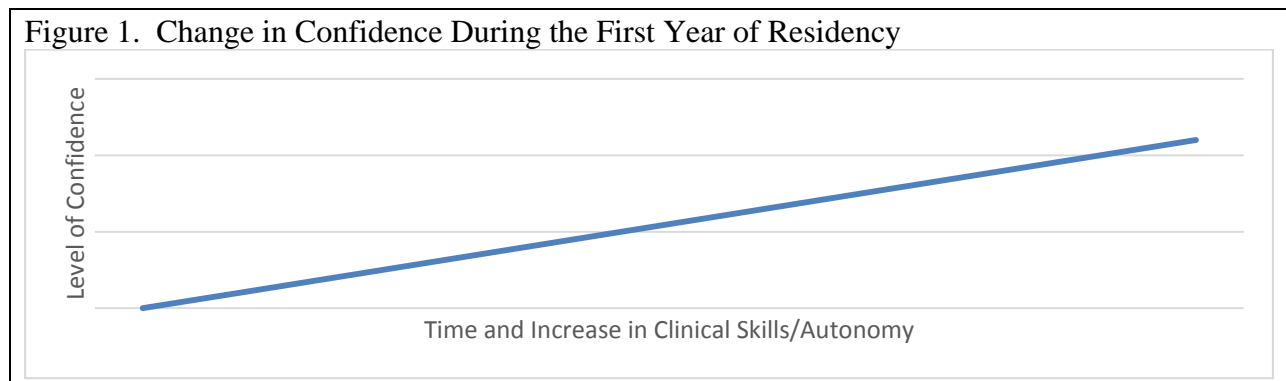
When reflecting on changes in his confidence, Dr. Nolan described a complementary pattern to the gradual yearlong increase in confidence noted by the other study participants. His unique perspective directly related to professional behavior by recognizing the scope of his abilities and by asking for supervision and assistance appropriately. Dr. Nolan noted that he had the least amount of confidence at the beginning of his intern year, which was also the time he was most hesitant to ask for assistance. Dr. Nolan described an increased willingness to ask for help as his confidence increased:

At the beginning of intern year when I knew the least and had the least experience, I was also hesitant about running things up [the chain of command]. Because I was like, “Well, gee. I’m like expected to know how to do these things coming out of med school or

whatever. I should really be able to handle this, let me try and handle this.” I just learned [to] run things up [the chain]....It doesn't matter [if I don't know].

This increase in confidence may have been related to a more developed professional behavior of recognizing the limits of his abilities.

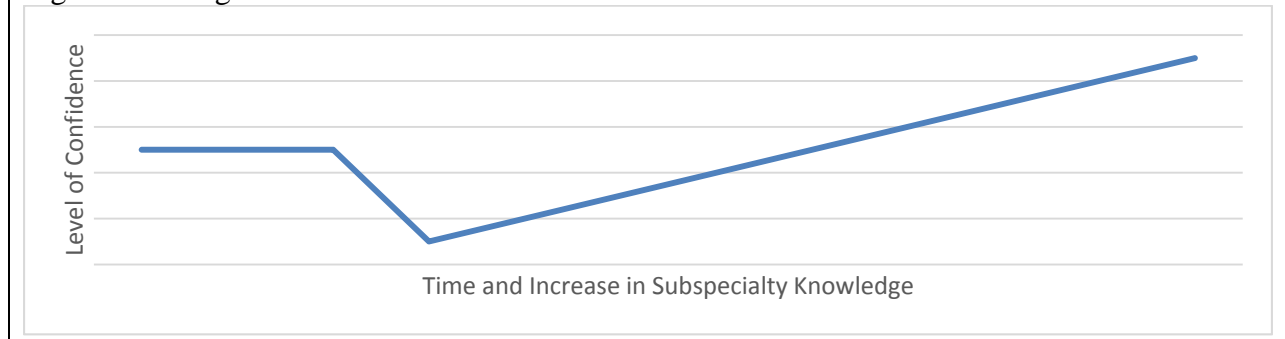
Increases in confidence happen throughout the entire year for interns, at different times and in different ways. The primary contributions to confidence are increase in clinical skill competence as well as increase in autonomy. The incremental increases in confidence follow a gradual pattern across the entire 12-month period, as shown in Figure 1.



Decreases in Confidence

The second pattern described specifically by the two study participants in primary care was a decrease in confidence at the beginning of every new rotation, particularly if that rotation differed significantly from previous rotations. If the learning environment, expectations, or role of the intern differed from previous assignments, the study participant experienced a decrease in confidence. These two study participants described a steady increase in confidence as they learned the specifics of the new environment and understood the varied expectations of the rotation. This pattern is illustrated in Figure 2.

Figure 2. Change in Confidence Within a Rotation



These two interns described the decrease in confidence at the beginning of a rotation as nervousness associated with the unknown features of the new clinical learning environment. Dr. Richards explained how he experienced minor decreases in confidence before every new rotation:

I mean, before every rotation I'm just as nervous, and that hasn't changed since kindergarten. I feel like everyone deals with something new differently, and for me, I always had those butterflies. I don't think those butterflies are gonna go away. Ever.

These two interns considered subspecialty rotations like the intensive care unit (ICU) as separate worlds with unique patients, specialized language, and specific culture. As described by Dr. Nygma:

Every rotation this year is a clear learning experience. For example, last month I did [specialized ICU] for the first time. I had never done a rotation in that in med school. I had only done [general] ICU. [Specialized] ICU is its own world with its own very unique pathologies...learning that world...I kind of felt like I was back in the first month again. By the end of the two weeks, I knew what I was looking for...knew what to look for in terms of certain diseases, and definitely got more of a handle on it.

Dr. Nygma expressed how his ICU experience made him feel like he was in the first months of residency, even though the rotation occurred later in the year. Additionally, as Dr. Richards explained, specialized intensive care environments can be daunting for all trainees sometimes:

[The ICU] is very esoteric, meaning even [upper-level] residents don't even know half the stuff that's going on. Fellows...if you're a first-year fellow you may not even know exactly what's going on. It's very esoteric. Most of the decisions are made by the attending.

In addition to experiencing a general decrease in confidence before each rotation, Dr. Richards described a significant decrease he experienced during one specific rotation with a subspecialty service.

Some of that confidence went in the negative wrong direction because...I felt like I was a third year med student again because everything was brand new. [The] first day was demoralizing. I had to go home, study on my own....You just have to go home, study, watch a lot of YouTube videos, understand the concepts better, and then come back, see the same [condition]...with a different patient. Again, the confidence starts coming back.

This experience not only illustrates the significant decrease Dr. Richards experienced in this particular setting, it shows the importance of informal learning as a supplement to formal learning in order to attain competence and obtain confidence.

The study participants reported an increase in confidence after a couple of weeks of learning in situ on the subspecialty service. Gains in understanding of the inner workings of the service result in confidence increases. New experiences on the wards in a different specialty result in a short-term confidence plunge until both competence and confidence rise again.

Critical Incidents

Study participants experienced critical incidents related to professionalism throughout the first year of residency education. Examples of critical incidents uncovered in this exploration of learning for new physicians include going beyond the call of duty, dealing with death, dealing with difficult patients, and facing personal limitations.

Going Above and Beyond the Call of Duty

Dr. Richards recalled a memorable patient experience which contributed to his realization that what can seem insignificant to the doctor can mean a great deal to a patient. He began by telling me how he encountered the patient just before our interview:

As I was coming in [the hospital] at the ground level, a lady called [out to] me as I was getting into the elevator...it took me a second to realize who that person was because she was wearing a wig. She was my patient...when I was doing Heme-Onc [Hematology-Oncology]. [She said], "thank you. I still remember that day when you sat down and talked to me."

This intern cared for a large number of patients during rotations in various hospital settings. It is not easy for him to remember each and every one, but this particular patient had made a significant impression on him when he first met her:

I remember that day very specifically because I usually come in early, get my all notes done, but that day, it took me 20 minutes just to [speak] with that one patient. During pre-rounds, every minute is very crucial. She was there for a new diagnosis from me and she was going through a lot, you know. People go through hell when they get diagnosed with leukemia or any cancer.

This particular patient encounter differed from others he had experienced on the service because it forced him to modify his normal morning routine. He sacrificed valuable minutes to meet the needs of the patient, knowing that she was going through a terrible experience. Not only was the patient encounter out of the ordinary, the personal connection he made with the patient was special:

She gave [a religious bookmark] to me, and I actually have it on my [bulletin] board in my apartment. I look at it every day and I think of her every day.

This patient inspired Dr. Richards and their encounter impacted him significantly, so much that he kept an artifact of their encounter as a reminder of the event. Not knowing whether he would see her again, he wanted to remember the touching experience of connecting with a patient in such a personal way. The serendipitous encounter at the elevator surprised Dr. Richards:

What do you know? This random lady calls [to] me in a crowd and it happens to be her....for me I wasn't doing anything out of the ordinary, I was just doing what I feel like anyone should be doing—it just meant a lot to her.

Dr. Richards's recollection of the touching patient encounter during his subspecialty rotation highlights his well-developed professional behavior of demonstrating empathy and compassion to his patients. While he considered his compassion ordinary, the patient considered his demeanor extraordinary and his actions as going beyond the call of duty.

Dealing with Death

Dealing with death can be difficult for novice doctors as well as more experienced physicians. Dr. Richards recounted a number of experiences in the ICU setting dealing with critically ill patients. He described the ICU as a difficult place to work because it is hard to contain emotions: “[The ICU is] a miserable place. People die left and right....I have teared up

almost a couple of times.” In the ICU setting, physicians get firsthand experience with death by seeing the how the patient’s family is affected. The experiences in the ICU were the closest encounters with death Dr. Richards has ever seen:

Once when this one person died, his family...[all] the females in his family...were just surrounding his bed. He was gone. They were just crying, bawling. [I] haven’t seen death this closely ‘til now.

Dr. Richards described how the pace of ICU care does not allow for recovery time from significant events such as the death of a patient. Subsequent patient encounters are often influenced by previous difficult encounters:

You go in [another] room. There’s a person laying there and it’s kinda surreal again just realizing that she’s not gonna be there tomorrow. That kind of stuff has been [the] real [stuff] that you don’t learn in med school.

Dr. Richards shared how medical school did not sufficiently prepare him for dealing with death in the ICU and how the real life experiences during residency training provided substantial situated learning. In another situation, Dr. Richards struggled internally based on the actions of his team:

I remember three weeks into interning here I was doing my power weekend in ICU. This homeless guy had a really massive GI bleed. [The team] had already resuscitated him a couple of times earlier that day. And every time, he would just come back. When I saw him, he was just barely alive. Everyone knew he’s not gonna make it.

Dr. Richards described a shared understanding of the patient’s prognosis among members of the team; however, he was not completely comfortable with the limited intervention which followed:

The team was like—we'll do it [resuscitate him], we have to. But are they gonna keep at it, probably not, you know? Because they knew, I guess they had the experience to know that in spite of all their efforts this person is not gonna make it. For me coming in almost a stranger. My idea was that keep at it. It's a life. Don't give up. I guess they know better, you know?

Dr. Richards described trying to reconcile his desire to continue to try to resuscitate the patient with the decision of the team to complete minimal resuscitation efforts. He deferred to the experience of his colleagues in order to make peace with the decision, but this incident illustrates how he struggled with the power of the doctors and team to deal with life and death decisions. Dr. Richards's recollection of these experiences regarding death exemplifies the professional behavior of treating patients with dignity, civility, and respect, regardless of race, culture, gender, ethnicity, age, or socioeconomic status.

Interacting with Difficult Patients

Physicians at every level deal with difficult patients at some point during their careers. The experience can be particularly significant for the intern physician, as he is still developing patient care strategies and learning to moderate his emotions. Dr. Nygma recalled a significant patient experience which highlighted the need for physicians to admit their errors, ask for assistance when needed, and moderate feelings of frustration. Dr. Nygma began my describing his mental state at the time of the incident:

I had done five days of ER shifts in a row at that point. It was the Christmas holiday. It is close to the end of the fifth day. I'm really tired because it's a 12-hour shift...I wasn't at the point where I was able to efficiently do notes while I was on shift, so that resulted in me having to stay another one to two hours after the shift was over. There were days I

wasn't getting home until 2:00 in the morning, and then I had to be back here at 9:00 a.m. for a shift again, so I was really tired at that point.

This participant identified exhaustion as a key factor of this memorable patient encounter, a factor common among all four study participants. Dr. Nygma continued by describing his first impressions, "There was this one family who came in with four kids. I believe it was [a] foster mom and social worker. They clearly had viral infections. I could tell that just by looking at them."

Based on his past experiences and the repetition of making the common diagnosis of a viral infection, Dr. Nygma had already made a tentative differential diagnosis and was confident in his thinking. He then began the physical examinations to confirm his suspicions:

I was examining them one-by-one, and then between the first and the second one, I accidentally forgot to change gloves. That's on me, and she called me out on that. I was like, "Okay, fine. I'll change gloves. Thank you."

The foster mother noticed Dr. Nygma did not put on a new pair of gloves after examining the first patient and did not hesitate to bring this to his attention. He readily accepted responsibility and thanked her for pointing out the error in an attempt to keep the encounter moving along. He then moved on to different parts of the physical exam:

I had initially set four specula [out], since I would have to look in four sets of ears, and I accidentally knocked them down at one point. They hit the ground. I put them in the trash. I ended up getting some more, but then as I'm putting the specula on to examine the second kid, the foster mom called me out again and said, "And you better not be using that dirty specula."

This was the second time the foster mother critiqued Dr. Nygma and his frustration increased.

He tried to recover from this curt critique and return to the patient:

Then, as I'm going back to examine, I hear her say under her breath, "That's just common hygiene. I don't know how you can be a doctor if you don't know that." I will admit I had a moment of weakness. What I did, there's no excuse at that point, but I turned to her and said, "Ma'am, I really don't appreciate your tone right now."

When he tried to continue with the exam, the foster mother questioned Dr. Nygma's common sense as well as his clinical skills and position as physician. This evoked a strong response from Dr. Nygma, one he admits erupted volatily and that he admittedly should have controlled. The foster mother reacted strongly:

Then she went out of the room and yelled, "Is there a supervisor?" I ended up bringing [in] my supervisor. I just ended up signing out two out of the four, since I had only completed physical exams on two of them at that point.

Dr. Nygma knew he needed assistance in dealing with this difficult patient because he was not able to manage his frustration. The professional relationship between doctor and caretaker of patient was broken.

[The] foster mom proceeded to blast me that I was a horrible doctor, she would never refer anyone to me, [and] that I didn't even deserve to be there. At that point, I'm just like, "I don't care anymore," and I just walked out of the room.

Dr. Nygma abruptly ended the interaction with the disgruntled foster mother due to his increasing frustration and removed himself from the situation to avoid further conflict in the clinical environment. This critical incident illustrates this participant's professional behaviors of accepting personal errors and honestly acknowledging them and maintaining appropriate

professional relationships with patients' families. In the end, Dr. Nygma recognized the scope of his abilities and asked for supervisor assistance appropriately.

Recognizing One's Own Limitations

When recalling this memorable patient case, Dr. Andrew Nolan described the expectations others have of him as an intern physician and what happened when he could not meet those expectations. He was faced with his own limitations in a time-sensitive setting and had to perform to the best of his ability in spite of his low confidence to do so. The incident occurred at the beginning of Dr. Nolan's intern year, during his first rotation:

I remember one incident when I was on my trauma rotation. It was actually my first rotation. It was in July...[We] had a patient who had had a head injury and had a head bleed and was also very hypertensive. [He] basically had a hemorrhagic stroke.

The condition Dr. Nolan described is a serious condition that could result in death if not resolved quickly and appropriately. He continued by describing his role in addressing this urgent patient case:

For whatever reason, I was the doctor...helping transport the patient 'cause he was critically ill, and they needed a doctor to go with them. In the meantime...I was caught trying to manage this patient's hypertension because his blood pressure was high, which could cause him to bleed into his brain more. Then I was in the situation of, well, gosh, I know what drug to give. I don't know exactly know what dose. I've never managed this in this acute setting before.

Realizing that his medical knowledge was insufficient, Dr. Nolan described how alone he felt:

Now all of the sudden, I'm the only one here while I'm waiting for the ICU resident...It was like, gee, I wish I knew. I think they [the transport team]—I got the sense that they

were a little bit upset, maybe that they felt that I should have had someone else there or that I should have known because they're trying to acutely stabilize this patient and get him settled.

Dr. Nolan sensed the frustration coming from the team was directed solely at him because he was the only intern on the scene and the only one responsible for managing the patient's hypertension:

I think they were annoyed at me, but I just tried... 'cause a lot of times you find yourself in the situation of, I just need to get myself supervised. I just need to get myself covered. You never want it to be the intern's fault. Whatever decision that I make, I almost always try to involve somebody else. I find that that's usually a pretty good way to go.

Dr. Nolan addressed the urgent situation as best he could but recognized the limit of his own abilities. While acknowledging his responsibility to care for the patient, he also recognized the expectation that the intern ask for assistance rather than make a medical mistake which could negatively impact the patient. This story highlights the professional behavior of recognizing the scope of one's abilities and asking for supervision and assistance when needed.

Reflections

During interviews, the study participants would reflect on various experiences and I observed incremental changes in personal perspectives. In this respect, the interviews were an intervention because these interns rarely had the chance or are required to reflect on their learning experiences in the clinical environment. I noticed they made use of their time with me to reflect on the nature of their experiences—what they were, how they found themselves in these situations, and what role they each had in creating or maintaining the situation.

Thinking Like a Teacher

Even though he is still a learner in graduate medical education, Dr. Nygma reflected on how he sees medical education in a new light now that he is on the other side of undergraduate medical education. He detailed his expanded understanding of the role of intern as teacher in the clinical learning environment:

I remember a lecture in the beginning of the year about teaching medical students, and a PowerPoint saying that you're not there to be their friend, that you're there to be a supervisor. I think that's halfway true. You are definitely there to be a supervisor; you are there to make sure that they're there on time, that they can execute a good H & P [history and physical exam].

During observations of Dr. Nygma, I saw him interact with medical students while rounding. Along with the other residents on the team, he would teach students about interpreting test results, recognizing common symptoms, and treating common conditions. In addition to teaching medical students medical knowledge, Dr. Nygma described how interns introduce medical students to the different medical disciplines:

But at the same time you are allowed to be friends with them going forward, and I think that makes the experience a lot better for them, and who knows—maybe they'll enjoy their [discipline] rotation so much they'll wanna do it [as a career].

Teaching medical students has changed Dr. Nygma's perspective of medical education:

“[L]ooking at it from the perspective of now being the teacher instead of the student has been a little bit different.” During this reflection, Dr. Nygma considered the role of intern as teacher, the content of what the intern teaches, as well as the incidental learning medical students gain from rotating with different disciplines.

Seeing the Patient as a Person

Dr. Richards recalled a recent conversation with medical students in which he reflected on the hardest part of being a doctor. He considers maintaining a view of the patient as a person and maintaining high levels of compassion and empathy essential requirements for any physician.

He told fourth-year medical students, “the hardest thing about being an intern...being a physician in training...it's not learning medicine. It's actually learning how to be a human being when it comes to interacting with patients.” Dr. Richards highlighted the context of being in training because the tough demands of the first year of residency education have the potential to negatively affect the care an intern provides to his patients. Dr. Richards perceived that increased competency in clinical skills during residency is easier than maintaining appropriate compassion and empathy:

By the time you're done with your training...you'll be a good doctor, hopefully. What's really hard is making sure that you're still compassionate, you're still empathizing with patients...[you can] become a robot, which I feel like every intern becomes at one point...you're the one putting in orders and writing notes.

Dr. Richards highlighted how the repetitive nature of patient care tasks allows it to take precedence in the clinical setting. Additionally, he warned the soon-to-be-interns, “It’s very easy to get jaded.” With this warning, Dr. Richards also shared one of his strategies for seeing the patient as a person, “[When writing notes] I try to replace ‘the patient’ with ‘he’ or ‘she’ or ‘Mister So-And-So’ because, you know—personalize it. I feel like, you just got to keep yourself in check.” This strategy allows Dr. Richards to continually focus on the patient as a person

rather than letting his perception of patients slip into an impersonal state while he processes routine patient care tasks.

Putting the Patient First

When reflecting on the amount he learned during the first year of residency, Dr. Nolan described a change in perspective required of all interns after graduating from medical school. The change in perspective involves putting the patient's needs ahead of the intern physician's needs. He begins by describing what he learned about managing his own pride:

The more you learn the more, the more you realize [how much] you don't know. [I learned] the importance of checking your attitude or checking your pride at the door. If there's any pride about "oh my gosh, I don't know this"...it just doesn't matter.

In order to put the patient first, this intern declared a need for the new physician to set aside personal pride and any attitudes associated with not knowing. Dr. Nolan described how this plays out in the clinical learning environment:

I don't care anymore that if someone's gonna be upset at me that I don't know what this particular thing on the EKG means or something like that. Yeah I'm gonna look it up and learn about it, but ultimately I'm passing that information along and working with the chief and trying to figure out the right thing to do for the patient.

He highlights the importance of putting the patient's needs ahead of his own learning needs and further illustrates how a new physician cannot dwell on what he doesn't know and worry about what others may think of his lack of specific medical knowledge. Dr. Nolan explains how this perspective differs than what he thought in medical school:

[It] is a huge mentality shift from medical school...I think the more that students could realize that [it's about the patient and not about you] earlier on and that culture shift could take place in med school, I think the better off we would all be.

Dr. Nolan described the need for new physicians to change their perspective on priorities in the clinical setting. Unlike medical school when learners are overly concerned with getting good grades and obtaining high scores on evaluations for themselves, the priority in residency training is the patient and the patient's need for competent medical care. Dr. Nolan asserted a new physician must acknowledge his limitations and set aside his ego in order to put the patient first. He described patient safety as superseding any personal needs of the intern.

The Hidden Curriculum

What is unintentionally transmitted to interns in the clinical learning environment affects development of professional behaviors. These interns described the hidden curriculum in terms of how things work in the hospital, how to get ahead in residency, and what residency programs value. What these interns learned about the bureaucracy of medicine can affect how they ensure prompt completion of clinical, administrative, and curricular tasks. What these interns learned about how to get ahead in residency affects how they respond to clinical responsibilities and how they carry out timely interactions with colleagues, patients, and their designated caregivers. Finally, what these interns learned about what is valued by the residency program as opposed to what is valued by specific attending physicians affects all professional behaviors.

Navigating the Bureaucracy of Medicine

The study participants learned how to navigate the bureaucratic systems required for patient care during the first year of residency training. Many times, the logistical constraints imposed by bureaucracy determine the specific treatment a patient receives. Dr. Nygma

described this as “the dark side” of medicine. The hidden curriculum includes how the medical field really works and how to navigate inordinate amounts of red tape that restrict the treatments a doctor can prescribe. Interns do not learn about the bureaucracy of medicine during medical school; this hidden curriculum is specific to graduate medical education because learners are engaged in and responsible for higher levels of responsibility in patient care than are medical students. When interns are responsible for day-to-day patient care tasks, they begin to see the bureaucratic obstacles such as coordinating care after discharge. Many times, the availability of a discharge placement, or lack thereof, supersedes what may be best for the patient.

It appears the hidden curriculum of the bureaucracy of medicine is more significant for interns in primary care fields because interns in surgery receive assistance completing discharge tasks and navigating bureaucratic obstacles. Experienced nurse practitioners on surgical services work directly with social workers and care coordinators to set up outpatient labs, secure home health services, complete FMLA (Family Medical Leave Act) paperwork, and plan discharges based on whether a patient is covered by Medicaid, Medicare, or private insurance. Dr. McCoy described the bureaucracy of medicine as “how hard it is to get stuff done in a big hospital” and expressed gratitude for the ancillary staff who assist with these tasks. According to Dr. McCoy, “they do pretty much everything for us;” however, “we do some of that, and we learn it ‘cause they’re not here all the time.” In this respect, the hidden curriculum teaches surgical residents that they should not be extremely concerned with the behind the scenes work, because someone else will take care of it.

If surgical interns have limited knowledge of certain bureaucratic processes because they have support staff, this could lead to complications in patient care when support staff is not available. Additionally, this could lead to surgical residents neglecting other responsibilities in

the clinical environment because they operate under the assumption that support staff will be available for the tasks they identify as lower priority.

Getting Ahead in Residency

Throughout the entire study, Dr. Richards explained and demonstrated how to get the most out of residency education. His interviews always included a reference to the amount of work and the consistent internal motivation necessary to succeed in residency. His observations always showed his eagerness to learn and dedication to learning. During one interview, Dr. Richards explained:

It was all about connections. I mean, if you're willing to work hard people notice that. Making connections is one thing and then you've actually gotta walk the walk too....If you make that good first impression, they'll let you take more initiative. If you don't, then they're gonna do most of the talking.

This aspect of the hidden curriculum teaches residents that if you show initiative, then you'll get additional experiences that somebody else might not be afforded. Dr. Richards told me that when he expressed interest in specializing further in a fellowship, an attending gave him a copy of the book that the fellows use. Another attending asked him to interpret some advanced test results. When Dr. Richards did so correctly, the attending gave him extremely positive feedback and then invited him to meet after the rotation to discuss the specialty and potential projects on which they could collaborate. Throughout the first year of residency, Dr. Richards was rewarded for showing initiative in ways beyond high evaluations.

Learning About Differing Values in Residency Training

During medical school, students are evaluated on demeanor, appearance, and other general professionalism behaviors and medical students are, perhaps, overly concerned with

“looking good.” Residency programs evaluate interns and upper-level residents on more specific behaviors and these study participants benefit from being “already in” by virtue of their employment, so they are less concerned with appearance and more concerned with actual competence. However, what is valued at the program level may conflict with or complement what is actually valued in the clinical learning environment, since the clinical learning environment is highly influenced by the characteristics and preferences of attending physicians.

As noted by Dr. Nolan, some attendings don’t want to hear “I don’t know” from an intern because they equate it with not caring, while others may welcome such comments because they equate it with authentically recognizing one’s limitations. Interns experience varied attending personalities and preferences throughout residency. Some attendings require strict adherence to policies about attire and personal appearance, whereas others may not care if an intern wears scrubs every day, just as long as they provide exemplary patient care. Some attendings value humility as opposed to others who value confidence. Some attendings value process over product whereas others are only concerned with successful patient outcomes. Some attendings micromanage all patient care tasks while others defer responsibility to the team.

These study participants often turned to upper-level residents for advice; however, attendings change over the years, and what one upper-level resident experienced a couple of years ago may not hold true for a current intern. Dr. Richards described the information he received:

My residents would give me feedback, “Oh by the way, this attending prefers this, and this, and this.” One thing I’ve realized so far [is] they haven’t been right for the most part. Mainly because they had those attendings three years ago.

If the intern modifies his clinical practice based on subjective assessment from other residents which could be outdated, he may take shortcuts or complete tasks in a manner the attending deems unprofessional. Dr. Richards committed to not relying on favorable opinions of attendings or becoming anxious based on unfavorable opinions of attendings:

If you just go in with an open mind, I feel like that's the best way of going in. If you don't know anything about the attending, you're better off just figuring out on your own, instead of relying on somebody's subjective opinion.

Dr. Richards highlighted the importance of entering each specific rotation without preconceived notions of how the attending in charge of the services practices medicine or teaches.

Sometimes, interns are left to decipher what is actually valued within the attending-specific learning environment, as it can differ significantly from the espoused values of the residency program. As depicted in the ethnographic narrative, an attending physician can adamantly disagree with another faculty member regarding the administration of educational programs and the educational activities required. I observed such an encounter in the presence of Dr. Nolan. The attending shared his disagreement with the program director and frustration with the decision in a public setting, in front of interns and other residents. When interns hear these disagreements, they are hearing two different messages. In this specific instance, the attending was frustrated because the residency program director eliminated the presentation requirement for interns. At the attending level, the presentations are valued. At the residency program level, the presentations are not valued. If asked to do a presentation by the attending, the intern has to reconcile how the request differs from what the program dictates and whether he should complete the task as required which is in conflict with the directive received from the program

administration. Mixed messages from the hidden curriculum such as these influence and subvert the formal curriculum.

Summary

The chapter provides rich descriptions of the study participants' learning experiences during the first year of residency. An ethnographic narrative at the beginning of the chapter created from interview and observational data illustrates the combined experiences of the four study participants. Additional sections chronicle the learning these interns experienced in the clinical learning environment.

Formal, informal, and incidental learning experiences in the clinical learning context are outlined and the power of incidental learning is highlighted. All four study participants identified significant learning related to communication skills. The interns detailed learning from attending physicians through observation, learning from patients and their families through trial and error, and learning from colleagues through professional as well as informal interactions. The study participants recounted increases and decreases in confidence related to time and the increase of clinical skills, responsibility, and autonomy. These interns also reflected on critical incidents, the nature of their learning experiences, and what they learned from the hidden curriculum.

Chapter VI

Conclusions, Implications, and Recommendations

The research study was designed to describe the learning experiences of new physicians during the first year of graduate medical education, identify which learning experiences and critical incidents contribute to the development of professionalism, and examine the influence of the hidden curriculum on what and how interns learn to become professionals. The study answers the call for more qualitative research in graduate medical education to answer research questions regarding learning, particularly the influence of experiences, role models, and curriculum on the development of professionalism in resident physicians (Passi et al., 2013; Sullivan & Sargeant, 2011). The findings of the study contribute to the ongoing discussion in the field of medical education on how to effectively teach professionalism and foster professional identity development.

The study used an exploratory case study design in which four first-year resident physicians participated in interviews and observations in the clinical learning environment. Each intern's experience was considered an individual case within the larger bounded system of residency education at UAHS. A cross-case analysis revealed similarities and differences in learning experiences among the four study participants. The findings offer evidence to answer the following research questions:

1. Which educational experiences contribute to the development of professionalism in the physician's first year of residency training?

- a. Which formal, informal, and incidental learning experiences contribute to the development of professional behaviors?
 - b. Which experiences are most likely to result in learning that is transformative (Mezirow, 1991) for the new physician?
 - c. What are the critical incidents (Brookfield, 1990) which contribute to learning?
2. How does the hidden curriculum (Hafferty, 1998; Phillips, 2009) of medical education influence what is learned about professionalism during the physician's first year of residency training?

This chapter includes my discussion of the findings of the study regarding the importance of time in graduate medical education, role modeling in the clinical learning environment, evidence of transformative learning, and the impact of the hidden curriculum. I offer conclusions for the research questions and present implications for medical education at both the undergraduate and graduate levels. Limitations and delimitations are outlined and the chapter ends with recommendations for future research.

As with all qualitative studies, this study's findings are not intended to be generalized to a larger population, as they represent only the experiences of a limited number of first-year resident physicians in a particular learning context with particular personal characteristics. However, these findings and conclusions add to the current literature on the development of professionalism in medical education and contribute to what we know about how new physicians learn professional behaviors.

Discussion of the Findings

The research study data lead to four major findings regarding the learning these four intern physicians experienced during the first year of residency training. The first finding depicts

the overpowering importance of time and the overwhelming pressure to be efficient both within and outside the clinical learning environment. The second finding presents evidence of transformative learning within the study participants' learning experiences. The third finding characterizes role models identified by the study participants and details the role modeling observed in the clinical learning environment. Finally, the fourth finding illustrates the ubiquitous nature of the hidden curriculum in graduate medical education.

The Importance of Time in Graduate Medical Education

The findings of the study reveal the importance of time, or lack thereof, in all facets of graduate medical education and during life as an intern physician. All four study participants characterized time as a precious resource and described the pressure to be efficient within and outside of the clinical learning environment in order to meet the demands of being an intern and maintain personal relationships. The study findings support a number of assertions about time found in recent literature on graduate medical education.

Working long hours is traditionally accepted as a normal component of residency training and a rite of passage for new physicians; however, recent research has shown the negative effects of physician fatigue on patient safety (Philibert, Nasca, Brigham, & Shapiro, 2013). Dr. Richards' description of the intern year as hard because of the time commitments aligns with this traditional view. The ACGME has taken steps to address the issue of long hours through issuing duty hour requirements for all U.S. accredited residency programs. Duty hours refer to the amount of time resident physicians spend on clinical experience and education:

[Duty hours] include patient care (both inpatient and outpatient); administrative duties relative to patient care; the provision for transfer of patient care; time spent in-house

during call activities; and scheduled activities such as conferences. Duty hours do not include reading and preparation spent away from the education site (ACGME, n.d.).

In 2003, an 80-hour workweek requirement was instituted for resident physicians and as a result, residency training programs changed scheduling and expectations for resident physicians in order to comply. The current ACGME standards are based on updated duty hour regulations implemented in July 2011. These changes resulted in a number of challenges for residency programs including how best to ensure coverage of clinical duties as well as allocate time for on-site curricular requirements (Quillin et al., 2016).

The interns in this study described the struggle to appropriately allocate time for patient care, administrative tasks, handoffs, formal learning within the clinical learning environment, as well as distributing attention on informal learning and personal needs outside the clinical learning environment. Some of this struggle for balance may be attributed to the time-intensive nature of residency training and some of the difficulties may be attributed to the duty hour requirement.

All four participants commented on the pressure to be efficient in the clinical environment. When describing a particularly challenging day with complex patient care encounters, Dr. Nygma noted how efficiency in the clinical environment directly affects patient safety. Additionally, Dr. Richards recounted how inefficiency during patient care lead to an increase in stress for him. Both Dr. McCoy and Dr. Nolan specified learning prioritization and efficiency as the most significant learning during the first year of graduate medical education.

Hoffman and Donaldson (2004) describe time sensitivity as a continuum of the distribution of time among teaching, learning, patient care, and other commitments. The authors found that during times of high patient volume, learners spent more time on direct patient care as

a priority above any other activities (Hoffman & Donaldson, 2004). I observed this modification of time allocation in action when I observed Dr. Richards not take part in the learning during rounds, something he valued greatly, and complete patient care tasks instead. The authors also found that learners were limited to on-the-spot-reflection during clinical time with a high patient census (Hoffman & Donaldson, 2004). I consider this a contributing factor to the lack of critical reflection of these study participants discussed later in this chapter.

All four participants described difficulty allocating sufficient time outside the clinical environment as well. Dr. McCoy, Dr. Nygma, and Dr. Richards commented on how hard it was for them to read and study outside the clinical environment. Dr. Nolan described how lack of time affected his relationships.

Many studies have shown how burnout can adversely affect physicians personally and negatively impact the quality of care physicians provide their patients; however, there is little evidence detailing how to address this widespread systemic problem (Shanafelt et al., 2012). Another challenge, particularly for surgical trainees, is the need for learners to modify their learning style if decreased clinical hours result in learning deficiencies due to fewer hours in the operating room (Quillin et al., 2016). The ACGME created and implemented duty hour standards to help improve patient safety as well as to help ensure resident well-being (Lin, Lin, Auditore, & Fanning, 2016), yet a full understanding of the implications of duty hour restrictions has not been obtained. The findings from the study confirm the impact of limited time, the potential for burnout, and the ramifications of the duty hour restrictions for these interns.

Evidence of Transformative Learning

The study participants described formal, informal, and incidental learning experiences supported by observations in the clinical setting to indicate these interns experienced all three

types of learning during the first year of residency training. Dr. McCoy characterized the formal conference sessions as beneficial for obtaining medical knowledge necessary to pass board and in-service exams. Dr. Nygma explained how repetition during patient care led to learning how best to diagnose and treat common conditions. Dr. Richards designated the majority of the learning in the clinical setting as learning by doing. When I observed Dr. Nolan give a presentation, the focus was how to classify a medical condition and how to perform a surgery to treat the condition. These interns focused on the task-oriented nature of the learning when describing their formal learning experiences. As defined by Mezirow (1991), instrumental knowledge is scientific cause-and-effect knowledge. Therefore, I classified the formal learning experienced by the participants as instrumental knowledge.

Similarly, I classified the informal learning described by the four interns as instrumental knowledge. All four participants described their informal learning in terms of building medical knowledge through reading and studying outside of the clinical learning environment. Dr. McCoy, Dr. Nygma, and Dr. Richards spoke of reading textbooks and articles at home after work hours. Dr. Nolan recounted an instance when he sought additional evidence after hours in order to learn how to treat a patient he had seen earlier that day. The informal learning as described by the study participants is also scientific cause-and-effect knowledge.

In contrast, I classified the incidental learning of communication skills experienced by these interns during patient care activities as communicative learning. As defined by Mezirow (1991), communicative learning is socially-constructed and interpretive, consists of values and beliefs, and includes knowledge about self, others, and social norms. The communication and interpersonal skills garnered from role models, colleagues, and patients in the hospital setting can

be considered communicative knowledge because what was learned involved how to listen, interact, and communicate with others.

Dr. Richards described the significant communicative knowledge learned through experiences with a role model, Dr. K, whom he thought embodied the values and beliefs of an ideal physician. When learning physical exam techniques from Dr. K, he also learned how to show the patient that he genuinely cares through action and communication. Dr. Richards learned impressive amounts of technical knowledge but also learned strategies a leader can use to show members of the team that the leader genuinely cares.

During observations of Dr. Nygma and Dr. Richards, I saw three attending physicians exhibit varied professional behaviors. One attending insisted students and interns give succinct patient presentations and interrupted those presenting in order to finish rounds more quickly. I interpreted this as transmitting the value of efficiency along with this physician's belief that rounds should be short. Another attending spent significant time interacting with patients during rounds by educating them about treatment plans. This highlighted the value of patient education and this physician's belief that rounds should take as long as necessary. Another attending instructed team members to use certain words to ensure positive connotations and modeled how to show sincere empathy to patients and their families. This conveyed the value of showing empathy during patient care as well as this physician's belief in the power of language. These contrasting styles of interpersonal interactions modeled by these attending physicians represented distinct types of communicative knowledge learned incidentally by these two interns.

Study participants also described learning communicative knowledge from patients as well as other colleagues. Dr. McCoy described learning how to best communicate with patients by trying various techniques and modifying them based on the patient's reaction. Dr. Nygma

and Dr. Richards expressed the importance of learning rotation-specific norms from colleagues in order to be successful in settings with unique subcultures. Dr. Nolan enumerated the need to learn how to communicate openly and honestly with colleagues in order to set clear expectations for the timeline of patient care. The communicative knowledge gained incidentally through interactions with patients and colleagues is value-laden and constructed socially within the clinical learning environment.

All four study participants described a gradual increase in confidence across the year of residency training. The participants described feeling more confident after performing complex medical procedures correctly and when making decisions independently. The longitudinal increase in confidence described by these interns resulted from gains of instrumental knowledge including medical knowledge and clinical skills which resulted in increased autonomy.

The two primary care interns described decreases in confidence before specialty rotations with unique environments and attributed the decrease to a lack of communicative knowledge. Dr. Nygma noted his limited knowledge of the norms of the highly-specialized environment of the ICU. Similarly, Dr. Richards felt demoralized due to his lack of knowledge about how things worked in the ICU. The periodic short-term decreases in confidence recounted by these two participants resulted from an initial deficiency in communicative knowledge about the subspecialty environment.

Using the theoretical lens of transformative learning theory, the critical incidents experienced by the study participants can be characterized as disorienting dilemmas or trigger events for these learners; therefore, the critical incidents have the potential to activate transformative learning. The critical incident of going above and beyond the call of duty recounted by Dr. Richards is an example of an experience that did not fit with expectations. The

intern characterized his actions as typical and the patient considered his actions extraordinary. The critical incidents of dealing with death and interacting with difficult patients described by Dr. Nygma and Dr. Richards are examples of personal traumatic events. Both of these incidents affected the interns significantly and personally and remained vivid memories for both new physicians. Finally, the critical incident of recognizing one's own limitations experienced by Dr. Nolan is an example of being challenged in clinical care. When he did not know what to do for a patient, his colleagues expressed frustration. Dr. Nolan faced his limitations head on and stretched his abilities in order to perform. As a result, he experienced significant learning. The critical incidents detailed by these three study participants would be appropriate content for critical reflection and critical self-reflection; however, the study participants did not describe or display critical reflection or critical self-reflection in my presence. The reflections of these three interns, particularly Dr. Nolan, indicate a self-awareness of a transformational perspective still being formed, with the potential to be acted upon in the future.

During observations, I witnessed all four interns engage in reflection-in-action, defined by Schön (1983, 1987) as the ability of one to think on his or her feet while engaged in action. During interviews, all of the study participants engaged in reflection-on-action, defined by Schön as the process one engages in after action in order to analyze reactions to the situation and the reasons and consequences associated with it. The study participants reflected on specific learning experiences as well as their overall learning during the first year of residency education. Schön asserts one of the defining characteristics of professional practice is one's ability to engage in continuous learning through reflection-on-action. The study participants exhibited the capacity for reflective practice; however, none of the reflections provided by participants can be classified as premise reflection. According to Mezirow, premise reflection involves asking why

a person holds a particular perspective and is the type of reflection most likely to lead to transformative learning.

These reflections can be characterized within the types of reflection defined by Mezirow (1991): a) content reflection, examining the content of a problem; b) process reflection, how one acquires a particular belief; or c) premise reflection, asking why it is important to consider a belief. Dr. Nygma described seeing medical students in a new light since he is now expected to teach them. This reflection centered on how best to teach medical students; therefore, it can be classified as content reflection. Dr. Richards recognized seeing patients as people as the hardest aspect of being a new physician. When describing his perspective, Dr. Richards specified his thoughts and strategies; therefore, it can also be classified as content reflection.

Dr. Nolan detailed how he now prioritizes the patient's needs above his own and noted this was different than what he did in medical school. When explaining this change, the participant detailed the specifics of his point of view as well as the reasoning behind the change and new view. Therefore, this can be classified as process reflection because it included how he came to believe this. This participant was in a position to experience transformative learning; however, I did not obtain evidence of premise reflection, revised habit of mind, or action required for perspective transformation. Further interactions with Dr. Nolan may have revealed a transformed habit of mind and the experience of transformative learning.

Role Modeling in the Clinical Learning Environment

People learn from one another through imitation and modeling, and learners acquire behaviors and ways of being they deem successful through the observation of others (Bandura, 1986). Historically in medical education, students and trainees have followed the examples of experienced practitioners or competent colleagues whom they respect and trust (Crues, Crues,

& Steinert, 2008; Jaye, Egan, and Parker, 2005). Dr. Nolan, Dr. Nygma, and Dr. Richards described the clinical learning environment as attending-specific because the personality, teaching style, communication strategies, and overall demeanor of the attending physician dictated what kind of learning experience it would be for these interns. Their comments regarding the differences between attending physicians indicate the interns had observed and assessed the behaviors and ways of being of their superiors.

In the medical education literature, role models are defined as individuals who inspire and teach by example and are admired for their ways of being and acting as professionals, both consciously and unconsciously (Cruess, Cruess, & Steinert, 2008). As noted by Carter et al. (2016), the apprenticeship model of residency training gives new physicians exposure to the skills, knowledge, attitudes, values, and ethical beliefs of role models and the opportunity to adopt them, which is essential in becoming a doctor. While other qualitative researchers have examined the process of role modeling by explicitly asking participants to identify doctor role models (Passi & Johnson, 2015), I chose to ask participants from whom they were learning in the clinical environment. I inferred their characterizations as role models based on the participant's descriptions. This yielded the identification of two specific role models and illuminated the impact they had on one participant.

Dr. Richards identified two positive role models during the study, Dr. J and Dr. K. He described Dr. J, an attending physician, as exceedingly intelligent, immensely approachable, and highly professional. These relate to the superlative clinical attributes, teaching skills, and personal qualities described in the literature (Cruess, Cruess, & Steinert, 2008). Dr. Richards further lauded Dr. J for his balance of these positive attributes and called him the epitome of a physician. For these reasons, I interpreted Dr. J as a role model for Dr. Richards. A recent

systematic review of the literature regarding doctor role modelling noted that role modeling is effective when teachers explicitly describe and explain their behaviors and clinical decision making (Passi et al., 2013). Dr. Richards explicitly recounted how Dr. K tells residents what she is thinking and instructs learners on how they should be thinking.

Based on the results of a qualitative study of the process of role modeling, Passi and Johnson (2015) formed an emerging theory of the processes involved in role modeling in medical education which includes two distinct phases. The first phase is the exposure phase which involves the doctor as role model demonstrating professional attributes to the learner (Passi & Johnson, 2015). The professional attributes outlined include clinical expertise, relationship with patients, relationship with colleagues, relationship with students, personality, and inspirational characteristics. Dr. Richards described the attributes of a second attending physician, Dr. K, which match those defined by Passi and Johnson. Dr. Richards described observing Dr. K examining sedated and intubated patients, communicating with patients in a caring way, effectively managing a large multidisciplinary team, providing constructive feedback to students, exhibiting care for all she encountered, and exhibiting the type of doctor he wants to be in the future.

The second phase described by Passi and Johnson (2015) is the evolution phase which involves seven stages initiated by the learner. These include observation, judgement, assembly, emulation, experimentation, adaptation, and assimilation. In multiple interviews, Dr. Richards described how he was inspired by Dr. K through observation and noted he had not learned as much from any other attending physician. He consciously made a judgement to follow the observed behaviors of Dr. K and detailed how he modeled his patient encounter notes after hers. Through his description of Dr. K as a person and her style of practice, I inferred that Dr.

Richards had assembled numerous attributes from this role model to emulate in his own behavior. During observations, I witnessed Dr. Richards skillfully examining patients, empathically communicating with patients and their families, showing care for patients including those not under his direct care, while working effectively with his team. These observations serve as evidence of emulation, experimentation, adaptation, and assimilation, the final stages in the theoretical model of role modeling in medical education as described by Passi & Johnson.

Interpreting Dr. Richards's interview and observation data using the exemplary characteristics of doctor role models detailed in the literature (Cruess, Cruess, & Steinert, 2008; Passi et al., 2013) and the theoretical model of the process of role modeling in medical education (Passi & Johnson, 2015) reveals how this intern's learning from two role models during the first year of graduate medical education directly aligns with the current literature regarding role models in medical education. These interpretations of this study participant's learning confirm multiple assertions about the effectiveness and significant impact of role modeling in the clinical learning environment.

Role modeling is relational in nature and influences the development of professionalism and contributes to professional identity formation (Goldie, 2012; Passi & Johnson, 2016). As noted by Cruess, Cruess, and Steinert (2008), medical students and resident trainees have observed that some colleagues and clinical teachers are poor role models. Repeated negative learning experiences from poor role models may adversely impact the development of professionalism in both medical students and resident physicians (Kenny, Mann, & MacLeod, 2003). The findings of the study also describe such negative role models, an aspect of the hidden curriculum.

One participant told me his use of the legacy code to access medical supplies was modeled by an upper-level resident, without regard for the ethical issues associated with not charging supplies appropriately. The attending physician who publicly disagreed with the program director and the attending physician who made sexist remarks about nurses modeled unprofessional behavior. In a subsequent interview, a participant condoned the comment about nurses (“they might be doing their nails”) and made general remarks about nurses in the same tone. When I heard a participant express frustration with another medical department and curse, his resident colleagues exhibited the same behavior.

Role models teach by example while they are doing other things and function in all three curricula in graduate medical education, including the formal, informal, and hidden (Cruess, Cruess, & Steinert, 2008). According to a systematic review of the literature regarding doctor role modelling, negative role modeling occurs most frequently in the informal and hidden curricula as a form of vicarious learning (Passi et al., 2013). Incidental learning from role models and the hidden curriculum are difficult to distinguish when examining the learning experiences of intern physicians because they are inextricably intertwined and connected at various levels.

The Impact of the Hidden Curriculum

Study participants experienced the hidden curriculum of graduate medical education through incidental learning in the clinical learning environment. Dr. McCoy and Dr. Nygma described gaining instrumental knowledge about the bureaucracy of medicine by comparing what they learned regarding official hospital processes and procedures with what actually happened in the course of caring for patients. The overarching theme expressed by both study participants depicted the bureaucracy of medicine as dictating the quality of care patients receive

and as an obstacle for effective patient care. As noted by Martimianakis and Hafferty (2016), health care professionals create workarounds, temporary remedies of systematic flaws, with the best interests of the patient in mind to overcome the obstacles presented by the bureaucracy of medicine. Workarounds illuminate how the formal curriculum does not properly align with the hidden curriculum and identify the organizational and systemic processes and procedures that need overhaul (Martimaianakis & Hafferty, 2016).

The hidden curriculum of graduate medical education reinforces the hierarchical culture of medicine. The hierarchy of medicine places physicians at the top while other members of the healthcare team follow; however, there is also a hierarchy among physicians based on specialty. Typically primary care physicians are considered lower in rank than specialists such as surgeons. This hierarchy is based on the high levels of risk associated with specialty practice as well as the financial contributions of specialty services to the hospital system. As described by Dr. McCoy, interns in surgical specialties receive direct support from nurse practitioners to complete bureaucratic paperwork while interns in primary care specialties are responsible for completing their own. In this respect, surgical interns receive more support than primary care interns, thus the hidden curriculum reinforces the hierarchy among physicians.

The attitudes and behaviors of attending physicians also reinforce the overall hierarchy of medicine. By making disparaging comments about nurses, an attending physician reinforces the perceived superiority of doctors above support staff. New physicians begin to assimilate the everyday culture of medicine on the first day of residency training. Hafferty, Gaufberg, and O'Donnell (2015) explain:

Within this context, it is helpful to think of trainees, particularly new trainees, as hypersensitive readers of the new environments they encounter. They are strangers in a

strange land, and thus desperately engaged in trying to “make sense of things.” As such, neophyte students are able to notice the wrinkles and nuances that actually make up most communities and group activities. However, as trainees move deeper into the culture of the group they seek to join (in this case the culture both of their medical school and the medical profession as a whole), they accept and become desensitized to the nuances and inconsistencies that once grabbed their attention. They “see less” as more and more of their surroundings become taken for granted. They become more like those core insiders for whom “what is” is “what it should be.” (p. 133)

Value-laden comments from attending physicians convey the social norms and interns may not be conscious of what they are learning. When the participant defended the sexist comment made by the attending, the significant impact of the hidden curriculum was exposed because the intern had already adopted the social norm the attending physician had imparted through his tone and comments.

Additionally, the hidden curriculum of graduate medical education teaches and condones unprofessional and unethical behaviors in the name of efficiency. The intern who used the legacy code to procure a medical supply was taught the code and how to use it by upper-level residents. Using someone else’s code is not permitted by hospital policy but the intern was taught and encouraged to use it in order to shortcut the bureaucracy and work more efficiently. In this regard, the hidden curriculum teaches that efficiency is valued over proper procedure and adherence to policy. In this manner, the culture of medicine perpetuates.

Conclusions for Research Question One

The learning experiences of the first year of graduate education described by the participants illustrate learning within existing points of view, learning or developing a new point

of view, and revision to points of view; however, none of the learning experiences explored in the research study revealed revising habits of mind. The formal and informal learning regarding medical knowledge can be classified as instrumental knowledge and the incidental learning of communication skills can be categorized as communicative knowledge. Both represent learning within existing points of view or learning new points of view for the study participants.

Thinking like a teacher, seeing the patient as a person, and putting the patient first represent revised points of view for these intern physicians. Additionally, findings indicated incidental learning experiences significantly contributed to the development of professional behaviors for these first-year residents and confirmed the significance of context in clinical learning.

The study participants did not gain emancipatory knowledge, engage in critical reflection on their underlying premises, or report a perspective transformation; therefore, transformative learning did not occur during the first year of residency training for these interns. However, opportunities for transformative learning exist in graduate medical education because the study findings highlight the existence of the necessary components. The interns gained a significant amount of instrumental and communicative knowledge which could contribute to transformative learning. The critical incidents described by the participants would be appropriate content for critical reflection and critical self-reflection of beliefs, values, and underlying assumptions.

These new physicians engaged in reflection-on-practice which could be further developed into critical reflection. However, in order for new physicians to experience transformative learning, residents must be trained how to critically reflect on their assumptions and be allocated the resources necessary to do so. Additionally, faculty must be trained how to foster transformative learning in the specific context of clinical learning.

Conclusions for Research Question Two

The hidden curriculum of graduate medical education significantly influenced what is learned about professionalism during the physician's first year of residency training, particularly the examples of poor role modeling by attending physicians. These brief encounters illustrate the ubiquitous nature of the hidden curriculum of medical education in influencing the attitudes, values, and assumptions acceptable for a physician. The extremely powerful hidden curriculum of graduate medical education trumps the formal curriculum regarding professionalism. As asserted by Langendyk, Mason, and Wang (2016), relying on immersion in the clinical environment to develop the professional identity of new physicians is not appropriate because of the vast evidence identifying the damaging effects of the hidden curriculum to which the findings of this study contribute.

Implications and Recommendations for Medical Education

The development of professionalism begins in undergraduate medical education; therefore the findings from the research study which illustrate how professionalism is learned in the clinical learning setting apply to both the undergraduate and graduate levels of medical education. The UME curriculum can be enhanced to include specific initiatives regarding the development of professionalism in the context of the hospital setting during the clinical clerkship years. Findings from a recent study of all internal medicine residents taking the 2013-2014 Internal Medicine In-Training Examination indicate three skills most frequently rated as helpful for preparing for the first year of residency training including identifying when to seek additional help and expertise, how to prioritize clinical tasks and manage time efficiently, and how to communicate with other providers around care transitions (Pereira et al., 2016). These three skills were highlighted in the findings of this study.

Medical schools need to provide more clinical learning experiences in context with the explicit goals of teaching professionalism. Professionalism should be the primary objective of these learning experiences in order to highlight its importance and ensure it is not viewed as an afterthought. If the discipline of medicine truly values professionalism, then it must be explicitly taught and evaluated in context. According to Hafferty, Gaufberg, and O'Donnell (2015):

Students receive one set of signals when a school extends its [doctoring] course across all four years of training and another when it restricts this offering to the “preclinical” curriculum. The absence of a safe and regular opportunity to reflect on clinical and ethical challenges, role-play communication strategies, and work out professional boundary issues that arise in clinical settings not only creates a learning void, but also can function as a null curriculum, with such an absence telling students that the issues they are wrestling with are not terribly important, should already have been mastered, or are things they are expected to resolve “on their own.” (p. 134)

Medical schools have the opportunity to include learning experiences aimed at the development of professionalism throughout the four-year undergraduate curriculum with the upcoming curricular reforms related to the integration of Core Entrustable Professional Activities (EPAs), integrated activities to be expected of all M.D. graduates making the transition to residency training.

The definition of professionalism from the AAMC (2014) related to Core EPAs is similar to the list of professionalism competencies expected of medical school graduates from the ACGME in 1999. The alignment of the AAMC's definition of professionalism and the ACGME's professionalism competencies presents an opportunity for the development of

connected longitudinal initiatives aimed at the development of professionalism and professional identity for new physicians across undergraduate and graduate medical education.

The development of professional identity in medical students and resident physicians is extremely complex. As detailed by Carter et al. (2016), the intricacies of the role of physician and what it means to be a doctor in our society are passed down from generation to generation through role modeling in the clinical learning environment. Observing role models in the clinical environment allows medical students and resident trainees to develop a sense of what type of physician they want to be (Passi & Johnson, 2016). At present, Passi and Johnson assert there are no unified guidelines on how to efficaciously develop medical professionalism in medical students and resident physicians; however, there is ample evidence to support positive role modeling in the clinical learning environment as an effective teaching strategy to meet this important goal.

Implications for clinical practice and strategies to help doctors become better role models include teaching faculty to be aware of the impact of modeling both positive and negative behaviors; training faculty how to make implicit lessons more explicit in the clinical environment; protecting time for teaching faculty to facilitate dialogue, reflection, and debriefing with learners; and developing organizational structures which support a culture of excellence in physician role modeling, including faculty performance evaluation directly related to role modeling (Cruess, Cruess, & Steinert, 2008; Passi et al., 2013).

It is imperative that undergraduate and graduate medical training programs teach learners how to appropriately assess the behaviors of role models in the clinical learning environment. Medical students and resident physicians need the ability to designate behaviors of role models as either as positive or negative in order to ensure they adopt positive behaviors, attitudes, and

values (Passi & Johnson, 2016). Further, as prescribed by Martimianakis and Hafferty (2016), “Health professionals need to be taught and enabled to challenge and disrupt problematic practices they encounter along the way that interfere with their capacity to be ‘good’ doctors to all their patients” (p. 279).

Medical students and resident physicians also need to develop reflective skills and integrate reflective practice into their learning to achieve professional competence. As noted by McAuliffe (2006), the development of professional competence does not stem from developing the ability to accurately solve problems using technical knowledge; rather, professional competence is achieved by implementing reflective practice and making evidence-based decisions based on examining problems from varied perspectives. In this manner, reflective skill development in medical students and resident physicians would also contribute to transformative learning in medical education.

Medical schools and residency training programs can harness the power of transformative learning and facilitate perspective transformation in learners at both levels by highlighting the importance of reflective practice and critical reflection in the clinical learning environment. The development of professionalism and professional identity development of medical trainees can be enhanced with the use of critical reflection. To accomplish this, students and resident physicians must be taught how to critically reflect and faculty must be trained to facilitate critical self-reflection. When the study participants detailed their personal critical incidents and shared their personal reflections with me as the researcher, they exhibited the potential to engage in critical reflection.

The opportunity for transformative learning to develop professionalism exists in undergraduate and graduate medical education. Setting the ideal conditions for transformative

learning in the clinical learning context should follow the recommendations for transformative learning in the classroom setting and be modified as needed for logistical constraints. The learning environment needs to be safe, open and trusting in addition to allowing for participation, collaboration, exploration, critical reflection, and feedback (Taylor, 2000). Additionally, medical educators should relinquish some of their power when engaging in the questioning, critical reflection, and rational discourse required to facilitate transformative learning (Cranton, 1994, Mezirow, 1991). If learners regard the educator or higher-level residents as authority figures, they may not be willing to question their superior's attitudes, values, or beliefs (Baumgartner, 2001).

Facilitating transformative learning is not a task to be taken lightly and with it comes great responsibility (Taylor, 2008). According to Dirkx (1997, 2006), facilitating transformative learning requires attention to the learner as an entire person and the ability to foster what is already inherently present within the learner. An educator can facilitate transformative learning by acknowledging the presence of the learner's relationships and experiences in the learning environment, respecting the influence of these on the learning, and giving these personal components a voice by affording them space and consideration to be heard within the learning environment (Dirkx, 1997). Brock (2010) recommends educators continue to support gradual changes in learner's frames of reference rather than just spotlighting the epochal moments experienced by learners. Making critical reflection a regular expectation in undergraduate and graduate medical education would ensure continuous attention to the significant learning and potential for perspective transformation.

An educator cannot guarantee that transformative learning takes place, he or she can only sponsor and guide the process of learners critically examining their personal beliefs and

assumptions, many of which have been assimilated tacitly (Cranton, 2006). Techniques to encourage critical thinking include reflective journaling, role-playing, and group dialogue (Cranton, 1994; Duffy, 2006; King, 1997; Taylor, 2008). The logistical constraints of residency training, particularly lack of time, would most likely impede the implementation of these time-intensive methods to introduce concepts related to critical reflection. Integrating these into undergraduate medical curriculum during the clinical years, specifically the third-year clerkships, fourth-year elective rotations, and fourth-year acting internship, would allow learners to develop critical thinking and critical reflection skills during a more accommodating pace of learning prior to using these skills during the more demanding environment of residency training.

Brookfield's (1990, 1995) critical incident technique could also be integrated into the undergraduate medical curriculum during the clinical years to develop reflection skills and reflective practice. Specific curricular initiatives designed by faculty trained in the technique could be added to the formal curriculum of the clerkships and acting internship. Learners could be taught how identify critical incidents experienced during a clerkship or acting internship and how to reflect on where the incident occurred, who was involved, what was positive or negative about the experience, and what insight he or she gained (Brookfield, 1990, 1995). By introducing the concepts of the critical incident technique at the undergraduate level, interns will enter residency training with the skills required to identify and reflect on critical incidents they experience during the first year of graduate medical education.

Cranton (2006) suggests several techniques for fostering critical self-reflection including critical discussion about experiential learning, exposure to new information through consciousness-raising experiences, and critical questioning about knowledge gained in the learning environment. Each of these could be customized for graduate medical education and

would be able to be accommodated by the formal curriculum and logistical constraints of residency training. Residency education is almost entirely comprised of experiential learning; therefore, resident physicians have plenty of content for critical discussion about experiences. During formal learning sessions on inpatient services as well as ambulatory services, attending physicians could facilitate critical discussions amongst residents by requesting residents share and compare related experiences and then encouraging the physicians to plan for changes in practice. The critical discourse amongst residents could also contribute to communicative knowledge. Residency education includes medical simulation experiences; therefore, clinical faculty could use these to expose the residents to knowledge, insights, or values which differ from their currently held point of view, which could be obtained through an assessment administered prior to the simulation. As evidenced by the participants in this research study, residents experience multiple types of learning every day they are in the clinical environment. At the end of a rotation, an educator could facilitate a defined reflection process about residents' learning regarding content, process, and premise. For content reflection, the educator should ask what knowledge the learner gained from the experience. This can enhance instrumental knowledge. For process reflection, the learner should be asked how they came to believe something and how their experiences shaped their views. To encourage premise reflection, the educator can ask the learner why the knowledge is important or why they need that knowledge. This process can help foster emancipatory knowledge.

By fostering the development of reflective skills and facilitating critical reflection and critical self-reflection during undergraduate medical education and residency training, institutions of medical education will create an environment which supports transformative learning and highlight the importance of reflective practice in medicine. The process of

transformative learning requires personal attention and time, therefore, it can be viewed as directly conflicting with the selfless, patient-centered perspective expected of physicians. Explicit sponsorship by the institution and faculty can ameliorate this effect. This requires outlining explicit expectations for both faculty and learners, carving out dedicated time for reflection in the formal curriculum, and introducing the concepts and skills during medical school so that learners can expand reflective skills during residency training.

Teachers rank higher than students in the hierarchy of education. This also holds true in the hierarchy of medical education but is further complicated by the hierarchy of medicine within which attending physicians rank higher than fellows, residents, interns, and medical students respectively. As noted by Brainard and Brislen (2007), the unprofessional conduct of medical educators is the primary barrier to development of professionalism in learners and this obstacle is protected by the established hierarchy of authority. For any new initiatives to be successful, students must be afforded power equal to that of their medical educators with respect to professionalism in the clinical learning environment. All members of the learning environment must have equal responsibility and accountability for professional behavior in the clinical setting and ability to report unprofessional behaviors from anyone, including attending physicians. Until the power structure of medical education at the UME and GME levels is explicitly modified to equalize learners and educators and allow for emancipatory learning regarding professionalism, the hidden curriculum transmitted through unprofessional role models will reign supreme.

To develop exceptional professional behaviors in new physicians that will result in better care for patients, UME and GME educational programs must actively, explicitly, and radically address the hidden curriculum of medical education. According to Jaye, Egan, and Parker

(2005), when medical educators make the hidden curriculum apparent, the negative aspects of the hidden curriculum can be identified and addressed and the positive aspects can be taken advantage of in order to improve medical education. Failure to explicitly identify the hidden curriculum and ameliorate the potential effects on learners cultivates an uncontrolled learning environment with ample opportunities for the powerful effects of negative role models to permeate the development of professionalism in new physicians. As noted by Martimianakis et al. (2015), “proposals for reform largely target medical students and medical school faculty, with very little consideration for how organizations, institutions, and sociopolitical relations more broadly contribute to problematic behaviors” (p.55). Describing the hidden curriculum for clinical educators, administrators, and learners is not sufficient. Medical educators and clinical educators need to not only know about the hidden curriculum, but also how to work with it (Smith-Han, Martyn, Barrett, & Nicholson, 2016). We need to shift from treating the symptoms of the hidden curriculum to intentionally focusing on the systemic issues that create tension within the medical education learning environments (Martimianakis & Hafferty, 2016).

Institutions must facilitate culture change to address the hidden curriculum of medical education. Hafferty, Gaufberg, and O’Donnell (2015) assert medical educators will continue to transmit conflicting messages about what it means to be good physician unless organizational culture is changed. Harrison (n.d.) contends “it is more effective to change behavior first, and then the desired values and culture are likely to follow” (p. 1). There is overwhelming evidence available in the literature about organizational change that shows values are more likely to emerge from the lower ranks of an organization because values are not effectively imposed from the top organizational tiers down to the bottom of the organization (Harrison, n.d.).

It is not enough to insist that medical educators hold themselves accountable. Attending physicians model unprofessional behaviors in settings absent of other physicians of the same rank; therefore, colleagues of equal stature cannot be the only ones permitted to report unprofessional behavior to the offending physician or administration. Fellows, residents, interns, medical students, and ancillary staff should be able to report professionalism issues without fear of negative repercussions.

In addition to sponsoring open discussions about the hidden curriculum, the institution must train faculty regarding their role in addressing the hidden curriculum and the expectations for modeling professional behavior. Students must be taught how to recognize the hidden curriculum and how to handle negative role models. Students must be made aware that what they experience in the clinical learning context may portray conflicting values and students must be motivated to act professionally, no matter what they may see being modeled by attending physicians.

Like the concept of student mistreatment in medical education, there should be a zero-tolerance policy for unprofessional behavior in the clinical learning environment. This policy should apply to all members of the healthcare team. Based on the organizational change recommendations of Kotter (1995), medical schools and academic healthcare systems should establish a sense of urgency, create a powerful guiding coalition, develop a clear vision, widely broadcast the vision using all available channels, remove obstacles such as unwilling leaders and faculty, systematically plan for and create short-term successes to sustain the necessary level of urgency, avoid declaring victory too early, and anchor changes in the culture and ensure leaders personify the new values. Like mistreatment policies, the professionalism policy should include informal and formal mechanisms of reporting incidents of unprofessional behavior, education for

all members of the clinical learning environment, and open discussion about professionalism at every level of the institution (Fried, Vermillion, Parker, and Uijtdehaage, 2012). It is imperative for institutions to keep focus on the hidden curriculum throughout the organizational change and the implementation of a policy to dictate professional behaviors. As noted by Fried, Vermillion, Parker, and Uijtdehaage (2012), the hidden curriculum can sabotage efforts to eliminate unprofessional behavior in the clinical learning environment when faculty, residents, and other members of the healthcare team do not model professional behavior. The findings of the study support this assertion.

Limitations

The study is limited by the inclusion of resident physicians in surgical and primary care residency training programs within a single institution in one part of the country and in an urban setting. Additionally, the study is limited by the small number of participants and the lack of diversity within the participant pool. All study participants were male, White or Asian, and of similar age. Only one resident physician participated for a full year and the remaining three participated for a half year due to unanticipated recruitment challenges with gatekeeper support that resulted in the need to cast a wider recruitment net. Therefore, some data collected was retrospective and not gathered in the moment as events happened during the first six months of residency training for three study participants. Finally, the screening interview protocol was modified due to the significant recruitment challenges. As a result, three of the four study participants were subject to less stringent study entry requirements; therefore, not all of them were as conversant or forthcoming when participating in interviews.

Delimitations

The goal of the study was to provide an indepth analysis of individual cases bounded by location, time, and activity. The study explored the learning experiences of four intern physicians during their first year of residency training. The results are delimited to the specific sample of interns studied and the data are representative only of the first-year resident physicians at this particular urban academic health system. However, the findings may be meaningful to others interested in the development of professionalism in medical education.

Recommendations for Future Research

While the results of this exploratory case study contribute to what is known about how professionalism is taught and learned by new physicians, future research in the area of development of professionalism will further inform how institutions of medical education can best develop competent and professional physicians. Results from additional studies regarding the teaching and learning of medical professionalism will continue to shape medical education in the U.S. and ultimately effect the type of care patients receive from physicians. The following recommendations for future research may contribute to and help continue the conversation surrounding how to best educate medical students and new physicians.

An exploratory case study design using interviews as well as observations in the clinical learning environment allows for an examination of the development of professionalism during the first year of graduate medical education as it is happening, rather than relying solely on retrospection. Large scale replication of this study with more participants, for an extended time, in different medical discipline residency programs, at different academic medical centers, and in different locations could provide additional insight about the development of professionalism in new physicians.

A larger number of participants would allow for comparison and contrast of learning experiences based on gender, ethnicity, age, and medical discipline. Interviewing and observing resident physicians for the entire first year of residency training and subsequent years would allow for a more comprehensive examination of transformative learning and whether it occurs during residency training. Comparing and contrasting the experiences of interns in different medical disciplines would be possible with a more diverse participant pool. Researching learning experiences of resident physicians in different residency programs at different hospitals in different areas of the U.S. would provide more insight into the effects of culture, particularly institutional values, on the development of professionalism.

Data gathered from additional participants within the clinical learning environment may prove fruitful and allow for an expanded examination of professional behaviors as well as role modeling in the hospital setting. Future research could include interviews of resident colleagues, attending physicians, ancillary staff, and patients. Additionally, gathering data from other sources such as reflective journals of resident physicians or evaluations of residents by the residency program could provide further insight into the professionalism of new physicians, their learning experiences, and the connection between these.

Studies using alternative theoretical lenses such as situated learning theory (Lave & Wenger, 1991) could provide insight on how new physicians experience legitimate peripheral participation that leads to full membership in the community of practice of physicians. Studies using the theoretical lens of human development and an adapted framework of the development of the self (Kegan, 1982) could further explain how physicians transition to put the interests of their patient's before their own.

Summary

This research study used a theoretical lens of transformative learning theory to explore the learning experiences of four resident physicians during the first year of graduate medical education. While these study participants did not experience the depth of critical reflection or critical self-reflection that leads to full realization of transformative learning during the internship year, the potential for transformative learning in undergraduate and graduate medical education exists. This study affirms the powerful influence of role models through informal learning and the hidden curriculum in the professional identity development of physicians. The findings and conclusions regarding transformative learning and the hidden curriculum were used to outline implications for medical education at both the undergraduate and graduate levels of training. Recommendations include the integration of transformative learning opportunities in medical school and residency training to improve professional identity development for students and trainees. Organizational culture change, with sharp focus on the hidden curriculum of medical education, aimed to eliminate unprofessional behavior following the same model as student mistreatment in medical education is recommended to improve the development of professionalism in physicians.

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Appendix A

Institutional Review Board Approval Letter



Office of Research
Office of Research Subjects Protection
210 Tindal Lodge, Research Plaza
100 East Leigh Street, Suite 900
H.C. Scott Building
Richmond, Virginia 23298-0908
(804) 683-0868
Fax: (804) 227-3448

TO: Teresa Carter
CC: Teresa Carter
Elizabeth Marlowe
FROM: VCU IRB Panel B
RE: Teresa Carter ; IRB HM20001648 Learning to Become Professionals: The Role of Transformative Learning Among Physicians in the First Year of Graduate Medical Education

On 5/21/2014 the referenced research study qualified for exemption according to 45 CFR 46.101(b), category 2.

The information found in the electronic version of this study's smart form and uploaded documents now represents the currently approved study, documents, and HIPAA pathway (if applicable). You may access this information by clicking the Study Number above.

If you have any questions, please contact the Office of Research Subjects Protection (ORSP) or the IRB reviewer(s) assigned to this study.

- The reviewer(s) assigned to your study will be listed in the History tab and on the study workspace. Click on their name to see their contact information.

Attachment – Conditions of Exempt Approval Conditions of Exempt Approval:

In order to comply with federal regulations, industry standards, and the terms of this approval, the investigator must (as applicable):

- Conduct the research as described in and required by the Protocol.
- Provide non-English speaking patients with a translation of the approved Consent Form in the research participant's first language. The Panel must approve the translation.
- The following changes to the protocol must be submitted to the IRB panel for review and approval before the changes are instituted. Changes that do not meet these criteria do not have to be submitted to the IRB. If there is a question about whether a change must be sent to the IRB please call the ORSP for clarification.

THESE CHANGES MUST BE SUBMITTED:

- Change in principal investigator
- Any change that increases the risk to the participant
- Addition of children, wards of the state, or prisoner participants
- Changes in survey or interview questions (addition or deletion of questions or wording) that change the level of risk or adds questions related to sexual activity, abuse, past or present illicit drug use, illegal activities, questions reasonably expected to provoke psychological anxiety, or would make participants vulnerable, or subject them to financial, psychological or medical risk
- Changes that change the category of exemption or add additional exemption categories
- Changes that add procedures or activities not covered by the exempt category(ies) under which the study was originally determined to be exempt
- Changes requiring additional participant identifiers that could impact the exempt category or determination
- Change in inclusion dates for retrospective record reviews if the new date is after the original approval date for the exempt study. (ex: The approval date for the study is 5/24/10 and the original inclusion dates were 01/01/08-06/30/10. This could be changed to 01/01/06 to 09/24/10 but not to end on 09/25/10 or later.)
- Addition of a new recruitment strategy
- Increase in the planned compensation to participants

- Monitor all problems (anticipated and unanticipated) associated with risk to research participants or others.
- Report Unanticipated Problems (UPs), following the VCU IRB requirements and timelines detailed in VCU IRB WPP VIII-7).
- Promptly report and/or respond to all inquiries by the VCU IRB concerning the conduct of the approved research when so requested.
- The VCU IRBs operate under the regulatory authorities as described within:
 - U.S. Department of Health and Human Services Title 45 CFR 46, Subparts A, B, C, and D (for all research, regardless of source of funding) and related guidance documents.
 - U.S. Food and Drug Administration Chapter 1 of Title 21 CFR 50 and 56 (for FDA regulated research only) and related guidance documents.
 - Commonwealth of Virginia Code of Virginia 32.1 Chapter 5.1 Human Research (for all research).

Appendix B

Study Information Sheet

RESEARCH STUDY INFORMATION

Learning Among Physicians in the First Year of Graduate Medical Education

VCU IRB NO.: HM20001648

If any information contained in this information sheet is not clear, please ask the researcher to explain any information that you do not fully understand. You may take this information sheet and think about whether you would like to participate before making your decision and contacting the researcher.

PURPOSE OF THE STUDY

The purpose of this research study is to explore the learning experiences of resident physicians during the first year of graduate medical education. You are being asked to participate in this study because you are a first-year resident physician.

DESCRIPTION OF THE STUDY AND YOUR INVOLVEMENT

In this study you will be observed by the researcher approximately 10 times in the clinical setting. Additionally, you will participate in one-on-one follow up interviews. Each interview will be approximately 60 minutes. The interviews will be recorded and transcribed. There may also be the opportunity to participate in a focus group interview lasting approximately 60 minutes.

RISKS AND DISCOMFORTS

The only known risk of participating in this study is a potential breach of confidentiality. However, all interview audio recordings and transcripts will be password-protected and destroyed upon completion of the study. Additionally, you will not be identified by name and will be asked to provide a pseudonym.

BENEFITS TO YOU AND OTHERS

You will not get any direct benefit from this study, but, the information we learn from people in this study may help to inform curricular design in medical education.

COSTS

There are no costs for participating in this study other than your time.

PAYMENT FOR PARTICIPATION

You will receive a \$20.00 gift card to a hospital vendor as a token of appreciation for your time.

CONFIDENTIALITY

Potentially identifiable information about you will consist of interview recordings, interview transcripts, and observation data. Data is being collected only for research purposes. Your data will be identified by a self-selected pseudonym, not names, and stored on a password protected computer and in a locked office. All data will be destroyed after data analysis and interpretation are complete. We will not tell anyone the answers you give us; however, information from the study may be looked at or copied for research or legal purposes by Virginia Commonwealth University.

VOLUNTARY PARTICIPATION AND WITHDRAWAL

Participation is voluntary. You do not have to participate in this study. If you choose to participate, you may stop at any time without any penalty. You may also choose not to answer particular questions that are asked in the study. Your decision to participate or not will not affect your standing at [UAHS].

Your participation in this study may be stopped at any time by the researcher without your consent. The reasons might include:

- The researcher thinks it necessary for your health or safety;
- you have not followed study instructions; or
- administrative reasons require your withdrawal.

QUESTIONS

If you have any questions, complaints, or concerns about your participation in this research, contact:

Elizabeth P. Marlowe
marloweep@vcu.edu
(804) 301-4715

The researcher/study staff named above is the best person(s) to call for questions about your participation in this study.

If you have any general questions about your rights as a participant in this or any other research, you may contact:

Office of Research
Virginia Commonwealth University
800 East Leigh Street, Suite 3000
P.O. Box 980568
Richmond, VA 23298
Telephone: (804) 827-2157

Contact this number for general questions, concerns or complaints about research. You may also call this number if you cannot reach the research team or if you wish to talk with someone else.

General information about participation in research studies can also be found at <http://www.research.vcu.edu/irb/volunteers.htm>.

Vita

Elizabeth Paige Marlowe was born and raised in Franklin, Virginia, where she graduated from Franklin High School in 1996. She attended the University of Virginia in Charlottesville, Virginia and earned her Bachelor of Arts degree in Sociology from the College of Arts and Sciences in 2000.

She relocated to Chapel Hill, North Carolina in 2000 and accepted the position of Human Resources Specialist with the University of North Carolina at Chapel Hill School of Medicine's INTRAH program, subsequently known as IntraHealth International, Inc., in 2001. Her work at this international non-profit corporation which provided reproductive healthcare training in developing countries inspired her to pursue a master's degree in education.

She relocated to Richmond, Virginia in 2004 and earned her Master of Education degree in Adult Education and Human Resource Development from Virginia Commonwealth University's School of Education in 2006. Her professional endeavors inspired her to pursue a doctorate degree in education and she began her doctoral studies in 2009. She earned her Doctor of Philosophy degree in Education - Adult Learning from Virginia Commonwealth University's School of Education in 2016.

Dr. Marlowe lives in the Old and Historic District of Church Hill in Richmond, Virginia.