PERSPECTIVES OF FIRST-YEAR INTERNAL MEDICINE RESIDENTS ON
EVALUATING MEDICAL STUDENTS

By

Whitney Harper

Bachelor of Arts in History from the University of Washington (2008)
Master in Sport Administration and Leadership from Seattle University (2012)

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and reviewed by:

Debra L. Welkley, Ed.D., Lead Advisor
University of New England

Evelyn Thomas, Ed.D., Secondary Advisor
University of New England

Doctor of Education Final Dissertation Approval Form

This Dissertation was reviewed and approved by:

Lead Advisor Signature: _____*Debra L. Welkley*_____

Lead Advisor (print name): __Debra L. Welkley_____

Secondary Advisor Signature: *Evelyn J. Thomas*

Secondary Advisor (print name): __Evelyn J. Thomas_____

Date: ____**7/18/23**____

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ABSTRACT

As physicians-in-training transition from medical school to residency, they must quickly adapt to new environments, systems, and roles in the clinical education setting. Many are tasked with teaching and evaluating their near-peer medical students as early as the first day of residency training, yet they are often uninformed on teaching practices and assessment strategies. This basic qualitative study explored first-year medical resident perceptions of the influence of evaluating medical students on their transition from medical student to first-year resident. Nine first-year internal medicine residents participated in this study through semi-structured individual interviews. Four themes emerged from the data: 1) feeling responsible for the growth of third-year medical students, 2) concerns about the impact of subjective grades and evaluations, 3) unpreparedness to evaluate medical students, and 4) preparedness for the first year of residency. Through data analysis, the themes informed the following findings: first-year residents are uncertain if they should evaluate medical students, first-year residents prefer the role of near-peer mentor over evaluator, first-year residents are unprepared to evaluate medical students, first-year residents learn how to evaluate through social constructivism (Vygotsky, 1978), a supportive environment eases the transition to residency, and the first year of residency requires on-the-job learning. The results of this study suggest changes can be made in medical education to better support the learning environment and experiences for first-year medical residents.

Keywords: *transition to residency, graduate medical education, evaluations, first-year resident, third-year medical student*

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CHAPTER 1: INTRODUCTION

The transition from medical student to resident is a period of uncertainty in medical education where newly graduated physicians transition from assisting physicians in patient care to making decisions that directly impact patient outcomes, a shift that to many seems quite sudden (Boileau et al., 2019; Chang et al., 2020; Chen et al., 2015; Thompson et al., 2016; Wolf et al., 2018). Patient care expectations are only one of the changes for medical student trainees during this time. Many trainees move to new cities for residency, which requires them to navigate their new surroundings and medical systems and create new social communities (Chang et al., 2020). Additionally, first-year residents (also known as interns) experience a new role within the medical education hierarchy; they now hold a dual role of learner and supervisor/educator of medical students, often without training in learning theories or guidance on how to teach medical students (Anderson et al., 2020; Chang et al., 2020; Chokshi et al., 2017; Nishikura et al., 2021; Ofshteyn et al., 2021; Saucier et al., 2021; Sobbing et al., 2020).

The new roles and responsibilities first-year residents experience can lead to high levels of burnout (Busireddy et al., 2017; Levy et al., 2019; Yaghmour et al., 2017). Residents experience higher rates of burnout than their peers in non-medical careers, and first-year residents suffer one of the highest levels of burnout during medical training (Levy et al., 2019; Yaghmour et al., 2017). First-year residents also exhibit higher rates of depression and suicidal thoughts than other medical trainees (Yaghmour et al., 2017). Long work hours, self-doubt, low pay, and the emotional cost of gaps in clinical knowledge and skills all play a role in burnout, depression, and suicidal ideations in the first year of medical residency (Busireddy et al., 2017; Ghaith et al., 2022; Lu et al., 2021; Mata et al., 2015; Ripp et al., 2017; Walsh et al., 2019; West, 2012).

This basic qualitative research study focused on one aspect of the transition to residency process. Specifically, this study sought to understand the first-year resident perceptions of the influence of evaluating medical students on their transition to residency. First-year residents know firsthand how important grades are to students and the ability to match into a student's chosen field or practice because they recently completed the process of applying to and matching into residency programs (Filiberto et al., 2021; Sudan et al., 2014; Thompson et al., 2016). The researcher of this study was interested in exploring the lived experiences of first-year residents as they transition from medical students to residents. The researcher was especially interested in the experiences of moving to the role of an evaluator of medical students and whether they felt prepared to evaluate, knowing the importance of grades on the career trajectory of medical students.

As a program administrator with 12 years of experience managing medical education programs for medical students, residents, and fellowships in two departments, the researcher was particularly interested in the transition between education levels in medical education. The researcher has seen firsthand how stressed many graduating medical students seem as they start residency, how uncertain and anxious new residents seem when they begin their residency training, and how prevalent burnout appears to be in the first year of residency. The researcher's observations – anecdotal as they are – coincided with the conclusions of researchers who pointed out that many residency programs desire an improved and standardized handoff process so they know how best to support and train their new residents (see, for example, Beck Dallaghan et al., 2021; Rojek et al., 2019). The researcher also has experience reading the evaluations of third-year medical students submitted by first-year residents, more senior residents, and faculty and incorporating the feedback into the final grade for the medical students. In this researcher's

experience, there was a discrepancy in the written feedback between the first-year and more senior residents. These observations and experiences compelled the researcher to conduct this study. A review of the literature by the researcher found there have been many studies on the student perspective of being evaluated by residents; however, there is little known about the resident, particularly the first-year resident, experiences in evaluating medical students (Bullock et al., 2019; Cohen et al., 2021; Dudas et al., 2012; Frank et al., 2019; Goldstein et al., 2013). Therefore, it is unclear what first-year residents experience when asked to evaluate third-year medical students; this basic qualitative research study sought to understand this experience.

Definitions of Key Terms

The following terms are used frequently in conversations regarding medical education in the United States and are found throughout this study.

Accreditation Council for Graduate Medical Education (ACMGE): the accrediting body for residency and fellowship programs in the United States (ACGME, n.d.).

Allopathic: a medical philosophy that treats illnesses with medications and relies on imaging and blood tests for diagnoses; students who graduate from allopathic medical schools earn Medical Doctorates (MDs) (Peconic Bay Medical Center Northwell Health, 2020).

Attending/Attending Physician: a physician legally responsible for treating patients at a hospital or other healthcare facility; this person may also oversee the care of patients by medical students, residents, and fellows (Whitlock, 2021).

Burnout: a condition resulting from enduring workplace stress that has not been effectively managed. There are three dimensions of burnout: (1) exhaustion or energy depletion, (2) cynical or negative feelings toward one's job, and (3) feelings of ineffectiveness and nonachievement (World Health Organization, 2022).

Evaluator of a medical student: a physician who submits a summative assessment of a medical student's performance in a clinical rotation (Dudas et al., 2012; Frank et al., 2019; Goldstein et al., 2013).

Graduate Medical Education (GME) training: the period of training in a physician's education in a specific field (residency) or subfield (fellowship) following medical school (ACGME, n.d.).

Inpatient service: a setting where patients are admitted to the hospital (St. George's University, 2021).

Intern: a physician who is in their first year of post-graduate medical training, also known as a first-year medical resident or a "PGY1" (Whitlock, 2021).

Internal Medicine: branch of medicine that deals with diseases (diagnosis and non-surgical treatment) in adults (Merriam-Webster, 2022.).

Liaison Committee on Medical Education (LCME): the accrediting organization of medical schools in the United States and Canada (LCME, n.d.).

Medical student: a professional student enrolled in a medical school (Collins English Dictionary, 2023).

National Residency Matching Program (NRMP)/"The Match"/Residency Match: "a private, non-profit organization established in 1952 at the request of medical students to provide an orderly and fair mechanism for matching the preference of applicants for U.S. residency positions with the preferences of residency Program Directors" (NRMP, n.d., para. 4).

Near-peer learning/teaching: when a student learns from a peer who is one to two years ahead in the educational process (Marton et al., 2014).

Osteopathic: a medical philosophy that emphasizes a patient's overall wellness, including their environment and diet when treating illnesses and making diagnoses; medical students who graduate from osteopathic medical schools earn Doctorates of Osteopathic Medicine (DOs) (Peconic Bay Medical Center Northwell Health, 2020).

PGY: Post Graduate Year. This indicates how many years a resident or fellow has been in training ("PGY," 2022).

Program Director: a physician faculty member who has "authority and accountability for the overall program, including compliance with all applicable program requirements" (ACGME, 2021, p. 7).

Resident: a physician who is in post-graduate medical training in a general specialty. Note: an intern is a resident in the first year of training; not all residents are interns (Whitlock, 2021).

Transition to Residency: the transition between medical student to resident, beginning in the pre-clinical years of medical school when students research specialty options for residency, ending in the first year of residency training; by the end of the transition, learners experience a major life transition, new support systems, and the assumption of higher levels of patient care responsibilities (Coalition for Physician Accountability, 2021).

Ward: an area of a hospital where patients requiring similar treatments are roomed (Merriam-Webster, 2023).

Statement of the Problem

First-year medical residents experience unique challenges as they begin residency training (Chang et al., 2020; Chen et al., 2015; Thompson et al., 2016; Wolf et al., 2018). Not only do they often find themselves in new and unfamiliar cities, but they also adapt to new

clinical environments and new people who will supervise their training. Their transition from medical student to resident also brings a new professional identity to navigate (Chang et al., 2020). Their new environments allow for graduated autonomy in the clinical setting and new roles of supervisor and educator of the medical students on their teams who are their near peers (Chang et al., 2020; Cohen et al., 2021; Karasik & Dickman, 2020). Not surprisingly, these residents also experience high levels of depression and burnout early in training, a result of the high-stakes transition to residency and the overwhelming doubt and uncertainty their new position brings (Chang et al., 2020; Levy et al., 2019; Yaghmour et al., 2017).

Due to the near-peer experiences, first-year residents often feel like they have "a special connection with the medical students" (Cohen et al., 2021, p. 731) and therefore have realistic expectations of what student performance should be on clinical rotations (Cohen et al., 2021). First-year residents work more closely with third-year medical students on inpatient rotations than faculty at many medical schools, yet they are often unprepared to contribute to summative evaluations of medical students (Cohen et al., 2020; Geary et al., 2021; Khaled, 2021). With the uncertainty and doubts first-year residents experience as they transition from medical student to resident, it is unclear whether they should participate in the formal evaluation process of medical students (Boileau et al., 2019; Chang et al., 2020; Cohen et al., 2021). Additionally, most first-year residents are unaware of teaching theories and best practices, as residency programs often administer "Resident as Teacher" workshops for senior residents (Anderson et al., 2020; Chokshi et al., 2017; Nishikura et al., 2021). "Student as Teacher" workshops are becoming more common experiences in medical schools with the idea that these workshops will better prepare medical trainees for teaching responsibilities in residency (Bandeali et al., 2017; Erlich & Shaughnessy, 2014). Unfortunately, these workshops are often elective opportunities for medical

students, and the majority of first-year residents matriculate without teaching experiences or training (Bandeali et al., 2017; Erlich & Shaughnessy, 2014; Marton et al., 2015; Onorato et al., 2021; Song et al., 2015).

First-year residents go through the process of applying to residency programs shortly before beginning their residency training (most "matched" into their program approximately three months before they began their first year of residency), so they have a heightened awareness of importance residency programs place on clinical grades to determine which applicants to interview (Filiberto et al., 2021; Hartman et al., 2019; Stephenson-Famy et al., 2015; Sudan et al., 2014; Thompson et al., 2016). It is possible that their recent experience in applying to residency programs may influence their ability to objectively assess medical students, especially if they do not have adequate training on how to evaluate students (Cohen et al., 2021). The additional workload of teaching and assessing medical students may be yet another burden placed on first-year residents who are already navigating many new roles within their personal and professional lives (Anderson et al., 2020; Chang et al., 2020; Chokshi et al., 2017; Nishikura et al., 2021; Ofshteyn et al., 2021; Saucier et al., 2021; Sobbing et al., 2020).

Purpose of the Study

The purpose of this basic qualitative study was to explore the lived experiences of first-year medical residents evaluating third-year medical students in an inpatient clinical environment. The inpatient clinical environment was defined as the hospital inpatient setting where first-year medical residents act as near-peer evaluators of third-year medical students. In the inpatient setting, residents work with medical students in a team environment, and medical students are often paired with first-year residents as they are the closest near-peers in the team (Boileau et al., 2019, Cherney et al., 2018; Eilat-Tsanani, 2020; Khaled, 2021; Minter et al.,

2015). First-year residents can be placed in this environment as early as their first rotation in residency (Bandeali et al., 2017; Marton et al., 2015; Onorato et al., 2021). Because of their close relationship on the team, first-year residents are often required to submit evaluations of the medical students they worked with, which are part of medical student clinical grades (Bandeali et al., 2017; Cohen et al., 2021; Marton et al., 2015; Onorato et al., 2021). The intended contribution of this study was to explore the lived experiences and perceptions of internal medicine first-year residents' teaching and evaluating third-year medical students in the inpatient clinical setting and how these perceptions and experiences contributed to their overall transition to residency.

Research Questions and Design

Qualitative research poses broad questions that are exploratory in nature, with the intention to understand the meanings groups or individuals attribute to experiences or phenomena. (Bloomberg & Volpe, 2019; Creswell & Creswell, 2018). The intended aim of this basic qualitative research study was to gain an understanding of first-year resident perceptions of the influence of evaluating medical students on their transition to residency. The methodology of the research study was to conduct individual interviews to explore the following research questions:

Research Question 1: How do first-year medical residents perceive their role as an evaluator of third-year medical students?

Research Question 2: What is the experience of first-year medical residents regarding the preparation to evaluate third-year medical students?

Research Question 3: How do first-year medical residents describe their lived experiences related to the transition to residency?

Conceptual and Theoretical Framework

According to Ravitch and Riggan (2017), a conceptual framework has three components: the researcher's personal interests and goals, the topical literature review that shapes the study's framing, and the theoretical framework. The researcher's identity and positionality in relationship to the study play a key role in shaping the research (Ravitch & Riggan, 2017). This researcher worked with residents in a professional manner but was a non-physician and, therefore, only observed the transition to residency from an outside perspective. The observations of trainees as they progress through the various stages of the transition to residency led the researcher to reflect on whether residents were prepared to evaluate medical students on day one of residency, as they simultaneously had many other new roles to learn. These questions informed the literature review of the research study.

From the literature review, the researcher found that while there are many studies on the transition to residency, the focus of these studies is primarily on medical knowledge, procedural skills, and first-year resident wellness (Boileau et al., 2019; Chang et al., 2020; Chaou et al., 2021; Chen et al., 2015; Minter et al., 2015). Based on the literature review, it is still unknown how the experience as an evaluator of medical students, a new role for first-year residents, may connect to the larger transition to residency experience. The literature review also informed the researcher of a gap in the research relative to the first-year residents' experiences of evaluating medical students. While the literature indicated that resident evaluations of medical students typically align with faculty evaluations, residents are often left out of conversations around the grading process, and many residents, particularly first-years, are untrained in grading rubrics and in how to write summative feedback (Cohen et al., 2021; Dudas et al., 2012; Frank et al., 2019; Goldstein et al., 2013). The researcher only found one study (Cohen et al., 2021) that explored

the first-year resident experience in evaluating medical students. In that study, Cohen et al. (2021) found that while first-year residents believed they had a deeper understanding and connection to medical students due to their recent graduation from medical school, they also felt they had to balance their own learning (as well as other competing interests) while working with medical students, and they felt uncomfortable evaluating medical students because they neither had guidance in the evaluation rubric nor did they have protected time to complete assessment forms.

A modified version of the Dreyfus Model of Skill Acquisition (Carraccio et al., 2008) contributed to the theoretical framework of this research study. The Dreyfus Model of Skill Acquisition describes the process of learning through five stages: novice, advanced beginner, competent, proficient, and expert (Dreyfus, 2004). The modified version by Carraccio et al. (2008), created specifically to adapt the model to the clinical learning environment in medical education, adds a sixth stage: master. This framework provided insight as to how learners progress through each stage of graduated autonomy within the social context of medical education, with near-peer teaching playing an important role in each learning stage (Boateng et al., 2009; Carraccio et al., 2008; Green, 2016; Peña, 2010). The modified Dreyfus Model of Skill Acquisition parallels the design of the competency-based scales associated with evaluations of medical students and residents (Association of American Medical Colleges, 2017; Holmboe & Iobst, 2020). The competency-based scales for evaluations of medical students and residents have four stages to indicate progression from novice to independent practice, which closely align with the first four stages of Carracio et al.'s (2008) adaptation of the Dreyfus Model of Skill Acquisition (AAMC, 2017; Homboe & Iobst, 2020).

Social constructivism theory (Vygotsky, 1978), a variation of constructivism, also contributed to the theoretical framework of this research study. Constructivism suggests learning happens when one builds upon previously learned skills, which allows learners to be actively involved in their own learning process (Dennick, 2016). Social constructivism adds that learning occurs in a community where new knowledge and skills are built on what the learner already knows through engagement with their peers and instructors (Kay & Kibble, 2015; Sommers-Flanagan & Sommers-Flanagan, 2018; Thomas et al., 2014). In constructivism and social constructivism, teachers play a crucial role in knowledge and skill development (Baydal & Singh, 2017; Sadideen et al., 2018; Suwannaphisit et al., 2021). In medical education, learners experience increased responsibility based on their level of training with decreased supervision by more skilled physicians as they progress through the learning stages (Chang et al., 2020; Ofshteyn et al., 2021; Saucier et al., 2021; Sobbing et al., 2020). As medical students and residents advance through their education, they take on the role of a near-peer teacher within their learning environment (Chang et al., 2020; Eilat-Tsanani, 2020; Minter et al., 2015; Sobbing et al., 2020).

Assumptions, Limitations, and Scope

It is important to acknowledge the assumptions of a research study as they may impact the research process or study (Bloomberg & Volpe, 2019). Assumptions, which include beliefs and biases, are ideas the researcher has that may or not be true (Bloomberg & Volpe, 2019). This research study had three main assumptions. First, it assumed first-year residents would be willing to honestly share their experiences of evaluating medical students. The study used semi-structured interviews to gather data on the lived experiences of the participants; the researcher, therefore, assumed that participants were willing to take part in the interviews and were honest in

sharing their experiences (Bloomberg & Volpe, 2019). The second assumption was that evaluating medical students is an added stress for first-year medical students. Finally, the third assumption was that medical schools and residency programs do not sufficiently prepare first-year residents to evaluate medical students. While the study by Cohen et al. (2021) confirmed both the second and third assumptions, it is the only study of its kind. There was unfortunately not enough data to support these assumptions as fact.

A potential hurdle to collecting data was the relationship the researcher had with the study participants. As a member of the residency program staff who was employed by the study site, residents may have perceived power in the researcher's position and may not have been as honest in their answers as they would if the researcher had no affiliation with the residency program. The researcher reassured all participants that their privacy would be protected and informed participants that any identifying information would be removed, that the researcher would use pseudonyms, and that their status in the residency program would not be affected by their choice to participate in this study. Should they choose to participate in the study, what they said in the interviews would also not affect their status in the residency program. A limitation of this research study was the focus on a single specialty within a large institution. Not all first-year residents evaluate medical students in their own specialty, even within the research site, although first-year residents in Psychiatry, Anesthesiology, Physical Medicine and Rehabilitation, and Emergency Medicine at the research site evaluate medical students while rotating on internal medicine rotations. The Liaison Committee on Medical Education (LCME) requires medical students to work with residents in an accredited graduate medical education program in "one or more required clinical experiences" during medical school; however, there is no requirement that medical students are evaluated by the residents (LCME, 2020, p. 2020).

The scope of this basic qualitative study was first-year residents in internal medicine residency training at a single institution. Study participants began their internal medicine residency training on June 24, 2022. Participants were chosen through purposeful sampling, which is commonly used in qualitative studies (Creswell & Guetterman, 2019, Ravitch & Carl, 2021). The researcher purposefully selected participants who were in their first year of residency and who had evaluated third-year medical students on inpatient wards.

Rationale and Significance

Many graduating medical students profess to feeling overwhelmed by the increased responsibility of residency compared to medical school, not only in medical knowledge and clinical skills but also in navigating the challenging new relationships and their new work/life balance (Chang et al., 2020). While first-year residents are expected to become near-peer teachers and mentors of the medical students on their teams, many lack knowledge of relevant teaching theories and practices as teaching workshops (primarily known as "Resident as Teacher" workshops) are mostly provided for more senior residents (Anderson et al., 2020; Chokshi et al., 2017; Nishikura et al., 2021). Although "Student as Teacher" workshops, which aim to prepare medical students to teach when they become residents, are gaining in popularity, these experiences are primarily offered as elective opportunities to medical students, thus still leaving many first-year residents ill-prepared to teach and evaluate medical students (Bandeali et al., 2017; Erlich & Shaughnessy, 2014; Marton et al., 2015; Onorato et al., 2021; Song et al., 2015).

The resident role as a teacher includes completing student evaluations, which are part of medical students' clinical grades (Bandeali et al., 2017; Cohen et al., 2021; Marton et al., 2015; Onorato et al., 2021). Unfortunately, many residents do not receive training on grading rubrics or

on providing written feedback (Cohen et al., 2021). First-year residents experienced firsthand how important grades are to the career trajectory of physicians as most residency programs "screen" students based on grades (Filiberto et al., 2021; Hartman et al., 2019; Stephenson-Famy et al., 2015; Sudan et al., 2014; Thompson et al., 2016). Knowing the high stakes of clinical grades, the evaluation process of medical students may add to the stress and anxiety first-year residents experience, particularly early in the year (Cohen et al., 2021).

Summary

This basic qualitative study examined the perceptions of first-year internal medicine residents evaluating third-year medical students on inpatient rotations at a single institution. Topics related to the subject of the study included the transition to residency, the validity of resident assessments of medical students, and near-peer teaching in medical education. The review of the literature in Chapter 2 discusses an overview of medical education in the United States, describes relevant details about the transition from medical student to resident, discusses physician burnout, provides an overview of how medical students are evaluated in this stage of their training, describes the medical team structure in a teaching hospital setting, including near-peer teaching in medical education, and discusses medical trainee teaching workshops.

This chapter presented an overview of the transition to residency and the unique challenges and changes first-year residents face as they progress from medical student to resident (Boileau et al., 2019; Chang et al., 2020; Chen et al., 2015; Thompson et al., 2016; Wolf et al., 2018). The aim of the research study was to understand first-year residents' perceptions of evaluating medical students and how evaluating medical students may impact the transition to residency. This chapter discussed the assumptions, limitations, and scope of the basic qualitative research study. Finally, the chapter offered the following rationale and significance for the

research study based on a review of relevant literature: first-year residents express feeling overwhelmed as they navigate new systems, cities, and roles in their medical training, while first-year residents are expected to evaluate medical students as early as day one of training, they feel unprepared to do so; their knowledge of the importance of medical student grades may increase their stress and anxiety levels (Bandeali et al., 2017; Chang et al., 2020; Cohen et al., 2021; Erlich & Shaughnessy, 2014; Marton et al., 2015; Onorato et al., 2021; Song et al., 2015).

Chapter 2 delves further into the modified version of the Dreyfus Model of Skill Acquisition (Carraccio et al., 2008) and social constructivism theory (Vygotsky, 1978). The chapter then explores existing literature through seven thematic buckets: (a) medical education in the United States, (b) the transition from medical student to resident, (c) physician burnout, (d) evaluations of medical students, (e) the medical team structure in a teaching hospital setting, (f) near-peer teaching in medical education, and (g) medical trainee teaching workshops. Chapter 3 discusses the methodology of the research study. Chapter 4 presents the study results, and Chapter 5 provides conclusions and recommendations based on the interpretation of the data collected.

CHAPTER 2: LITERATURE REVIEW

The transition between medical school and residency training is crucial in the development of a physician, yet the transition period is often considered abrupt and associated with high levels of anxiety, uncertainty, and cognitive overload (Boileau et al., 2019; Chang et al., 2020; Chen et al., 2015; Thompson et al., 2016; Wolf et al., 2018). First-year residents, also known as interns or post-graduate year ones (PGY1s), experience high levels of burnout and suicidal thoughts early in the year, a result of the overwhelming doubt and uncertainty the transition may bring (Chang et al., 2020; Levy et al., 2019; Yaghmour et al., 2017). The literature reviewed indicated that students feel unready to begin residency and residency programs do not know how to best support incoming first-year residents (Boileau et al., 2019; Chang et al., 2020; Chaou et al., 2021; Chen et al., 2015; Minter et al., 2015). Medical schools and residency programs have a responsibility to reduce the stressors that first-year residents face to ease the transition to residency for their new first-year residents (Chang et al., 2020).

First-year residents are often required to work side-by-side with medical students in the clinical environment, where they act as near-peer teachers and contribute to their education and the evaluations, which are part of medical student's clinical grades (Bandeali et al., 2017; Cohen et al., 2021; Marton et al., 2015; Onorato et al., 2021). Because first-year residents recently went through "the Match" process of connecting medical students to residency programs, they have recent awareness of the high importance residency programs place on clinical grades, with many programs using clinical grades as a top filtering tool for determining which applicants to interview (Filiberto et al., 2021; Hartman et al., 2019; Stephenson-Famy et al., 2015; Sudan et al., 2014; Thompson et al., 2016). Knowing the high stakes of clinical grades, the evaluation

process of medical students may add to the stress and anxiety first-year residents experience, particularly early in the year (Cohen et al., 2021).

Research literature around curriculum on how and when medical trainees (medical students and residents) should be prepared for teaching responsibilities is split into two categories: the residency program should be responsible for this curriculum, and medical schools should provide this curriculum in the final year of training (Anderson et al., 2020; Chokshi et al., 2017; Erlich & Shaughnessy, 2014; Nishikura et al., 2021). To improve resident teaching methods, some residency programs now provide required "Resident as Teacher" workshops for second-year or later residents (Anderson et al., 2020; Chokshi et al., 2017; Nishikura et al., 2021). To a lesser extent, "Student as Teacher" workshops are becoming popular in medical education, albeit mostly as elective experiences (Bandeali et al., 2017; Erlich & Shaughnessy, 2014; Marton et al., 2015; Onorato et al., 2021; Song et al., 2015). While these workshops educate medical trainees in teaching theories and skills for providing feedback, it remains unclear how, if at all, residents are prepared to evaluate medical students (Cohen et al., 2021; Farfan, 2020; Karasik & Dickman, 2020; Owolabi et al., 2014; Onorato et al., 2021; Wolcott et al., 2021).

Due to the near-peer experiences in the medical education environment, first-year residents often feel like they have "a special connection with the medical students" and therefore have realistic expectations of what student performance should be on clinical rotations (Cohen et al., 2021, p. 731). First-year residents also work more closely with third-year medical students on inpatient rotations than faculty at many medical schools, yet they are often unprepared for the evaluation process (Cohen et al., 2021). With the known anxiety first-year residents experience as they transition from medical student to resident, it is unclear if they should participate in the

formal evaluation process of medical students (Boileau et al., 2019; Chang et al., 2020; Chen et al., 2015; Cohen et al., 2021).

This chapter introduces the conceptual and theoretical frameworks of this study. Then, the chapter delves into a review of existing literature. This literature review examines the research from the past ten years to identify gaps in the understanding of how teaching and evaluating medical students may relate to the transition from medical student to resident. Both qualitative and quantitative studies will be presented in a topical format.

Conceptual and Theoretical Framework

Conceptual frameworks are compared to lighthouses, magnifying glasses, and rainbows – they illuminate parts of the study and can bridge variables together in a study (Bordage, 2009; Creswell & Creswell, 2018). There are three components of a conceptual framework: the researcher's personal interests and goals, the literature review that provides the framing of the study, and the theoretical framework (Ravitch & Riggan, 2017). This section will discuss all three components of the conceptual framework.

Personal Interest

This researcher worked in medical education for 12 years and observed the transition to residency from an outside perspective when they worked with medical students and residents. The observations of physicians-in-training as they progressed through the various stages of the transition to residency led the researcher to question whether first-year residents are prepared to add the role of evaluator of medical students in addition to the many other new roles they gain on the first day of residency. The researcher also had experience in reviewing evaluations of third-year medical students submitted by faculty and residents. In this researcher's experience, the written feedback in evaluations submitted by first-year residents differed from those submitted

by more senior residents. This difference led the researcher to wonder how first-year residents are prepared to evaluate third-year medical students.

Topical Research

The literature review begins with a discussion of the current state of medical education in the United States, from undergraduate medical education to graduate medical education. The transition from medical student to resident is explored from both perspectives of medical students and programs. The review then discusses physician burnout with a special focus on resident burnout and the burnout related to the COVID-19 pandemic. Next, the chapter discusses evaluations of medical students. A review of the structure of medical education teams in the inpatient clinical setting, followed by a larger examination of near-peer teaching in the clinical environment of medical education, is also addressed. Finally, the literature review presents literature regarding whether training on teaching and feedback methods should be the responsibility of the residency program or medical school.

Theoretical Framework

Two learning theories contributed to the theoretical framework of this study: a version of the Dreyfus Model of Skill Acquisition developed by Carraccio et al. (2008) that adapts the model to medical education, and social constructivism theory (Vygotsky, 1978). According to these theories, learning happens through social interactions within the learning environment as well as by extending previously learned skills and knowledge (Carraccio et al., 2008; Vygotsky, 1978). Teachers also play an important role in the knowledge and skill development of learners in these theories (Baydal & Singh, 2017; Carraccio et al., 2008; Sadideen et al., 2018; Suwannaphisit et al., 2021).

Dreyfus Model of Skill Acquisition

The Dreyfus Model of Skill Acquisition is a five-stage model used to describe how adults acquire new skills (Dreyfus, 2004). The adult learner moves through the following stages as they learn: novice; advanced beginner; competent; proficient; and expert (Dreyfus, 2004). The novice stage begins with the learner adhering to set rules given to them by their instructor under close supervision. The learner moves through subsequent stages with decreased supervision until they no longer need to rely on rules and can make their own decisions around the task without supervision, thus becoming experts in the specific skill acquisition. G. Lee et al. (2021) argued that the Dreyfus Model of Skill Acquisition highlights the significance of altering interventions to allow students with different experiences to expand their skills.

A modified version of the Dreyfus Model of Skill Acquisition developed by Carraccio et al. (2008) is a common framework in medical education to describe how trainees learn new clinical skills and is applied to clinical evaluations for medical students and residents (Green, 2016; Peña, 2010; Boateng et al., 2009). In this framework, near-peer teachers were ideal coaches for novice to competent-level learners. The modified version applies the Dreyfus Model stages to a physician's competency development and includes a sixth stage of "master." As shown in Figure 1, in the modified version, learning through social contexts is built into each step.

Figure 1

Modified Dreyfus Model of Skill Acquisition by Carraccio et al. (2008)
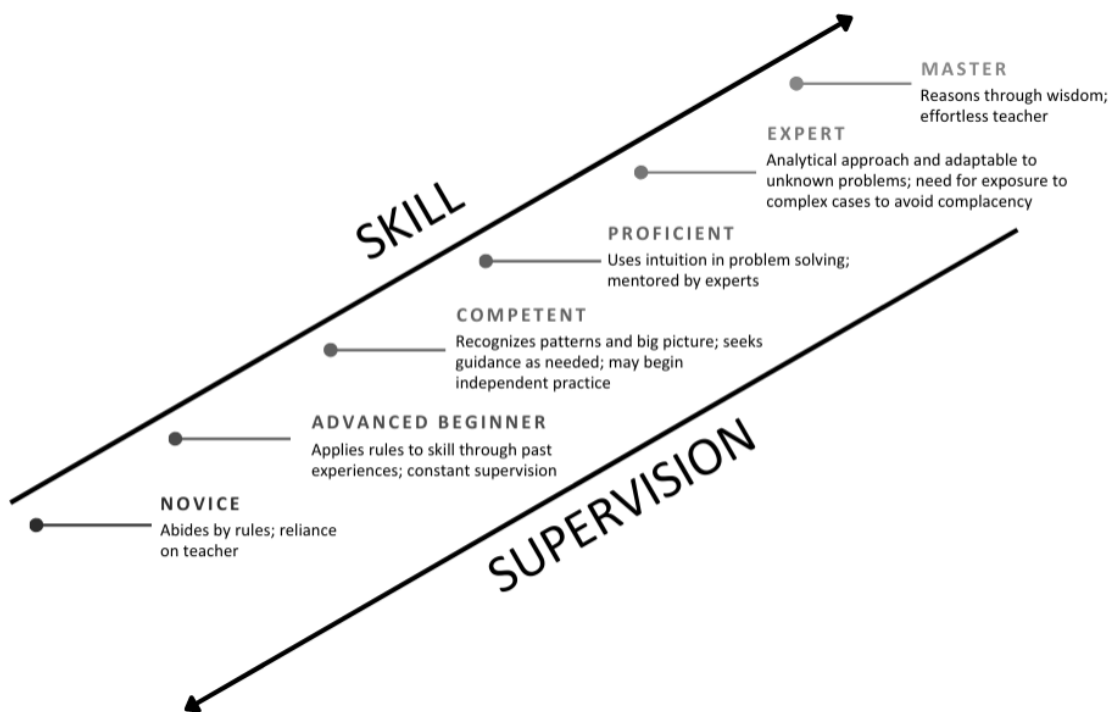
The review of the relevant literature section in this chapter delves into the first four stages of the Dreyfus Model of Skill Acquisition as they pertain to evaluations in medical education. The fifth and sixth stages of expert and master are rarely achieved by medical trainees (Carraccio et al., 2008; Green, 2016). The expert stage is marked by an ability to work intuitively and without the guidance of principles needed in earlier levels of learning (Peña, 2010). The sixth stage of master in the modified model by Carraccio et al. (2008) is differentiated by the individual's ability to naturally convey knowledge and tips to learners; the master is often the individual whom learners seek for second opinions and guidance (Carraccio et al., 2008; Field, 2014). Masters are emotionally engaged in their work and are committed to lifelong learning and continued reflection and improvement (Carraccio et al., 2008). In the model adapted to medical education by Carraccio et al. (2008), near-peer teachers are instrumental in the adult learner's

progression; as near-peer teachers, first-year residents would be one step above the medical students on this scale.

Social Constructivism

Social constructivism theory (Vygotsky, 1878) also contributes to the theoretical framework of this study. Constructivism is a learning theory that postulates learning is constructed through building knowledge upon previous learning (Dennick, 2016). Constructivism learning theory suggests people play an active role in their own learning; while one may be able to receive information, understanding cannot happen without building and connecting new concepts to existing knowledge (Dennick, 2016; Sadideen et al., 2018). According to Kay and Kibble (2015), constructivism allows learners to build knowledge by actively engaging in their social environments, which allows educators to apply creative methods of instruction. In constructivism learning theories, teachers are facilitators that guide their students through learning (Badyal & Singh, 2017).

Social constructivism adds another layer to constructivism in that learners build knowledge through social interactions within their learning environment (Andersen & Watkins, 2018; Sommers-Flanagan & Sommers-Flanagan, 2018; Suwannaphisit et al., 2021). Learning is an active process that is collaborative and social by nature; knowledge acquisition occurs first on a social level and then on an individual level when the learner connects new information with previously learned skills (Andersen & Watkins, 2018; Suwannaphisit et al., 2021). Social constructivism originated with Vygotsky's (1978) idea of the zone of proximal development in child development, "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers" (p. 86).

Suwannaphisit et al. (2021) argued that there are six characteristics in a social constructivism learning environment: relevance, introspective thinking, instructor support, peer interaction, and understanding. Within the social constructivism context, data will never reach saturation because perspectives are constantly evolving (Martens, 2010, as cited in Boileau et al., 2019).

The aim of this basic qualitative study was to understand how evaluating medical students may relate to the transition to residency for first-year medical residents. Social constructivism theory (Vygotsky, 1978) provides reasoning as to how first-year residents gain knowledge and comfort throughout the year. This framework is explained as wanting to understand the complex perspectives of people who live the experiences with the goal of developing "transferable knowledge" (Boileau et al., 2019, p. 305). It was unknown to this researcher how first-year medical residents learn how to evaluate medical students; social constructivism may explain this as well.

Overview of Medical Education in the United States

Medical education in the United States lasts at least six years, from medical school to independent practice (DeZee et al., 2012; Zavlin et al., 2017). Most medical schools span four years and have structured foundational (i.e., non-clinical basic sciences) and clinical curricula to ensure students are well-versed in essential skills required for training in any medical specialty (Chen et al., 2015; DeZee et al., 2012). Residency training lengths range from three years (family medicine, internal medicine, pediatrics) to seven years (neurosurgery), with optional fellowship training with lengths varying from one to four or more years to gain additional training in a narrowed specialty (e.g., cardiology, sports medicine, reproductive endocrinology, infertility, surgical oncology, etc.) (DeZee et al., 2012). While it is not the only factor in choosing a specialty, many students note that student debt influences their specialty choice (Fritz et al.,

2019). According to the most recent report by the Association of American Medical Colleges (AAMC), the average amount of debt of a U.S. medical school graduate is $200,000, with 73% of U.S. medical school graduates reporting having education debt (Youngclaus & Fresne, 2020). Other factors that contribute to career specialty choices include personality, role models, perceived work-life balance of specialties, family planning, length of specialty, and specialty competitiveness (Fritz et al., 2019; Ladha et al., 2022; Youngclaus & Fresne, 2020).

Undergraduate Medical Education

Chen et al. (2015) suggested that medical school is a bridge connecting college and residency training that prepares learners to perform in their joint role of physician and learner. Undergraduate medical education is often divided into two sections: pre-clinical years, where students spend much of their time in direct instruction, and clinical years, where students spend time immersed in specialty-specific rotations, or "clerkships" (DeZee et al., 2012; Zavlin et al., 2017). The Liaison Committee on Medical Education (LCME) requires core clerkship training in emergency medicine, family medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, psychiatry, and surgery (DeZee et al., 2012; LCME, 2021; Zavlin et al., 2017). Although there are some exceptions, such as three-year accelerated programs, medical school is four years in length, and students typically apply to residency programs at the start of their fourth or final year of medical school (DeZee et al., 2012; Schwartz et al., 2018; Zavlin et al., 2017).

Process for Medical Students to Match into Residency

Most medical students participate in the National Resident Matching Program (NRMP) to be "matched" into a residency program spot (Dooley et al., 2021; Weissbart, 2015; Zavlin et al., 2017). There are multiple phases of "the Match" process: (1) the application phase, where students submit their applications to the residency programs at which they are interested in

training; (2) application reviews, when programs "screen" all applications they received to select who they wish to interview; (3) interview offer and acceptance, when programs send selected students invitations to interview with them; students are able to accept or decline the invitation; (4) interviews; (5) ranking, when programs and students submit their rank lists (programs of students and students of programs) to the NRMP; (6) Supplemental Offer Acceptance Program (SOAP)– on Monday of "Match Week" students and programs will know whether they filled or matched; SOAP offers three stages for unmatched students to apply to programs with unfilled positions; and (7) Match Day, when students who did not go through SOAP find out where they matched and programs can officially communicate with their matched students (Dooley et al., 2021). The process can be incredibly competitive, depending on the medical specialty in which students wish to complete residency (Dooley et al., 2021; Weissbart, 2015). Medical students can apply to as many programs as they want in as many medical specialties as they want (Weissbart, 2015; Zavlin et al., 2017). "Unmatched" students are often forced to add another year in medical school to become more competitive applicants in the following year's match cycle (Dooley et al., 2021; Weissbart, 2015; Zavlin et al., 2017).

It is extremely expensive for medical students to apply and interview with multiple programs across the country. Studies estimate that prior to the COVID-19 pandemic, applicants spent over $5000 to interview at programs, or approximately $587 per interview (Bamba et al., 2021; Taparra et al., 2021; Weissbart et al., 2015). Students often take additional loans (on top of their medical student loans which average $182,590) to pay for the cost of applying to programs and travel to interviews (Fritz et al., 2019; Zavlin et al., 2017). The COVID-19 pandemic brought change to this process, as all residency interviews moved to the virtual format in 2020 (Dooley et al., 2021; D. C. Lee et al., 2021; Taparra et al., 2021). It is uncertain at this time

whether residency programs will continue to offer completely virtual interviews, although medical specialty organizations such as the Academic Alliance for Internal Medicine are advocating for interviews to remain virtual long-term (Luther et al., 2022). Due to the high competition and pressure medical students feel when applying to residency programs, the average number of programs students apply to increases yearly (Weissbart et al., 2015; Whipple et al., 2019). Studies indicated, however, that increasing the number of applications submitted by individual students may not increase a student's ability to match into a residency position, as residency programs are unable to perform holistic reviews of all applications due to the large number of applicants they receive (Weissbart et al., 2015; Whipple et al., 2019). A potential problem on the horizon is that the United States Medical Licensing Examination (USMLE) moved to a pass/fail scoring method in January 2022 for the Step 1 exam, an exam taken before medical students can begin their clinical rotations (Dooley et al., 2021). Score reports for exams taken prior to January 25, 2022, provided a three-digit numeric score and a pass/fail outcome (USMLE, 2021). Residency programs often use USMLE Step 1 exam scores to help "screen" applicants (Dooley et al., 2021; Hartman et al., 2019). It is unclear at this time how this change will impact the residency matching process.

Graduate Medical Education

Graduate Medical Education (GME) consists of post-medical school training (residency and fellowship) before physicians can practice independently (DeZee et al., 2012). The Accreditation Council for Graduate Medical Education (ACGME) provides oversight and accreditation to all residency and fellowship programs and institutions in the United States (DeZee et al., 2012; Nasca et al., 2021). The first year of residency can be a preliminary or transitional year before residents begin their actual residency, as some specialties require a year

of general medicine or surgery before they begin their more-specialized training (e.g.,

anesthesiology, dermatology, neurology, ophthalmology, radiation oncology, etc.) (DeZee et al.,

2012; Khaled, 2021).

Transition from Medical School to Residency Training

Residents in their first year of residency training, sometimes referred to as interns or

PGY1s, experience a difficult transition from medical student to junior physician that often

causes them to question their professionalism, clinical skills, and ability to navigate a work-life

balance (Boileau et al., 2019; Chang et al., 2020; DeZee et al., 2012; Schuster, 2020). First-year

residents work with medical students in a team environment, sharing faculty supervisors

(Boileau et al., 2019, Cherney et al., 2018; Eilat-Tsanani, 2020; Khaled, 2021; Minter et al.,

2015). Residents are often placed on teams with and are expected to teach medical students as

early as in their first year of residency (Bandeali et al., 2017; Marton et al., 2015; Onorato et al.,

2021). Residents working with medical students are expected to contribute to medical student

education in the clinical healthcare setting by the Liaison Committee of Medical Education

(LCME), the accrediting body for medical school education in the United States and Canada

(LCME, 2020).

Residents act as near-peer teachers for students; studies show that near-peer teaching

benefits student learning environments and psychological safety (Alkhail, 2015; Karasik &

Dickman, 2020; McKenna & Williams, 2017; Nishikura et al., 2021; Rees et al.; 2016; Saucier et

al., 2021; Sobbing et al., 2015; Wolcott et al., 2021). Unless first-year residents participated in

"Student as Teacher" workshops during medical school, they might be ill-prepared for teaching

as the majority of residency teaching training occurs at the senior levels of residency in the

United States (Anderson et al., 2020; Chokshi et al., 2017; Erlich & Shaughnessy, 2014;

Nishikura et al., 2021). Additionally, resident assessments are included in medical student grades, although few residents have knowledge of how to appropriately evaluate medical students (Dudas et al., 2012; Frank et al., 2019; Goldstein et al., 2013).

During the past decade, the transition from medical student to resident has emerged as a popular topic in medical education research, with most studies found on the topic published within the last seven years. A review of recent studies indicated learners do not feel prepared for residency, and residency programs do not feel prepared to support their new first-year residents (Boileau et al., 2019; Chang et al., 2020; Chaou et al., 2021; Chen et al., 2015; Minter et al., 2015). However, there were very few studies that pose solutions to help ease the transition for both groups (Perez et al., 2022; Sozener et al., 2016; Wancata et al., 2017).

Impact on First-Year Residents

The transition that new physicians experience as they move from medical student to resident is stressful and causes them to question their professional identity, judgment, and preparedness about moving into a more independent role when treating patients (Boileau et al., 2019; Chang et al., 2020; Chaou et al., 2021; Chen et al., 2015; Minter et al., 2015; Perez et al., 2022). Qualitative studies on the trainee's perspective of the transition found that first-year residents reported feeling lost and particularly struggled with the increased responsibility that happens overnight as they start their new role (Boileau et al., 2019; Chang et al., 2020; Demiroren et al., 2021; Perez et al., 2022). The transition period also impacts new residents' personal lives; as many residents recently moved to a new city to start training, they struggle with building and engaging with new social communities (Chang et al., 2020).

First-year residents also experience an abrupt change in patient care responsibilities, for which they may feel ill-prepared (Boileau et al., 2019; Chang et al., 2020; Chen et al., 2015;

Minter et al., 2015). According to Boileau et al. (2019), first-year residents may experience fear when making decisions where a misstep could harm their patients. One substantial change in responsibilities is the ability to prescribe and increase dosages of medications (Boileau et al., 2019). In addition to the increased responsibilities, many first-year residents are also adapting to a new work environment and navigating new clinics, hospitals, and medical records systems (Boileau et al., 2019; Chang et al., 2020). The added responsibilities in their new role as resident physicians often lead to difficulties in navigating work/life balance (Boileau et al., 2019; Chang et al., 2020; Chen et al., 2015). One participant in a study conducted by Chang et al. (2020) commented, "Once I get home from work, I'm kind of just drained…I'm constantly deciding, do I stay up for an extra half an hour to be a normal person or do I just pass out immediately and go to sleep?" (p. 1425). First-year residents who experience difficulties in their work/life balance might be at a greater risk of burnout and suicidal thoughts, which will be explored later in this chapter (Busireddy et al., 2017; Ghaith et al., 2022; Ripp et al., 2017).

The Handoff Process

While residency programs often select students to interview with their program based on exam scores, grades on clinical rotations, and class rank, it is difficult for the program director to accurately assess the medical knowledge and clinical skills of each incoming first-year resident (Filiberto et al., 2021; Hartman et al., 2019; Stephenson-Famy et al., 2015; Sudan et al., 2014; Thompson et al., 2016). Additionally, high exam scores, particularly on the United States Medical Licensing Examination (USMLE) Step 1 exam, correlate with high performance on residency in-training and board examinations; however, high exam scores do not correlate to high interpersonal skills or resident performance (Dooley et al., 2021). Inflation of grades and the unwillingness of medical schools to accurately describe their students' deficits create a lack

of trust in the handoff process (Beck Dallaghan et al., 2021; Rojek et al., 2019). Moreover, residency directors are unable to depend on self-assessments from their incoming first-year residents because self-assessments are often unreliable, and graduating medical students have difficulty assessing their own clinical skills (Chen et al., 2015; Minter et al., 2015; Wancata et al., 2017). Residency bootcamps at the end of medical school increase graduating students' feelings of preparedness to start residency; however, there is no standard assessment form provided to residency programs to finish the handoff process (Minter et al., 2015; Wancata et al., 2017). Studies by Sozener et al. (2016) and Wancata et al. (2017) found when medical schools provided an assessment of their graduating students' competency levels based on the Accreditation Council for Graduate Medical Education milestones of the field they matched in, residency program directors can identify areas of weakness earlier and adopt a plan to address deficits. A standardized handoff process remains a novel idea, with Sozener et al. (2016) and Wancata et al. (2017) remaining the only studies of their kind for the past six years.

Once students become residents, they immediately transition to a new role in their learning environment (Boileau et al., 2019; Chang et al., 2020; Demiroren et al., 2021). The clinical learning environment is the same between medical school and residency training, as most clinical learning is completed in a team-based setting (Chang et al., 2020; Eilat-Tsanani, 2020; Minter et al., 2015; Sobbing et al., 2020). However, the requirements of first-year residents are no longer simply to learn; residents must now also contribute to the education of lower-level trainees in the clinical environment (Chang et al., 2020; Ofshteyn et al., 2021; Saucier et al., 2021; Sobbing et al., 2020).

Physician Burnout

Burnout is a known problem in healthcare professions; it is suggested more than half of physicians are experiencing burnout at any given time, higher than any other profession in the United States (Mata et al., 2015; Rodrigues et al.,2018; Rothenberger, 2017; Shanafelt et al., 2015; Shopen et al., 2022; Somville et al., 2021). Physician burnout has far-reaching negative consequences: suicidal thoughts, decreased productivity, increased needle sticks, patient harm due to errors from deteriorating performance, colleagues subjected to increased unprofessional actions such as verbal abuse, and quality ratings of healthcare facilities and their providers drop (Rothenberger, 2017; Walsh et al., 2019; West et al., 2012). Physician turnover rates also increase with burnout levels, a large problem for healthcare facilities as it costs two to three times a physician's salary to replace them (Rodrigues et al., 2018; Rothenberger, 2017; Willard-Grace et al., 2019). Medical trainees, particularly residents and fellows, experience a greater risk for burnout (Busireddy et al., 2017; Levy et al., 2019; Yaghmour et al., 2017). The risk of burnout, particularly among physicians who worked the front lines, greatly increased due to the COVID-19 pandemic, an ongoing problem with increasing variants of the virus (Baptisa et al., 2021; Sasangohar et al., 2020; Shanafelt et al., 2020; Shopen et al., 2022).

Resident Burnout

According to Busireddy et al. (2017), up to 80% of residents experienced burnout at some point during training. Resident burnout stems from a variety of factors, including the learning environment, malpractice lawsuits, the snowballing emotional toll of the deficit in knowledge and skills, patient deaths, and doubt in their abilities (Busireddy et al., 2017; Ghaith et al., 2022; Ripp et al., 2017). Studies reported that resident burnout led to an increased risk of car accidents, depression, substance abuse, thoughts of suicide, and alcohol use (Lu et al., 2021; Mata et al.,

2015; Walsh et al., 2019; West, 2012). According to Ripp et al. (2017), well-being habits may imprint during residency, leading to long-lasting impacts on wellness throughout careers in medicine. Additionally, burnout during residency affects learning motivation and curiosity, as well as residents' ability to teach lower-level residents and medical students (Lu et al., 2021).

Residents in their first year of training experience higher rates of burnout, depression, and suicidal thoughts than residents in other years of training, as well as higher rates than their peers in non-medical professions (Levy et al., 2019; Yaghmour et al., 2017). According to a study by Yaghmour et al. (2017), suicide was the second-highest reason for resident deaths, and the suicide rate of first-year residents was much higher than in other years of training. However, it is important to note that in a more recent study by Levy et al. (2019), suicidal thoughts were most prevalent in the third year of residency, followed closely by the first year. Unfortunately, there were not any studies identified that focus on burnout prevention in residents, only on burnout reduction (Lu et al., 2021; Walsh et al., 2019).

COVID-19 Pandemic Burnout

The COVID-19 pandemic brought a new toll on healthcare workers across the world (Baptista et al., 2021; Lai et al., 2020; Sasangohar et al., 2020; Somville et al., 2021). The pandemic caused an increase in stress on healthcare facilities, leading to inadequate equipment, space, and personnel (Baptista et al., 2021). The pandemic also increased the toll on physicians' personal lives, experiencing an increase in work hours, sleep deprivation, childcare issues, and fear of exposing family and friends to the virus (Baptista et al., 2021; Lai et al., 2020; Sasangohar et al., 2020). Emergency medicine physicians experienced a perceived risk of exposure of 88% in the first year of the pandemic (Somville et al., 2021). While physicians and other healthcare workers experienced an increase in burnout levels due to the pandemic, it is

interesting to note that residents did not (Blanchard et al., 2021; Chang et al., 2022). This may be because residents have already experienced a greater risk for burnout than physicians (Busireddy et al., 2017; Levy et al., 2019; Yaghmour et al., 2017).

Evaluations of Medical Students

The evaluation of medical students is a developing topic of interest in medical education (Bullock et al., 2019; Cohen et al., 2021). In 2013, the Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Medical Specialties developed six core competency-based milestones for each accredited specialty to frame evaluations in graduate medical education, creating standardized evaluations for board accreditation (Carraccio et al., 2017; Torralba et al., 2020). While the Association of American Medical Colleges (AAMC) created similar frameworks for undergraduate medical education in the form of 13 core entrustable professional activities (EPAs) for entering residency in 2014, the Liaison Committee on Medical Education (LCME) did not require medical schools to adapt evaluations to these activities and undergraduate medical education does not have a standardized way to assess medical students (Amiel et al., 2021; Carraccio et al., 2017). Since the publication of the EPAs, residency program directors have pushed for medical schools to send individual students' EPA levels to the residency program to in which the student matched so the program director has an idea of the strengths and weaknesses of their new residents (Amiel et al., 2021).

The EPAs of undergraduate medical education and milestones of GME are designed on a competency-based scale, like the Dreyfus Model of Skill Acquisition (AAMC, 2017; Holmboe & Iobst, 2020). Adult learners progress from a novice level to independent practice (AAMC, 2017; Carraccio et al., 2008; Holmboe & Iobst, 2020). Both EPAs and milestones use four stages to show the progression from novice through independent practice (AAMC, 2017; Holmboe &

Iobst, 2020). Although not a true match, the ideas of each level pair nicely with the first four levels of the Dreyfus Model of Skill Acquisition (Dreyfus, 2004).

Level 1: Novice

The novice relies on the instructor and must actively think through every step of what they are doing (Carraccio et al., 2008; Field, 2014). The novice is unable to multitask as they require complete attention on each step (Field, 2014). In terms of curricula, the novice should have structured didactics to begin building knowledge (G. Lee et al., 2021). The novice learner should focus on learning rules and methods for the skill they are building (Carraccio et al., 2008; Dreyfus, 2004; G. Lee et al., 2021). According to the ACGME, this level can demonstrate knowledge of a skill through multiple-choice questions but may not necessarily know how best to demonstrate the skill itself (Holmboe & Iobst, 2020). The AAMC (2017) indicated that if the instructor does the skill by themselves, the learner is at the novice level.

Level 2: The Advanced Beginner

The advanced beginner can expand on the rules they learned as a novice and apply them to the skill they are learning (Carraccio et al., 2008; G. Lee et al., 2021). The learner likely relies on a template of how to perform the skill (AAMC, 2017). The advanced beginner is the stage at which coaching and mentorship become applicable in the learning environment (Carraccio et al., 2008; G. Lee et al., 2021). Even though they are building relevant skills, the advanced beginner continues to learn through a "detached analytic frame of mind," and due to the required supervision, they do not have responsibility for the skills they are performing (Peña, 2010, p. 4).

Level 3: The Competent

The competent learner can see the larger picture and forms an emotional attachment to the skill they are learning (Carraccio et al., 2008; Peña, 2010). The competent learner begins to

recognize patterns in their tasks and will start to apply logical reasoning skills (Carraccio et al., 2008; Field, 2014). However, the competent learner will still approach the skill with the systematic approach they learned as a novice, careful not to overlook anything (Field, 2014). The AAMC (2017) noted that at this level, the learner can prioritize their questions, which are no longer excessive. Teachers of competent learners should balance supervision with independence and hold students accountable for their decisions and mistakes (Carraccio et al., 2008).

Level 4: The Proficient

The proficient learner begins to use intuition to solve problems, subconsciously calling on their previous experiences to notice patterns over analyzing rules (Carraccio et al., 2008). Proficient learners can correct actions midway through the task and are able to deal with ambiguity in their environments (Carraccio et al., 2008; Field, 2014). Proficient learners are aware of their limitations, seek additional learning opportunities to attend to knowledge gaps, and are open to second opinions when needed (AAMC, 2017; Carraccio et al., 2008; Field, 2014; Holmboe & Iobst, 2020; G. Lee et al., 2021).

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Medical Team Structure in a Teaching Hospital Setting

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Medical students and residents must be supervised by attending physicians in the clinical setting (ACGME, 2021; LCME, 2020). In hospitals and clinics that provide clinical education experiences for medical trainees, medical students and residents work in teams that may consist of medical students, residents, attending physicians, nurses, pharmacists, and other medical profession trainees such as nursing, physician assistant, and pharmacy students (Boileau et al., 2019, Cherney et al., 2018; Eilat-Tsanani, 2020; Khaled, 2021; Minter et al., 2015). These teams work closely together, often for long hours, while treating multiple patients per day (Chang et al., 2020). Teams provide structure for the supervision of patient care, as there are many eyes on

patients throughout the day (Chang et al., 2020; Eilat-Tsanani, 2020; Minter et al., 2015; Sobbing et al., 2020).

Medical teams are often structured with tiered supervision responsibilities: students report to residents, and residents report to attending physicians; this structure creates additional support for learners (Chang et al., 2020; Ofshteyn et al., 2021; Saucier et al., 2021; Sobbing et al., 2020). Participants in a study by Chang et al. (2020) noted that supportive teams increase first-year resident confidence. Additionally, Sobbing et al. (2015) suggested that students feel better supported by residents than by attending physicians and that residents improve the student learning environment through daily interactions with their students. The tiered educational team structure may also help ease faculty responsibility. Eilat-Tsanani (2020) and English (2018) indicated that residents ease the stress of often overworked faculty. Eilat-Tsanani (2020) furthered that in clinical environments with medical students and no residents, faculty often have increased teaching responsibilities because students will require additional supervision. Boileau et al. (2019) noted that a detriment to the team structure is receiving feedback in front of peers and near-peers often causes anxiety for the learners.

Near-Peer Teaching in Medical Education

Near-peer teaching provides the opportunity for a student to learn from a peer who is one to two years ahead in the educational process (Marton et al., 2014). Medical education often relies on near-peer teaching to increase learning opportunities for medical students and junior residents within the medical team structure (Alkhail, 2015; Bandeali et al., 2017; Cherney et al., 2018; Marton et al., 2015; Melvin et al., 2014; Nishikura et al., 2021; Onorato et al., 2021; Owolabi et al., 2014; Rutz et al., 2019; Sobbing et al., 2015; Sternszus et al., 2012). The accrediting bodies of undergraduate and graduate medical education require residents to

participate in the teaching of medical students (ACGME, 2021; LCME, 2021). Many studies showed that both residents and students benefit from near-peer teaching experiences; however, the near-peer teaching experiences suffer when residents do not understand teaching theories and practices (Bandeali et al., 2017; English, 2018; Erlich & Shaughnessy, 2014; Karasik & Dickman, 2020).

Near-Peer Teacher Benefits and Disadvantages

Multiple studies on near-peer teaching in medical education found that there are many benefits for peer teachers in the near-peer teaching process (Erlich & Shaughnessy, 2014; Gibson et al., 2014; Irvine et al., 2018; Lydon et al., 2017; Onorato et al., 2021). Near-peer teaching benefits the peer teacher by increasing their self-perceived teaching credibility and confidence in teaching (Bandeali et al., 2017; English, 2018; Gibson et al., 2014; Irvine et al., 2018; Lydon et al., 2017). Near-peer teaching in the clinical environment prepares physicians-in-training opportunities to develop and practice teaching and leadership skills, which are crucial for their careers as educators to their patients and peers (Bandeali et al., 2017; Onorato et al., 2021). Teaching near-peers also increases learning for medical trainees as they reinforce their clinical and procedural skills by teaching skills to near-peers (Gibson et al., 2014; Irvine et al., 2018; Karasik & Dickman, 2020; Onorato et al., 2021). Karasik and Dickman (2020) noted that by re-learning skills, near-peer teachers become active learners and are therefore more engaged with the subject matter they are teaching. Near-peer teaching can be a rewarding experience for medical trainees; a study by Lydon et al. (2017) found that when teachers see improvement in their students, they experience gratitude and a sense of reward. A study by Andersen and Watkins (2018) added that near-peer teachers can recognize their own growth by seeing where they once were as a student.

A known detriment to near-peer teaching in medical education is that medical trainees are often neither trained to teach nor aware of their leadership and teaching skills until they are teaching their near peers (Bandeali et al., 2017; English, 2018; Karasik & Dickman, 2020). Near-peer teachers who understand educational theories feel better prepared to teach and have higher confidence in their teaching skills (Bandeali et al., 2017; Erlich & Shaughnessy, 2014). According to a study by Bandeali et al. (2017), compared to residents with little or no training, residents who have knowledge and prior training in how to teach are more effective teachers, have better communication skills, and are more enthusiastic teachers. Additionally, even if medical trainees are provided education and training on how to teach, they often are not provided with opportunities to receive feedback on their teaching skills before they become near-peer teachers (Bandeali et al., 2017; Erlich & Shaughnessy, 2014; Gibson et al., 2014; Onorato et al., 2021).

Near-Peer Learner Benefits

Studies showed that near-peer teaching has many benefits to learners in the clinical environment (Alkhail, 2015; Karasik & Dickman, 2020; McKenna & Williams, 2017; Nishikura et al., 2021; Rees et al; 2016; Sobbing et al., 2015; Wolcott et al., 2021). Students may learn better from their near peers because they have similar knowledge levels, social context, and language styles (Alkhail, 2015; Nishikura et al., 2021). Near-peer teaching in the clinical environment allows students to build better relationships with their teams, which lowers their perceived barriers to communicating with their supervisors (Nishikura et al., 2021). Additionally, near-peer teaching provides a psychologically safe environment where learners feel they can ask questions without repercussions from their supervisors (Karasik & Dickman, 2020; Nishikura et al., 2021; Saucier et al., 2021; Wolcott et al., 2021). According to Lydon et al. (2017), learners

believe near-peer teaching creates a culture of shared learning and teaching that boosts their preparedness for clinical practice. Students feel they can ask their near-peer teachers questions outside of clinical relevance and seek advice on personal development and career choice (Sobbing et al., 2015).

Residents as Near-Peer Teachers in Clinical Environment

Residents are required to participate in the education of medical students and other health professionals by the ACGME (2020) and the LCME (2021). Upon graduation, the ACGME (2020) requires all residents to be competent in teaching various stakeholders, from patients and families to health professionals (students, residents, and other health providers). The LCME (2021) requires all medical students to participate in at least one required clinical experience in a setting where they work directly with residents in an accredited graduate medical education program. Multiple studies state that residents spend approximately 25% of their time in residency teaching their near peers (Nishikura et al., 2021; Sobbing et al., 2015; Sternszus et al., 2012). Resident teaching responsibilities often begin early in residency, with some first-year residents responsible for teaching medical students during their first rotation (Bandeali et al., 2017; Marton et al., 2015; Onorato et al., 2021).

Due to the hierarchal structure of medical education and clinical teams, learners are often taught by their next-level senior near-peer: students are taught by residents, and residents act as both learner and teacher (Khaled, 2021; Geary et al., 2021; Schuster, 2020). Because residents often spend the most time with medical students in teams, students rely on residents to provide quality teaching (Cohen et al., 2021; Geary et al., 2021; Khaled, 2021). According to a study by Saucier et al. (2021), residents self-identified as teachers in the clinical environment when considering their interactions and teaching approaches with medical students. When asked about

their approach to teaching medical students in the clinical setting, residents spoke of their role of providing safe learning environments, collaboration, and being role models (Saucier et al., 2021).

Student Perceptions of Resident Teachers

Medical students perceive residents to be effective teachers in the clinical setting (Alkhail, 2015; Cherney et al., 2018; Geary et al., 2021; Melvin et al., 2014; Owolabi et al., 2014; Rutz et al., 2019; Sobbing et al., 2015). A review of relevant research indicated that there is no difference in medical student learning outcomes from resident teaching than from faculty teaching (Alkhail, 2015; Rees et al., 2016; Sobbing et al., 2015). While medical students typically rate all residents highly in teaching skills, there may be some specific characteristics that indicate some residents are better suited to teach (Alkhail, 2015; Melvin et al., 2014; Rutz et al., 2019). In a study aimed to identify objective characteristics of effective resident teachers in emergency medicine, Rutz et al. (2017) found that medical students perceive residents who can manage workflow and show compassion, integrity, and respect to be the best teachers. A similar study by Melvin et al. (2014) suggested that students strongly prefer to be taught by residents with strong knowledge bases and an ability to tailor learning to the individual learner. Traits from both studies (Melvin et al., 2014; Rutz et al., 2017) indirectly aligned with many of the ten non-clinical characteristics residents should have to succeed in residency, as found by Wolf et al. (2018): communication skills, critical thinking, emotional intelligence, ethical behavior, intellectual curiosity, organizational skills, resilience, self-improvement, teamwork, and vocational commitment. While the research studies differed in the characteristics that make residents highly effective teachers, it was clear that both clinical and non-clinical attributes were desired by medical students of their resident teachers (Alkhail, 2015; Melvin et al., 2014; Rutz et al., 2019).

Resident Assessments of Medical Students

Due to the team structure of medical student education and the time residents spend directly working with medical students, residents can provide accurate assessments of medical students during their clinical rotations (Dudas et al., 2012; Frank et al., 2019; Goldstein et al., 2013). Resident and faculty assessments of medical students are often in agreement; however, while resident evaluations are often considered when calculating final clinical grades for medical students, residents are rarely invited to contribute to clerkship grading committees (Dudas et al., 2012; Frank et al., 2019; Goldstein et al., 2013). According to a study by Frank et al. (2019), resident evaluations of medical students are often more accurate than faculty evaluations. Additionally, medical students feel that residents provide more accurate and fair evaluations than faculty (Bullock et al., 2019; Cohen et al., 2021). That said, a major barrier that residents, especially first-year residents, experience when assessing medical students is the lack of training on the grading rubric and how to write summative feedback (Cohen et al., 2021).

Medical Trainee Teaching Workshops

Although they are expected to teach their near peers, residents often lack training on how to be effective peer teachers and need a formal curriculum on teaching strategies and philosophies (Farfan, 2020; Karasik & Dickman, 2020; Ofshteyn et al., 2021; Onorato et al., 2021; Owolabi et al., 2014; Wolcott et al., 2021). A study by Onorato et al. (2021) suggested that learning teaching skills requires a knowledge of educational theory paired with focused practice in teaching with individual feedback. A review of related research showed that a formal teaching curriculum increased teaching attitudes for medical trainees (Anderson et al., 2020; Bandeali et al., 2017; Chokshi et al., 2017; Lydon et al., 2017; Song et al., 2015). Understanding how to teach may increase individual motivation to teach (Nishikura et al., 2021). Finally, learning and

applying teaching methods may increase a medical trainee's desire to become a future clinician-educator (Chokshi et al., 2017; Lydon et al., 2017; Song et al., 2015).

"Resident as Teacher" Workshops

According to Anderson et al. (2020), only 15% of residents received training in how to teach before their teaching responsibilities began. A trend that emerged around 2017 to remedy this lack of training was to conduct "Resident as Teacher" workshops sometime during residency training (Anderson et al., 2020; Chokshi et al., 2017; Farfan, 2020; Geary et al., 2021; Nishikura et al., 2021; Ofshteyn et al., 2021; Wolcott et al., 2021). Residents who attended teaching workshops perceived themselves to be more effective leaders and mentors (Anderson et al., 2020; Chokshi et al., 2017; Farfan, 2020; Geary et al., 2021; Ofshteyn et al., 2021; Wolcott et al., 2021). A study by Ofshteyn et al. (2021) found that residents' self-assessment of teaching skills increased after attending the workshop. According to Anderson et al. (2020), teaching workshops can improve resident confidence in providing quality feedback to their near-peer learners. Other noted benefits of "Resident as Teacher" workshops include patient care, as residents who are strong teachers may positively impact medical decisions around patient safety (Farfan, 2020).

One detriment to these teaching workshops is that they may be implemented too late. While residents are often expected to teach in their first year of residency, "Resident as Teacher" training often occurs in senior residency years (Anderson et al., 2020; Chokshi et al., 2017; Nishikura et al., 2021). In fact, only two studies (Geary et al., 2021; Wolcott et al., 2021) were found on first-year residents attending a "Resident as Teacher" workshop. Geary et al.'s (2021) study required all residents in a five-year surgery residency program to attend teaching workshops yearly yet did not provide results for individual levels of training. While much of the

study by Wolcott et al. (2021) can be applied to medical residents, it is important to note that their study focused on dental residents.

"Student as Teacher" Workshops

Most teaching skill workshops in medical education exist in residency programs; however, some medical schools offer teaching electives and workshops for medical students (Bandeali et al., 2017; Erlich & Shaughnessy, 2014; Marton et al., 2015; Onorato et al., 2021; Song et al., 2015). Conclusions from Bandeali et al. (2017) and Erlich and Shaughnessy (2014) argued that teaching trainees how to teach is the responsibility of medical schools and that by teaching students how to teach, schools are better preparing them for residency, particularly because teaching can be expected within the first months of residency. Song et al. (2015) found "Student as Teacher" training can benefit medical schools because students who learn how to be educators are more likely to contribute to curriculum changes. A large downside to "Student as Teacher" programs is that they are often not required experiences within schools and are merely elective opportunities (Bandeali et al., 2017; Erlich & Shaughnessy, 2014; Marton et al., 2015; Onorato et al., 2021; Song et al., 2015).

Summary

The literature presented in this review provides important background related to the research study. This review first looked at the overview of medical education in the United States with an emphasis on the transition to residency and the known problems associated with the transition. Physician burnout was discussed with attention to resident burnout and the impact of COVID-19-related burnout on physician burnout. The literature then delved into the evaluations of medical students and residents, linking the competency levels to the Dreyfus Model of Skill Acquisition (Carraccio et al., 2008, Dreyfus, 2004). Next, the literature examined the hierarchal

team structure in clinical medicine, which relies on near-peer teaching. Finally, the review explored the topic of teaching workshops and preparation for teaching, with arguments for which level is responsible for this training – medical schools or residency programs.

There are many strengths in the existing research on these topics. First, the literature presented multiple studies on the perceived learning curve between medical school and residency and how the transition to residency is a time of uncertainty for both new first-year residents and residency programs (Boileau et al., 2019; Chang et al., 2020; Chaou et al., 2021; Chen et al., 2015; Minter et al., 2015). Second, the research discussed the higher risk of burnout residents face compared to their peers in other professions as well as compared to physicians of higher levels, with greater levels of suicidal thoughts in the first year of residency (Busireddy et al., 2017; Levy et al., 2019; Yaghmour et al., 2017). Third, the research presented strong arguments for the necessity of hierarchal medical team structures in the clinical training environment and how hierarchies enhance learning for medical students and residents, particularly through the near-peer teaching experiences between residents and medical students (Alkhail, 2015; Bandeali et al., 2017; Chang et al., 2020; Marton et al., 2014; Nishikura et al., 2021; Saucier et al., 2021; Sobbing et al., 2020). Fourth, the research clearly indicated that residents are perceived as successful teachers in the clinical learning environment and that their assessments of medical students are as accurate as those from faculty (Alkhail, 2015; Cherney et al., 2018; Dudas et al., 2012; Frank et al., 2019; Goldstein et al., 2013; Melvin et al., 2014; Owolabi et al., 2014; Rutz et al., 2019; Sobbing et al., 2015). Lastly, the literature examining teaching workshops for medical trainees (both students and residents) suggested they can enhance teaching skills and increase the desire to become future educators (Chokshi et al., 2017; Lydon et al., 2017; Ofshteyn et al., 2021; Onorato et al., 2021; Song et al., 2015).

The weakness in the conducted literature review is that it does not focus on the role of first-year residents as teachers and evaluators of medical students. Research studies conducted on the transition to residency centers on medical knowledge, procedural skills, and mental health of first-year residents (Boileau et al., 2019; Busireddy et al., 2017; Chang et al., 2020; Chaou et al., 2021; Chen et al., 2015; Levy et al., 2019; Minter et al., 2015, Yaghmour et al., 2017). Yet, little is known how, if at all, first-year residents are prepared to teach, evaluate, or even work with medical students in the clinical setting (Anderson et al., 2020; Cohen et al., 2021). Additionally, most of the research on resident teaching was from the student, not the resident, perspective (Saucier et al., 2021). What is missing is not whether residents can be effective teachers or evaluators of medical students, but the residents' experiences in teaching and evaluating students. A particularly large gap in this research is on the first-year resident perspective (Cohen et al., 2021). If research addressed resident experiences or training in teaching and evaluating medical students, it is in the later years of residency (Anderson et al., 2020; Chokshi et al., 2017; Cohen et al., 2021; Dudas et al., 2012; Frank et al., 2019, Geary et al., 2021; Goldstein et al., 2013, Nishikura et al., 2021; Wolcott et al., 2021). It also remains unclear how resident evaluations of medical students are incorporated into the clinical grades (Dudas et al., 2012; Frank et al., 2019; Goldstein et al., 2013).

The next step for this study was to explore the following: how first-year medical residents perceive their role as an evaluator of third-year medical students; what the experience of first-year medicine residents is regarding the preparation to evaluate third-year medical students; and how first-year medical residents describe their lived experiences related to the transition to residency. The study allowed first-year residents to tell their experiences in working with and evaluating medical students in their current year of training. The next chapter presents the

methodology and research design that this study used to answer the research questions. Chapter 4

presents the results of the research study, and Chapter 5 discusses recommendations and

conclusions drawn from the interpretation of the collected data.

CHAPTER 3: METHODOLOGY

This basic qualitative study aimed to explore how first-year residents', also known as interns or post graduate year ones (PGY1s), perceive the impact of evaluating third-year medical student in the inpatient clinical setting on their transition to residency. Evaluations and grades of medical students are known to be one of the top screening methods residency programs use when selecting candidates to interview each year (Filiberto et al., 2021; Hartman et al., 2019; Stephenson-Famy et al., 2015 Sudan et al., 2014; Thompson et al., 2016). First-year residents work on hierarchal teams in the inpatient medical setting, which allows them to provide near-peer teaching to medical students while receiving guidance and supervision from higher-level trainees (senior residents and/or fellows) as well as attending physicians (Alkhail, 2015; Bandeali et al., 2017; Cherney et al., 2018; Cohen et al., 2021; Marton et al., 2015; Nishikura et al., 2021; Onorato et al., 2021).

Although first-year residents have a near-peer teaching relationship with medical students, a known problem in medical education is their lack of preparation in participating in the evaluation process of medical students (Cohen et al., 2021). Additionally, when medical students transition to the role of resident, they face an array of challenges related to their new professional identity and the anxiety and uncertainty the new role and identity bring (Chang et al., 2020). The problem that this study examined was a gap in the literature regarding the first-year resident experience in evaluating medical students and how it may relate to the pressures associated with the transition to residency. The research study explored the perceptions of first-year residents using the following research questions:

Research Question 1: How do first-year medical residents perceive their role as an evaluator of third-year medical students?

Research Question 2: What is the experience of first-year medical residents regarding the preparation to evaluate third-year medical students?

Research Question 3: How do first-year medical residents describe their lived experiences related to the transition to residency?

Social constructivism theory (Vygotsky, 1978) and a modified version of the Dreyfus Model of Skill Acquisition (Carraccio et al., 2008) contributed to the theoretical framework of this research study. Social constructivism theory postulates that learning happens collaboratively while learners build on previously learned skills (Kay & Kibble, 2015; Sommers-Flanagan & Sommers-Flanagan, 2018; Thomas et al., 2014). The modified version of the Dreyfus Model of Skill Acquisition (Carraccio et al., 2008) was specifically adapted to the clinical learning environment in medical education and describes how learners progress through stages of graduated autonomy within the social context of medical education.

The chosen methodology for this study was to conduct a basic qualitative study due to social constructivism underlying this form of study as participants construct meaning to their experiences through their social environment (Merriam & Tisdell, 2016). The study collected data through semi-structured individual interviews, which were held virtually via Zoom with all sessions' video and audio recorded using the software's secure recording features (Zoom Video Communications, 2016). The researcher used a semi-structured interview guide (see Appendix E), which consisted of open-ended questions to allow for flexibility for the researcher to respond to and explore new information emerging on specific topics (Merriam & Tisdell, 2016; Patten & Newhart, 2018).

Site Information and Demographics

The chosen site for this study was an allopathic medical school within a large public university located in Washington State. The medical school aims to increase primary care physicians in rural areas in the states of Washington, Wyoming, Alaska, Montana, and Idaho, a training program known as "WWAMI" (WWAMI Regional Medical Education Program, 2021). The site had approximately 250-300 undergraduate medical students per class and approximately 1,350 graduate medical trainees in over 120 Accreditation Council of Graduate Medical Education (ACGME)-accredited residency and fellowship programs. The undergraduate and graduate medical trainees rotated at five primary hospitals within a ten mile radius of the university as well as at over 300 community training sites in six states and two countries (UW Medicine, n.d.-d).

Ninety-six percent of all medical students at the site were from the WWAMI region; it was unclear which states and/or countries were represented by the accepted out-of-region students (UW Medicine, n.d.-a). Of the students who matriculated in 2022, 61% identified as White, 23% lived in rural counties, and 17% identified as Underrepresented in Medicine ("URiM," which included people who identified as African American/African/Black, Hispanic/Latinx, Pacific Islander/Hawaiian Native, American Indian/Alaska Native, Bhutanese, Burmese, Cham, Hmong, Khmer, Lao, Mien, Thai, and Vietnamese) (UW Medicine, n.d.-a). The institution's Graduate Medical Education (GME) office does not release demographic reports for residency and fellows; however, they acknowledged an increase in BIPOC and URiM candidates who matched at the institution in 2022 based on self-reported data from clinical departments within the School of Medicine (UW Medicine, 2022). Of the first-year resident positions

available at the site, 86% were filled by applicants from outside institutions (NRMP, 2022; University of Washington School of Medicine, 2022).

At the time of the study, 170 residents worked in the training program (internal medicine residency program) from which the interview participants were recruited, including 66 first-year residents, 52 second-year residents, and 52 third-year residents. Within the first-year class, 13 were preliminary track residents that spent one year in the internal medicine residency program before finishing their training in neurology or ophthalmology. Twenty-seven percent of the program's residents identified as URiM, 41% identified as White, 20% identified as non-URiM minority, and 12% chose not to self-identify their race when they applied to the program. These residents graduated from 87 different medical schools across 36 states and seven countries, including five osteopathic medical schools and six international medical schools. At the time of this study, residents from this program were healthy adults ranging from 25 to 44 years old. The variability in the background of the program's residents may impact both the individual's transition to residency as well as their preparation to evaluate medical students.

First-year residents in the internal medicine training program work with third-year medical students on inpatient medicine wards at three hospitals that serve different patient populations and have different team structures. The first is an academic hospital that offers "exceptional, multidisciplinary care to a vast array of patients who come to us from across the globe" (UW Medicine, n.d.-c, para. 2). The inpatient medicine wards teams at this site have one to three third-year medical students, one first-year resident, a third-year resident, and an attending physician (University of Washington Internal Medicine Residency, 2021). The second is a county-owned hospital that prioritizes underserved patients, including, but not limited to, immigrants, under- and uninsured, domestic and sexual assault victims, incarcerated persons in

the county's jails, people with substance abuse problems, or mental illness (UW Medicine, n.d-b). The team structure at this site is zero to three third- or fourth-year medical students, one to two first-year residents, a second- or third-year resident, an attending physician, and allied health professionals (University of Washington Internal Medicine Residency, 2022). The third is a Veteran's Affairs hospital, which treats the area's veteran population. Teams on this hospital's medicine wards consist of two third-year medical students, two first-year residents, one second-year resident, an attending physician, and a medical team assistant (University of Washington Department of Medicine: Medicine Student Programs, n.d.). The first-year residents rotating in the county and veteran's affairs hospitals consist of residents in internal medicine, psychiatry, rehab medicine, psychiatry, family medicine, and anesthesiology, which adds further variations among the inpatient teams (Amion, n.d.). These variations may influence first-year resident perceptions of evaluating medical students on inpatient wards.

Participants and Sampling Method

The target population for this basic qualitative study was first-year residents in the internal medicine residency program at the site. This site was chosen due to the three-hospital system, which allows for unique experiences on inpatient medicine wards teams. The researcher contacted the site's Institutional Review Board, which informed the researcher that they did not need to go through the site's IRB in addition to the IRB at the University of New England (see Appendix A). The researcher also contacted the site's Office of Labor Relations because the residents are represented by a union; the office did not have any concerns if residents were informed that the study was voluntary (see Appendix B).

The sampling method of this study was purposeful sampling, which is a standard sampling method used in qualitative research studies (Creswell & Guetterman, 2019, Ravitch &

Carl, 2021). In purposeful sampling, participants are chosen intentionally to allow the researcher

to obtain the information needed to answer their research questions (Ravitch & Carl, 2021). To

understand the perceptions of first-year residents evaluating third-year medical students on

inpatient wards, the researcher purposefully selected a sample of residents who were in their first

year of residency who had experienced evaluating third-year medical students on inpatient

wards.

In qualitative research, sample size determination relies on the data analysis process that

occurs simultaneously with data collection (Patten & Newhart, 2018). Saturation, the point

where data collection no longer yields additional themes or new information, often informs the

sample size (Merriam & Tisdale, 2016; Patten & Newhart, 2018). While there is no standard for

the minimum number of participants needed in a qualitative study, Patten and Newhart (2018)

suggested that qualitative studies typically have between 10 and 26 participants. The researcher,

therefore, planned to recruit 10 participants for the study and acknowledged saturation would

likely occur with this number of participants. This researcher recruited nine participants for this

study.

Instrumentation and Data Collection

A central feature of all qualitative research is that individuals interact with the social

world to construct their reality (Merriam & Tisdell, 2016). The researcher plays an important

role in constructing the meaning of experiences by engaging with study participants (Merriam &

Tisdell, 2016). The research questions of the study asked about the lived experiences of first-year

medical residents; obtaining their first-hand accounts via interviews was an appropriate method

to obtain the information needed to answer the research questions. The researcher conducted

semi-structured interviews and constructed the meaning of their experiences through data interpretation.

After obtaining IRB approval, the researcher sent a study recruitment email to the site's Program Director and Associate Director asking for assistance in forwarding the email to all first-year residents in the program (see Appendix C). The researcher attached the Participant Information Sheet (see Appendix D) to the recruitment email. The researcher believed that having the Program Director or Associate Director forward the recruitment email to residents would increase the likelihood of residents reading the email, especially because the researcher used their University of New England email account for recruitment, which could be filtered into the residents' junk mail folder. Additionally, the Program Director and Associate Director have a high amount of "pull" with the residents, and having one of them forward the email may result in a greater number of participants. The researcher asked these individuals if they would forward this email to the residents at the appropriate time, both of whom verbally consented (K. Corning, personal communication, February 22, 2023; K. Steinberg, personal communication, January 25, 2023). The recruitment email asked for volunteers to participate in this study and requested they email the researcher directly within two weeks of the email date if interested in participating in the research study.

The researcher developed an interview protocol (see Appendix E) that had open-ended questions to create conversation and allow for new topics to be explored in the moment during the interview (Merriam & Tisdell, 2016). The interview protocol was shared with participants before the interview, as it was included in the confirmation email to participants when their interview was scheduled. The interview protocol consisted of eight questions that asked about their experiences on inpatient wards in medical school and residency. Interviews were conducted

virtually and recorded via Zoom. Interviews were transcribed following each session. Member checks were used to receive feedback from participants on the collected data (Bloomberg & Volpe, 2019). To conduct the member checks, the researcher sent individual participants their interview transcription for review to ensure accuracy. Interview data was then coded, which allowed for the data to be organized into patterns and themes (Bloomberg & Volpe, 2019).

Data Analysis

After each interview was conducted, the researcher used the transcription option in Zoom to transcribe the interview. The researcher then reviewed the transcription while playing back the recording to ensure the accuracy of the transcript and revised the document as necessary. The researcher particularly took time to remove any identifying information (e.g., using pseudonyms instead of the participant names as well as using gender-neutral pronouns). A master list was used to connect participants' identifying information with their assigned pseudonyms. The master list was stored as a file on the researcher's personal computer, which was secured by a password. The researcher sent each participant their transcribed interview for review. For security purposes, the recorded files and transcriptions were saved on the researcher's personal OneDrive account through the University of New England; no other person had access to these files. The researcher destroyed the interview recordings immediately upon participant approval of the interview transcripts or after one week if the participant did not reply to the email requesting transcription approval.

After the interviews were transcribed and reviewed by the participants, the researcher began the coding process. Coding provides meaning to the data collected by assigning words or phrases with chunks of data (Ravitch & Carl, 2021; Saldaña, 2021). The researcher used inductive coding, an approach that "spontaneously creates original codes the first time data are

reviewed" (Saldaña, 2021, p. 41). The coding process consisted of two cycles. While the first cycle of coding allowed for data analysis, the purpose of the second cycle was to synthesize the data, allowing the researcher to focus on aspects of the research questions (Ravitch & Carl, 2021; Saldaña, 2021). The researcher used pattern coding in the second round of the coding, which allowed for the grouping of codes "into a smaller number of condensed categories, themes, or concepts" (Saldaña, 2021, p. 322). The researcher used QDA Miner, a software program that assists in qualitative data analysis, to code, manage, and organize the data.

Concurrent with the coding process, the researcher wrote analytic memos to reflect on what was learned, what was still uncaptured, and how the codes related to one another (Bloomberg & Volpe, 2019; Ravitch & Carl, 2021; Saldaña, 2021). These memos were entered into QDA Miner and linked to any corresponding data that provoked the thought. As Saldaña (2021) recommended, the memos were titled with a short description so they could be easily retrieved when needed. The transcriptions and memos will be retained on record for three years after the completion of the study and then destroyed. The study data may be accessed upon request by representatives of the University of New England (e.g., faculty advisors, Office of Research Integrity, etc.) when necessary.

Limitations, Delimitations, and Ethical Issues

It is important for the researcher to acknowledge limitations, delimitations, and ethical issues that may exist in the study. Every study has inherent limitations and characteristics that may influence the interpretations of findings regardless of how well it is designed (Bloomberg & Volpe, 2019). This section outlines the limitations, delimitations, and ethical issues that provide the scope and the context for the study.

Limitations

A concern of this research study was the existing relationship the researcher had with the study participants. The researcher chose the institution as the study site due to the multiple hospitals and team structures on inpatient wards that the first-year residents experience. While not in a supervisory role, the researcher worked in the administrative office of the residency program and participants may not have been as honest in their answers as they would in a study by someone not affiliated with the program. That said, a limitation of interviews as a data collection source was a bias that may have resulted in responses due to the researcher's presence regardless of their connection to the researcher (Creswell & Creswell, 2018). According to Creswell and Poth (2018), interviews create an inherent power imbalance and hierarchy between the interviewer and the interviewee. While the researcher's relationship with the study participants may have caused additional bias in participant responses, this limitation could exist regardless of said relationship. Another limitation of interviews was the differences in participant articulation and perception levels (Creswell & Creswell, 2018). Individuals are not equally articulate and perceptive when describing their experiences. To reduce this limitation, the researcher used clarifying and elaborating probes to draw out conversations with participants as needed (Creswell & Guetterman, 2019).

As with any qualitative study, the interpretation of the data in this study was subjective to the researcher's judgment (Bloomberg & Volpe, 2019; Creswell & Creswell, 2018; Ravitch & Carl, 2021). Thus, personal bias was another potential limitation of the research study. To reduce personal bias, the researcher conducted member checks to ensure the interview was transcribed accurately and to allow participants an opportunity to edit anything that they did not deem accurate (Creswell & Poth, 2018).

Delimitations

Delimitations are the attributes that define the boundaries of the study (Bloomberg & Volpe, 2019). A significant delimitation of the research study was that the scope of the study and participant sample was limited to first-year residents from a single residency program. A possible critique of this study may be the generalization that it only applies to internal medicine residents at the chosen research site. A second delimitation of the study was the use of semi-structured interviews as the sole source of data collection (Bloomberg & Volpe, 2019).

Ethical Issues

Ethical issues may occur at any stage in the research process, although considerations to protect participants mainly stem from informed consent, safeguarding their confidentiality, and minimizing harm (Bloomberg & Volpe, 2019). The Belmont Report (Office of Human Research Protections, 1979) provides guidelines for ethical practice in research with human subjects. The three principles outlined in the Belmont Report are respect for persons, beneficence, and justice.

Respect for persons refers to participant autonomy, that the researcher respects the participant's autonomy and protects participants with diminished autonomy (Office of Human Research Protections, 1979). All study participants were healthy adults; none of them required additional protection. Respect for persons also requires study participants to receive adequate information to make an informed decision to participate in the study. Prior to agreeing to participate in the study, all participants were aware that the study was voluntary and were informed of the study's purpose via the recruitment email and Participant Information Sheet (Appendices C & D). Informed consent was obtained verbally from the study participants prior to the start of the semi-structured interviews. Participants were informed before the start of the interview that they may withdraw their consent to participate at any time (see Appendix E). If a

participant withdrew their consent, the researcher would immediately destroy any recordings or transcriptions related to that participant. No participants withdrew their consent at any point during this research study.

Beneficence refers to the obligation to maximize benefits and reduce harm to study participants (Office of Human Research Protections, 1979). This study was designed to have minimal risks to participants. Participants were informed that participation in the study would not impact their standing in the residency program. This was made clear at multiple points in the process: the recruitment email, the study participant sheet, and in the introduction of the individual interviews (Appendices C, D, & E). Potential risks included breach of confidentiality. Efforts to maintain the confidentiality of the participants included using gender-neutral pseudonyms and pronouns when transcribing the interviews. Additionally, all documents and notes about this study were kept secure and protected. Study information was never retained on any server or computer that is owned by the training program institution. All recordings and transcripts were kept on the researcher's personal, password-protected OneDrive account through the University of New England. The researcher destroyed all recordings immediately after transcriptions were completed and reviewed by the pertinent study participant. The master list was destroyed once all participants completed their member checks (or after one week following the last interview was transcribed and sent to the participant). Transcripts will be retained on record for three years after the completion of the study and then destroyed.

Justice in research with human subjects refers to the idea that all benefits and burdens should be equally distributed to individuals (Office of Human Research Protection, 1979). The potential group of participants included all first-year residents in the site's internal medicine residency program with no prior graduate medical education training. All potential participants

had the same opportunity to participate in the study. Additionally, all study participants had the opportunity to review their interview transcriptions for accuracy.

Trustworthiness

Ensuring trustworthiness in a qualitative study requires the researcher to engage in ethical practice throughout the research process (Merriam & Tisdell, 2016). Because of the researcher's role in the data collection process in qualitative studies, they must also be considered credible and trustworthy (Merriam & Tisdell, 2016). Trustworthiness relates to the study's credibility, transferability, and confirmability (Bloomberg & Volpe, 2019; Merriam & Tisdell, 2016).

Credibility

Credibility pertains to the relationship between the findings and reality (Merriam & Tisdell, 2016). While reality is subjective and can therefore never truly be captured, one method to get as close to the participants' reality as possible is to have adequate engagement in data collection (Merriam & Tisdell, 2016). This strategy includes reaching data saturation, a point where no new information arises with new data collection (Merriam & Tisdell, 2016; Patten & Newhart, 2018). An additional measure to enhance credibility is to conduct member checks, which allows participants to respond with validation to the transcription of the interview to ensure accuracy (Merriam & Tisdell, 2016; Saldaña, 2021), which was done in this study.

Transferability

In qualitative research, the goal is not to produce generalizable truths that can be easily adapted to all other settings (Bloomberg & Volpe, 2019; Ravitch & Carl, 2021). Rather, the aim is to produce "descriptive context-relevant findings that can be applicable to broader contexts while still maintaining their context-specific richness" (Bloomberg & Volpe, 2019, p. 205). Transferability in qualitative studies refers to whether the study produced enough detailed

descriptions of the context and data generated to allow for audiences to compare the study to other contexts (Bloomberg & Volpe, 2019; Ravitch & Carl, 2021). The researcher should keep detailed notes and records pertaining to the contextual elements of the study so that readers can understand the study's findings (Bloomberg & Volpe, 2019; Ravitch & Carl, 2021). Readers should be able to understand the conclusions and recommendations of the study (as well as their contextual relevance) so they can apply the study to other settings (Bloomberg & Volpe, 2019). To ensure transferability of this study, the researcher provided detailed descriptions of the participants, the study site, the interview responses, and the coding process. The researcher also completed a detailed literature review to provide additional context of the conclusions and recommendations of this study.

Confirmability

Confirmability accounts for the inherent lack of objectivity in qualitative studies (Guba, 1981, as cited in Ravitch & Carl, 2021). A goal of confirmability is to acknowledge and account for all the possible ways bias interferes with data interpretation (Ravitch & Carl, 2021). Reflexivity is one way to practice confirmability. Reflexivity is "an attitude of attending systematically to the context of knowledge construction, especially to the effect of the researcher at every step of the research process" (Stalmeijer et al., 2014, p. 937). The researcher practiced reflexivity through their use of analytic memos. Writing analytic memos throughout the study is a common reflexive practice in qualitative studies (Ravitch & Carl, 2021; Saldaña, 2021). According to Ravitch and Carl (2021), "memos serve as connective tissue for data collection and analysis process" (p. 108). Additionally, participants of this research study had the opportunity to review their transcripts in the form of a member check, which allowed for data authentication (Ravitch & Carl, 2021).

Summary

This chapter provided a description of the chosen methodology for this basic qualitative study aimed at exploring first-year residents' perceptions on the impact of evaluating third-year medical students in the inpatient setting on their transition to residency. The following research questions guided the study:

Research Question 1: How do first-year medical residents perceive their role as an evaluator of third-year medical students?

Research Question 2: What is the experience of first-year medical residents regarding the preparation to evaluate third-year medical students?

Research Question 3: How do first-year medical residents describe their lived experiences related to the transition to residency?

The study used social constructivism theory (Vygotsky, 1978) as well as Carraccio et al.'s (2008) modified Dreyfus Model of Skill Acquisition as the theoretical framework. According to Merriam and Tisdell (2016), constructivism inspires all basic qualitative studies, as the purpose of these studies is to understand how individuals construct meaning from their life experiences.

Data collection occurred through virtual semi-structured individual interviews. Participants were selected through purposeful sampling, with a goal of reaching saturation in the data (Merriam & Tisdell, 2016; Patten & Newhart, 2018). Data were transcribed and reviewed for accuracy by both the researcher and the study participants. Data analysis was done in two cycles; the first cycle allowed for analysis, and the second for data synthesis (Saldaña, 2021).

Study limitations, delimitations, ethical issues, and trustworthiness were explored in this chapter relative to the context of the research study. All efforts were made to maintain confidentiality throughout the research process, and the researcher practiced reflexive journaling

through analytical memos to ensure confirmability. Study findings are presented and analyzed in

Chapter 4, including the exploration of codes and themes derived from the data. Chapter 5

discusses the study's implications and recommendations.

CHAPTER 4: RESULTS

The purpose of this basic qualitative study was to explore the lived experiences of first-year medical residents evaluating third-year medical students in an inpatient clinical environment. Physicians in training take on a new professional identity when they transition from medical school into their first year of residency training (Chang et al., 2020). Part of the new professional identity first-year residents absorb is a near-pear teacher of the medical students on the hierarchal teams on which they work in the clinical setting (Alkhail, 2015; Bandeali et al., 2017; Cherney et al., 2018; Cohen et al., 2021; Marton et al., 2015; Nishikura et al., 2021; Onorato et al., 2021). In the clinical teams, they work more closely with the third-year medical students than more senior members of the team, such as faculty, at many medical schools; however, first-year residents are often under- or untrained in how to contribute to the summative evaluations of third-year medical schools although they are often asked to provide evaluations of the student's clinical performance (Cohen et al., 2020; Geary et al., 2021; Khaled, 2021). Many residency programs use clinical grades of medical students as a screening method to decide which candidates to interview for positions in their program (Filiberto et al., 2021; Hartman et al., 2019; Stephenson-Famy et al., 2015 Sudan et al., 2014; Thompson et al., 2016). The problem that this study examined was a gap in the literature regarding the first-year resident experience in evaluating medical students and how it may relate to the pressures associated with the transition to residency.

Social constructivism theory (Vygotsky, 1978) and Carraccio et al.'s (2008) adaptation of the Dreyfus Model of Skill Acquisition provided the theoretical framework for this study. In combination with the theoretical framework, this study was guided by the following research questions:

Research Question 1: How do first-year medical residents perceive their role as an evaluator of third-year medical students?

Research Question 2: What is the experience of first-year medical residents regarding the preparation to evaluate third-year medical students?

Research Question 3: How do first-year medical residents describe their lived experiences related to the transition to residency?

Social constructivism theory suggests that adults learn through building skills on top of previously learned skills as well as through the social interactions in their learning environment (Kay & Kibble, 2015; Sommers-Flanagan & Sommers-Flanagan, 2018; Thomas et al., 2014). The Dreyfus Model of Skill Acquisition suggests that near-peer teaching factors into the learner's progression through each of the designated learning stages within the model (Boateng et al., 2009; Carraccio et al., 2008; Dreyfus, 2004; Green, 2016; Peña, 2010). Carraccio et al. (2008) adapted the model specifically for medical education, adding a sixth level of "Master."

Participants were recruited through email communication sent from the residency program leadership (see Appendix C). Interested participants who met the study requirements of being in their first year of graduate medical education training contacted the researcher to schedule virtual interviews. The one-on-one interviews, conducted by the researcher, were semi-structured around an interview protocol consisting of eight questions (see Appendix E). Interviews were conducted virtually using Zoom. The interviews were recorded and transcribed by the researcher using the transcription feature in Zoom, reviewing each line for accuracy in conjunction with the video recording. During the transcription review process, the researcher de-identified each interviewee and assigned a random gender-neutral name to each participant. The researcher provided each participant with the opportunity to perform a member check of the

transcribed de-identified interview. Participants had one week to review the transcription for accuracy and make changes; after one week, the transcription was deemed as approved by default. As part of the member check process, participants were provided the opportunity to change their assigned pseudonyms if desired. Video recordings of interviews were deleted after the approval of each transcription.

Analysis Method

Once the transcriptions were member checked, each transcription was uploaded to QDA Miner (a qualitative data analysis software to assist researchers with the organization of data, managing coding, and analyzing data). The researcher read each transcription prior to coding the data in QDA Miner. In the first round of coding, the researcher used an inductive coding process, assigning codes based on the data itself (Saldaña, 2021). The first round of coding resulted in 74 unique codes across three domains (larger spheres of content): evaluations, transition to residency, and inpatient wards experience. The domains were derived based on the categories used to organize the codes within QDA Miner. In a second round of coding, the researcher used a pattern coding process to group the data together (Saldaña, 2021). Concurrent with both rounds of coding, the researcher wrote analytic memos to reflect on how the codes related to one another; the memos were also coded as part of the data collected (Bloomberg & Volpe, 2019; Ravitch & Carl, 2021; Saldaña, 2021).

The second round of coding resulted in condensing the codes into 26 unique codes across nine categories and three domains. The domains were the larger topical areas that surrounded the context of the identified categories used to group the individual codes. For example, the categories of "perspectives of student grades," "evaluating MS3s," and "preparedness for evaluating MS3s" all fell within the larger context of evaluations. The categories "medical

school," "residency program," and "PGY1 stressors" all corresponded with the larger context of the transition to residency. Finally, the categories of "clinical environment," "learning environment," and "working with MS3s" were associated within the sphere of the participants' wards experience. Table 1 provides a delineation of the final code book.

Table 1

Final Codebook

Code	Category	Domain
Subjectivity/Perceived Fairness	Perspectives of Student	Evaluations
Importance on Match	Grades	
Approach to Evaluations	Evaluating MS3s	
Comfort in Evaluations		
Lack of Training	Preparedness for Evaluating	
Looking to Others	MS3s	
Learning by Doing		
Bootcamp/Course	Medical School	Transition to Residency
Training in Teaching		
Sub-Is		
Orientation/Other Training	Residency Program	
Sense of Community		
Psychological Safety		
EMR	PGY1 Stressors	
Learning Curve		
Clinical Knowledge		
New Environment		
Impostor Syndrome		
Setting	Clinical Environment	Wards Experience
Team Structure		
Responsibility to Patients		
Team Dynamics	Learning Environment	
Student vs. PGY1 Role		
Responsibility toward MS3s	Working with MS3s	
Uncertainty of Role		
Near-Peer Relationship		

Presentation of Results and Findings

Nine eligible participants were recruited for this study. Participant eligibility criteria for this study consisted of being in their first year of residency with no prior graduate medical

education experience; each participant completed at least one rotation during their first year of residency where they evaluated third-year medical students in the inpatient setting. The participants' experiences were gathered through semi-structured interviews consisting of eight questions (see Appendix E), averaging 52 minutes in length. The semi-structured interviews were conducted in March and April of 2023.

Individual Experiences

The following descriptions attempt to depict each participant's experiences in (a) the transition to residency; and (b) evaluating third-year medical students in the inpatient setting. Each participant interview was individually coded before the data were collectively analyzed to generate overarching themes. Each participant was assigned a gender-neutral pseudonym to protect anonymity; gender-neutral pronouns are also used in the descriptions of each participant's experience. The individual data is reviewed to reflect each participant's experience before discussing the overarching emergent themes.

Charlie

Charlie described their first two months of residency as "overall, very difficult," although they reflected that it became easier over time. Charlie revealed that one reason their transition to residency felt difficult was due to the lack of clarity in their medical school's expectations for medical students in clinical settings, specifically around how to conduct patient exams and present findings to their attendings,

> We were taught during pre-clinical, and then early part of clinical year, to do those comprehensive exams and histories. And then halfway through the clinical year the attendings were like you don't need to report all this, only tell me what's important. But I didn't know how to do that. And…not being able to make those adjustments on the fly

because I didn't know how to do it, I think, was really detrimental for how I felt about

myself.

Charlie also discussed the clinical knowledge gaps that impacted their transition to residency.

They spoke of the new role as a provider to patients, and that they now had to "think on the fly"

to come up with plans for the complaints their patients presented within clinic. They also

commented that they were unaware of the generic names for common medications,

I remember I asked my senior I was cross-covering, and they're like, hey, can you order

some calcium carbonate for this patient? I didn't realize calcium carbonate is just TUMS,

so I looked up what calcium carbonate is in UpToDate and asked my senior like, hey, is

this okay? [They said] yeah, it's just TUMS. It's like you could get however much you

want. So things like that, I think, just having that responsibility was tough, and then

getting used to it after a couple of months in, I feel like if that was better.

When asked about the role the residency program played on their transition to residency, Charlie

spoke of the supportive environment compared to their medical school, "It definitely feels a lot

safer than it did in medical school because I don't feel like my lack of knowledge or like me

asking a question will [negatively impact my career trajectory]."

When asked about their experiences teaching third-year medical students, Charlie spoke

of using their negative experiences in medical school to help guide the students they work with.

They reflected on how they teach their medical students to do initial patient examinations based

on the patient's complaints, so students do not have similar experiences they had when

presenting exam findings to their attendings, "what felt like was that kind of rough transition I

didn't really get the guidance through is mostly what I've been trying to teach."

Charlie talked about the difficulties in accurately evaluating third-year medical students. They reflected that while they had training on evaluating medical students during the residency program orientation at the start of the year, they were conflicted on how best to evaluate because they did not want to negatively impact the career trajectories of their students. Charlie shared,

> I think it's really hard because everybody evaluates students differently…I talk[ed] to some co-interns, they're like, you know, 5s down the board, like that doesn't really matter unless they do something egregious. And like a 5, when you read the description, it feels like almost unattainable... if I were to grade everybody for how I think it would be based on the scale, and knowing that other folks don't do that, it would only put these students at a detriment when it's like I think this is where they should be…I've definitely been leaning towards like hyperinflating grades, like 4s and 5s… I wouldn't give things lower because I don't want to harm them.

When asked whether Charlie felt first-year residents should be responsible for evaluating third-year medical students, they initially said yes because they felt first-year residents had the most "face time" with the medical students. However, shortly after they said yes, they also stated that first-year residents are the most overwhelmed on the team and likely do not have the bandwidth to submit quality evaluations.

Jessie

Jessie described their transition to residency as a "steep learning curve," particularly in learning "about things that you did not learn in med school or learning more about more complex management issues." Jessie also shared that learning a new medical records system was especially difficult for them in their first few months of residency. Other challenges they noted were the new responsibilities that come with the role of residents,

You have to make sure your patients are well taken care of, you've rounded on all your

patients, and then, on top of that…making sure your med students are also learning and

they're presenting appropriately, managing the patients appropriately. And then added to

all this is obviously the background requirements that I needed. So, like, Step 3,

something that's needed to be completed in intern year, and that's…an added pressure in

your learning.

Jessie shared that their medical school's requirements helped them prepare for the clinical

workload of residency. Jessie shared that they were required to do a hospital medicine elective

during their fourth year, where their patient load was like that of a first-year resident while only

working with an attending. They further explicated this by stating,

The overall experience of having to independently manage those patients with only one

attending without having to kind of rely on a senior resident, or a third-year resident, and

having to present to your attending straight away kind of helped a lot to help me

transition into an intern, which is what happens because you present to the attending [as

an intern].

Jessie reflected on the residency program's positive role in their transition to residency, "the

residency program [had a] very open-door kind of policy where you could reach out to chiefs and

seniors and try and get a hold of someone and ask about particular questions you might have

had." However, Jessie also shared that they wished the residency program had a longer

orientation that allowed for additional procedure training.

Jessie commented that while they did not feel prepared by the residency program to

evaluate third-year medical students, they felt slightly prepared to because of a "Student as

Teacher" elective they took in medical school where they graded third-year medical students on

their differential diagnosis presentations during family medicine rotations. While Jessie spoke of having a responsibility towards teaching medical students on their teams, they did not believe first-year residents should be responsible for evaluating medical students,

> I personally don't think as an intern you should be able to grade a third-year med student. You should be expected to teach a third-year med student. I don't think the grading should be an expectation… So, think about this. Okay. So, let's say you have Student A and Student B. And by chance, just by luck, based on scheduling and whatnot, Student A ended up doing the inpatient rotation early on in the intern years' year. You have an intern who's super swamped and still learning the system, and then having to grade this med student. And then you have Student B, based on scheduling luck, ended up getting paired with an intern out in May of the intern year, meaning later on in the intern's year. I honestly think those two evaluations are going to be significantly different. And what you've done at this point is you've given Student B an opportunity to have a higher grade than Student A, even though they may be completely equal in skills and quality.

While Jessie believed first-year residents should not evaluate medical students, they also acknowledged that they did not agree with the common grading system of "Honors, High Pass, Pass, Fail" used in medical school. They advocated for a change to the entire system, not just removing the role of evaluator from first-year residents.

Bailey

Bailey described mixed feelings about their transition to residency, "I think, like, sometimes it feels very overwhelming, it sometimes feels very like defeating, and then other times it feels great, and I love learning, and overall, it's good." They shared that the hardest parts

of the transition were the new responsibilities to their patients and being far away from their

family and friends,

> I think, just like the response, the feeling of responsibility, I think it's the hardest part,
>
> like knowing much more that things I do could affect people's lives. I think that part is
>
> still probably the hardest part that, like, sometimes we're not getting double-checked by
>
> everything about everything…And I think just like I'm far away from my family and
>
> from my best friends that I've had for most of my life. So, I think that part has been
>
> difficult in sometimes, where like, things are very hard, and I don't feel like going out of
>
> my way to like meet other people socially. So that part's hard.

Bailey shared that due to the COVID-19 pandemic, they were unable to do the acting internship

and away rotation they wanted, resulting in feelings that they did not have enough repetitions in

pertinent physical exam and procedure skills before beginning residency and that they are only

now "starting to get to that point [of enough repetitions]." They felt the residency program

orientation was helpful, particularly due to the number of resources available to residents that

were available in advance of starting training.

Reflecting on their experience evaluating third-year medical students, Bailey commented,

"I think it's easier to…work with medical students [over time]. So, like having more time spent

with them, I think makes it a like a better evaluator, because you can really understand more

about them." They also shared that their expectations of medical students changed over the

course of the year and that it was difficult knowing at what level the students should be expected

to perform,

> I think also knowing…what level they should be at that stage, I think it's like easy for like
>
> me to forget kind of. Because that seems so recent, and yet I've learned so much to forget

what level…people should be at each stage. I think having kind of a little bit better idea

of that would be helpful.

Bailey also shared that while evaluating medical students gets easier with time, they still

struggled with the subjectivity and importance of student grades when completing evaluations,

What…I've found difficult about evaluating students is that I know how much of a

subjective effect it is on giving someone a numerical score and how that could like really

hurt or harm their like grade in a specific rotation that could ultimately affect what they

go into.

They also offered that they felt there should be a way for people to separate "how to help

medical students grow and learn to become interns versus evaluating their performance."

Additionally, Bailey indicated their role as an evaluator became more difficult when there were

two third-year medical students on the team. They felt that created competition between the

students and made evaluating them without comparison challenging.

Finley

Finley described their transition to residency as a "steep learning curve" and shared that

they felt more confident in their ability to make clinical decisions due to their increased ability to

use "clinical reasoning to back up those decisions." Overall, Finley spoke highly of their medical

school and the residency program in how they were prepared for residency. They shared that the

bootcamp their medical school provided before graduation was particularly helpful in the

"simulation sessions, like learning some practical hands-on skills…specifically, we had some

sessions on how to be the overnight intern." They commented that beginning their residency with

a rotation that immersed them in continuity clinic was particularly beneficial in bridging the gaps

between medical school in residency,

I think a lot of our training in medical school is focused on the inpatient setting, and, like you know, you're seeing this patient for like a couple days at a time. And so, any decision that you make you get to evaluate the next day, like what happens, you know, do they have increased urine output after you give them diuretics? It's very different in the outpatient setting, where you might only see the patient back a month later, sometimes two or three months, and so I felt like the teaching that I got [in clinic immersion] made the transition into clinic a lot easier.

Finley shared that the procedure training they received during the bootcamp in medical school and in the residency orientation was beneficial, although they admitted that since it had been so long since they had done some of the procedures, they would need to "watch someone do [a procedure] or at least watch a couple of videos before [they] could even attempt it now."

When asked about their role as an evaluator of medical students, Finley shared, "I do see myself as someone who is advocating for them and trying to help them to grow in hopefully more specific ways than just you're doing a great job like keep at it." The desire to advocate for their students impacts the evaluations they complete,

I feel like I'm not here to punish them so generally I have been more lenient with my grading, understanding that like depending on where the students are in their year like we usually have, I mean, they'll have their entire careers to grow. So, I'm just here to help them build their foundational skills.

Finley also communicated that the evaluations they received in medical school did not accurately reflect the strengths they brought to their teams or their growth over rotations; they shared these frustrations influence the way they evaluate medical students,

Reiterating the fact that all students have different strengths, and I think it's part, my opinions, I think, are also driven by like the evaluations that I have gotten, and knowing or coming to terms with my own strengths... I wish there were more ways to say or to highlight the good qualities of our students.

Finley disclosed that they felt medical school is extremely difficult, especially during clinical years when students must continue to show interest and passion in learning to not risk negative evaluations. Finley stated that they hoped to keep this in mind as they continue to work with medical students and hoped that they can find ways to make learning fun for their students in the future.

Parker

Parker shared many anxieties around their first year of residency: that they would not be efficient enough, that they would have a large knowledge gap, that they would struggle with the increased patient load, that they would not know correct medications or dosing for their patients, and that they would not have enough oversight from their senior residents or attendings. Parker also shared that their first year of residency was "better than anticipated." Parker attributed this mainly to the sense of community they feel with the residency program, "I think having really good co-interns and seniors, I've been very lucky with the people, I've been very lucky with my team. And I think just in general, our program does a good job of supporting us." Parker felt three requirements in their medical school specifically helped with their transition to residency: (a) that students going into internal medicine complete an ICU rotation; (b) that all students complete an emergency medicine rotation within three months of starting residency; and (c) that students complete a specialty-specific bootcamp before residency. Reflecting on the bootcamp,

Parker commented, "I felt like it did prepare me. But at the same time, I did that [bootcamp] like two months before residency, and I still feel like [residency] was a shock."

When discussing evaluations of medical students, Parker first reflected on the evaluations they received from the first-year residents they worked with on medicine wards as a third-year medical student,

> The intern I worked closest with had also gone to my med school, and so [they] kind of knew how the grading system worked for my med school. And so, it was actually quite hard to honor just based on how our system was set up. On the evaluations, I remember like you needed a '5' from a majority of people to honors, but then the description under the 5 made it seem like you had to be like senior resident level, like you know what you had to do as a medical student. And so [that intern], I think, was the only one that actually gave me mostly 5s, because [they] understood…[they] thought I was a really good medical student, and understood that, like for me to do well in this like course, especially because I was interested in medicine like that's just what it would take, even though it was not like an accurate representation of…what it says like the description… But that's just like how the grading system worked. I think the other intern, who had not gone to [med school name], gave me 3s, which is, like, you know, right spot on where I should be…honestly, I don't remember what the third intern did., I think it was kind of in between, like 4s and 5s.

When asked if they felt this experience of residents with personal experience of being a student at the training site was common across medical education, they responded that they were unsure.

Parker also reflected that as a third-year student they "had to work even harder than maybe [they had] to because [they] wanted…to convey that [they] were interested and

hardworking," while some of their co-students had a showy approach that was more "fake it 'til you make it." Parker shared that this influenced their interactions with medical students,

> But I think you can tell by the quality of a student's note, actually, if they're genuinely interested in trying or not. I have had medical students who do phenomenal on rounds, wonderful presentations, but then, when it comes time to like admitting, they don't want to admit, or their notes are like very short and not thorough, and they haven't thought through everything, and I don't, like you can fake your attitude but I think notes are a lot harder to fake because you actually have to put in the effort to do that. And so that's actually something that I look at a lot is I look at the notes of medical students to see like how they're actually thinking because they don't always verbalize it.

Parker stated, "I feel like I am not qualified yet to evaluate medical students." They felt they could "teach and guide them," but that they could not accurately evaluate medical students' knowledge because they were "still at a point in intern year where…there is so much [they] don't know." They also shared that it was difficult to find time to assess medical students because they were "juggling so many things." Parker disclosed that they didn't feel much had changed in terms of knowledge levels between being a fourth-year medical student and a first-year resident. Due to this closeness in knowledge levels, Parker was unsure as to whether anything could truly prepare first-year residents for their role as an evaluator of third-year medical students.

Phoenix

Phoenix described their first year of residency as "learning on the job and trial by fire." They had a difficult first rotation in the year, which "went as well as it could have gone" because they had a supportive team that taught them the medical records system in addition to teaching them medical knowledge. They shared that they "making more palatable and smaller

compartmentalized goals was really instrumental and made transitioning…reasonably…ok."

While the bootcamp in medical school and the residency program orientation helped ease the

transition, Phoenix attributed most of their preparedness to talking with internal medicine

residents, asking them how best to prepare for residency. They also mentioned that while they

moved across the country for residency, the transition to a new city and community was made

easier because they moved with their partner and another person from their medical school, "I

think that was honestly vitally important in easing our transition, because we kind of served as

like a mini community where we could really help each other answer questions and like situate to

a new place."

Phoenix shared difficult experiences with medical students on their first inpatient

rotation, which negatively impacted the team dynamics and learning environment,

> The first one was…more difficult than I think this most recent one, partially because of
>
> like having two medical students, and it's somehow just happened that I was the intern
>
> that was, basically all the medical student patients were my patients as well. So, I felt like
>
> I had two medical students, like four or five patients with two medical students, and it
>
> was really difficult to like give them autonomy but also know what was happening…and
>
> there was also some behavioral aspects… that made it complicated as well. So that was a
>
> really difficult like, I would say not the best experience… [The students] were very
>
> different in terms of learning style, so one being like, craved autonomy and
>
> independence, and the other being, I don't have the right one for it, but more hand-held,
>
> more walked through each step. And they really didn't want to be taught together…Both
>
> students felt they weren't put in an environment where they were performing well, or
>
> allowed to perform well…I think, yeah overall it left kind of a sour taste and it made me

feel like I can be much, much, much more thoughtful when it comes to like curating the appropriate experience for a learner and my medical student.

When asked how they approached evaluating the different students, Phoenix shared, "I felt really conflicted about that because it was really hard to not let the emotions kind of cloud the judgment of like the of the students' clinical ability." They reflected on trying to look at the growth each student had since the beginning of the rotation when completing the evaluations,

I tried to give each of them their own scale, because to me the growth wasn't the same but maybe the magnitude was different between the two, and I think that was important. There are certain things where it's just like either you know the skill or you don't, but there are other areas where we can expand upon with some growth and offer feedback on that. So, I think, for both of those students I actually wrote pretty lengthy feedback comments for them as opposed to other students that I've evaluated, because there was just so much more in how much I was able to actually scrutinize their skills and their work. It was difficult, though.

Phoenix later commented that they sometimes felt they "didn't have the proper training to know how to interact with students," and that they were "less equipped to offer an appropriate evaluation." Phoenix also disclosed that they were not aware that they would be responsible for evaluating third-year medical students before they started their residency training. Because first-year residents did not evaluate Phoenix on clinical rotations as a third-year medical student, this was a new experience for them.

Riley

Riley focused on the differences between medical students and residents when reflecting on their transition to residency,

I think as a medical student, you're often worried about your evaluations, what people

think of you, more so than getting the right answer. And I feel like as an intern it's kind of

switched where you're more worried about getting the right answer than what people

think of you, and that's not to say that you don't care what people think of you, or rate

you on, it's more just that your role seems to matter more than a medical student. So,

you're more worried about that the actual patients' care as opposed to just being worried

about making sure, you know, your presentation is perfect, and your notes are perfect,

and things like that.

Riley shared that they were worried about their first year of residency, particularly that they

would not have the help they needed to succeed, but that those fears "were all pretty misguided,

thankfully." Riley thought their medical school did a good job of preparing them for residency,

specifically in the internship preparation course, where they were able to choose which sessions

to attend; they attended both clinical sessions that "went over chest x-rays and what labs to order

and basic diagnoses" as well as life-skill courses, "which were very interesting, on loans,

financial literacy, renting versus buying." Riley shared that they wished their medical school

provided "more opportunities to perform procedures or procedure-based workshops as a fourth-

year medical student" because having "more experience with them in medical school is going to

make learning them and residency and internship easier." Riley felt the residency program best

prepared them for their rotations through "the just-in-time trainings right before [starting] a

rotation, going over basic skills and just kind of giving you a quick recap on how certain

procedures are done right before you do a rotation."

As an evaluator of third-year medical students, Riley was initially worried that the

evaluations they submitted would not be anonymous,

I didn't evaluate the medical students as honestly at first because I was worried my name would be attributed to them. Even if the comments were overwhelmingly positive, I didn't want to write even one negative comment that if I happen to work with the medical soon again in the future that they would upset with what I had written.

Since they were reassured by faculty that the evaluations were anonymous, Riley no longer worries about this; however, they may evaluate students higher than they actually performed out of fear of hurting the students' future,

I've even noticed myself sometimes changing the rating I'm putting on medical students after looking over the form again. And in just kind of rethinking things and thinking, well, you know, I probably could have gone either way, whether it's a 3 or 4, so maybe I'll just put them as a 4 just for that very reason.

Riley also shared that providing feedback (both written and verbal) to medical students is difficult. They reflected that they learned how to give feedback through the feedback they received from attendings and senior residents and wished "there was like a consensus way on how to provide feedback…because sometimes it's challenging when supervising doctor provide…different versions of feedback every week." Riley stated that they preferred not to complete evaluations, including the written feedback, of their third-year medical students until they discussed the students' performance with more senior members on the clinical team.

Casey

Casey spoke of their transition positively, noting "there's been definitely a lot of growth this year…overall, it's been a good experience." They shared that they had a difficult first week of residency, coming into a full list of patients on one of the most difficult rotations while also having to learn a new medical records system in addition to other resident tasks, "the first week

was pretty rough, but it made the rest of the year easier honestly, starting with that rotation. So, it was a hard transition at the beginning, but the transition felt more front-loaded." Casey spoke highly of their medical school in terms of preparation for the clinical skills of medicine, sharing that they "had a really good clinical education…a lot of evidence-based medicine focus…learning how to look up articles and support decisions with actual data." However, Casey also shared that at their medical school the students did not sit with the residents in the team room all day, so they did not see the day-to-day tasks of the residents before they became a resident,

> I didn't get that experience as a medical student, so I didn't actually get to see the lived experience of residents throughout the day. We would see them at rounds in the morning, and then we would see them for afternoon rounds, and we would be touching base throughout the day, but we weren't with them all the time. So that was new for me, and I didn't know what do residents, what are they doing all day? What are they sitting and doing on their computer all day long? I didn't really know that. So those were some of the things that did prepare me, and that did not prepare me.

Casey felt the residency program orientation and the intern core teaching conferences the program has in the first two months of the year helped ease their transition. They also felt the residency program has a culture where "people tend to be very excited about teaching," which helped them feel well-supported during their transition.

Casey shared that evaluating medical students was difficult for them, particularly "because the point of comparison for [them] is so different, coming from a med school that did things very differently with their med students." They commented that they were not prepared to evaluate medical students, and although there was some training on how to complete the

evaluations, they are still calibrating what the expectations of medical students are since the team dynamics are so different than what they experienced in medical school,

> But the whole experience has been so new to me. Having the med student in the room for the entire day, and they have so much more responsibility for their patients than we did when I was a medical student, that calibrating it has been really hard for me. And I'm still figuring out how to do that. I was actually very surprised once when we were evaluating a med student, and I heard the attending's evaluation on the same med student. I felt the attending was a lot harsher on the med student than I was, because I was so impressed by everything that they were doing, and they were managing their own patients' care, and communicating with nursing and all the consultants, which is much more than we did when I was a med student at my school. So, I'm still learning how to calibrate things, and I don't feel that I have the best sense of exactly how to evaluate people.

Casey shared, "I don't think my evaluations were as valuable as the senior residents'…or the attendings' evaluations." When they reflected on why they felt this way, Casey disclosed that they felt overwhelmed as a first-year resident and did not pay as close attention to their medical students as they should have. Additionally, Casey stated they had a third-year medical student who was not responsive to feedback, which not only changed the team dynamics but negatively impacted Casey's ability to learn and grow on the rotation. This difficult experience with the medical student possibly contributed to Casey's reflection on their role as an evaluator of third-year medical students.

Taylor

Taylor described their first year of residency as "quite enjoyable," praising the supportive and safe environment they experienced over the year. They mentioned one struggle they had was in learning how to multitask,

> Being an intern, you don't really have much experience, or you're trying to figure out what the right step is for the patient, but at the same time, like you're getting many, many questions from everyone about like orders, or about like what you're doing next, etc. So, I feel like that, juggling that...I found to be really challenging.

Overall, though, Taylor felt their "transition honestly was made easy" by their medical school. Taylor spoke well of their month-long transition to residency course, which provided them with laminated cards outlining frameworks for approaching common medical complaints,

> When I started my intern year like that was super helpful, because…if I had to manage like a shortness of breath I like went to that framework, and it was like, okay, this is how I manage it. So like I feel like in that aspect, like the transition from like a medical student, to being like the primary point of contact and really managing patients was made easy.

Taylor also shared that their clinical rotations in medical school prepared them for residency, particularly the electives they did in their fourth year, without the pressure of needing a good grade for their residency applications. Taylor described the benefits of the lack of pressure on these rotations, "because that pressure wasn't there, I think that helped me in some sense just focus on like absorbing as much knowledge as I could, asking dumb questions…because I knew like that wouldn't have repercussions, if that makes sense."

Taylor spoke highly of working with medical students, commenting, "a lot of the time the medical students teach me things you know about not only medicine, but also about how to communicate with my patients." They stated that the role of an evaluator "is a really important role…of the intern." Taylor shared that their medical school used the same evaluation framework for medical students, which helped them "know what the expectations are and what kind of that framework entails." While they stated they did not receive training in providing written feedback of medical students, Taylor "used [their] own judgement of kind of [their] experience in the past." Taylor preferred to reflect on how they would have preferred to receive feedback as a student when they provided written feedback to their third-year medical students.

Emergent Themes

After the second round of coding, the researcher reviewed the coded data to identify commonalities and overarching themes across the collected data. The researcher found commonalities within and across the three identified domains. For example, some data that was coded under the categories "working with MS3s" and "evaluating MS3s" shared commonalities in that participants felt responsible for the growth of third-year medical students, which emerged as the first theme. The second emergent theme, concerns about the impact of subjective grades and evaluations, was identified through commonalities found in the categories "perspectives of student grades," "evaluating MS3s," "preparedness for evaluating MS3s," and "working with MS3s" (specifically in the data coded under "responsibility toward MS3s." The researcher identified a third theme of unpreparedness to evaluate third-year medical students after a review of the data found in the categories "evaluating MS3s," "preparedness for MS3s," "PGY1 stressors" (specifically in data coded "impostor syndrome"), "learning environment" and "working with MS3s." The fourth theme that emerged from the data, preparedness for the first

year of residency, was found after the analysis of the similarities primarily within the transition to residency domain, although much of the data was cross coded to all identified categories. The following paragraphs will discuss the participants' experiences to support each emergent theme.

Theme 1: Feeling Responsible for the Growth of Third-Year Medical Students

Seven of the nine participants shared that they were unclear about their role on teams relating to third-year medical students, but overwhelmingly felt responsible for helping the student's growth on the rotation. All participants shared their role as a teacher varied based on the team and setting, and the overall team dynamics impacted the learning environment for both medical students and the participants' ability to interact with, teach, and evaluate the third-year medical students. Regardless of team and setting, however, seven study participants shared ways they sought to help third-year medical students become better physicians-in-training on their inpatient rotations.

Two study participants, Bailey and Finley, disclosed that they were told teaching medical students was not a first-year responsibility. Bailey noted,

> I think I was initially told by my senior that like the senior is responsible for the students, and I think [they] said that actually because I was trying to teach them something, and [they're] like, 'don't feel like you need to, I'm going to be the one that's looking after them.' But…I personally love to like teach small things that I think would be really helpful if I knew at that stage or just in general, and I also love learning mechanisms of things and explaining them.

Finley shared, "I didn't necessarily feel like I was teaching the medical students as much, which, after talking to my attendings about it, seemed okay. They said…it's really like the senior resident's job, and the attending's job to do the teaching." While Riley was not informed either

way of their role, Riley inferred that they did not need to teach the third-year medical students from the team dynamics,

> I haven't had a ton of opportunities to do teaching, because in the way I think the teams I have been on have been structured, that role is more for the [senior resident], which I think is totally fine, just with the sheer amount of work that we need to do to move the day forward. It doesn't make a whole lot of sense for me to do a ton of teaching, and I'm also still actively learning, too.

While Riley and Finley did not feel responsible for teaching clinical knowledge, they both identified a desire to move into this role as a senior resident.

> Five participants, Charlie, Bailey, Finley, Phoenix, and Parker, reflected that much of the teaching they did on inpatient wards was on the non-clinical attributes needed to succeed in medicine. Charlie shared,

> I think I haven't really done much like teaching on topics and whatnot, but I think I've tried to help teach the med students how to think about how to approach a patient when they do an admission, or when they're thinking about, I guess the presentations, or just trying to trying to guide them in that direction that I feel like this transitioned on me very suddenly.

Bailey similarly shared that they hoped to teach things that would have helped them as a medical student,

> I personally love to like teach small things that I think would be really helpful if I knew at that stage or just in general, and I also love learning mechanisms of things and explaining them. So, I think that kind of like giving advice about like really practical things that will help like efficiency. And I think especially just like things that I wish I knew.

Parker spoke of their goal to teach medical students the skills needed to be a successful first-year resident,

> I've been trying to focus [my teaching] more on effort and like bedside manner rather than clinical knowledge. Because I think that's something that, clinical knowledge is something that will come with time and like I am still very much so learning that as well. But I think that bedside manner, efficiency, and I don't even remember what the third one I said, effort, I think those three are like key things that you just need as an intern to do well.

Finley talked about the near-peer relationship as a mechanism for how they approach teaching, "I see myself as like an older sibling almost to the medical students like, you know, I'm here to help and to help them grow in whatever capacity they need." Finley added, "a lot of the teaching I do is more like passing on tips that I have learned in the last couple of years that have made my life easier." Like Finley, Phoenix shared that they felt they had a "horizontal relationship" with their medical students, adding that first-year residents "can offer a lot of the teaching in like the logistics of how to just exist on the wards, and like what the paths and responsibilities look like."

A commonality across all nine study participants was the desire to help contribute to their third-year medical students' education in a positive and helpful way. While team dynamics and responsibilities differed across all nine participants, each participant identified that the near-peer relationship allowed them to have a close relationship with their third-year medical students. All study participants identified ways their recent experiences of being a third-year medical student influenced their interactions with their medical students on their clinical teams, be it in how they approached teaching or evaluating the third-year medical students they worked with.

Theme 2: Concerns about the Impact of Subjective Grades and Evaluations

When talking of their role as an evaluator of third-year medical students, all nine participants voiced concerns about the subjectivity of grading practices as well as the negative repercussions of low grades on the career trajectory of medical students. Riley and Casey shared hesitations in providing honest feedback in writing of the third-year medical students they evaluate. Charlie, Bailey, and Finley shared that they sometimes inflated evaluations so they would not hurt their students' chances to match into residency.

All study participants shared worries about the grading scales used to evaluate medical students. These concerns were referenced when participants reflected on their past evaluations as medical students, as well as when they reflected on their experiences as first-year residents evaluating third-year medical students. Charlie spoke of how unattainable the highest scores are in the grading rubric,

> And like a 5, when you read the description, feels like almost unattainable. I think there's only one student I've had so far where I'm like oh [they] are all 5s…Like for this student performing at a 5, [they were] only a third year, and [they] probably could have been an intern. That's how well [they were] performing. Even our attending was like 'oh my gosh, [they] call consults better than I do!' Right? So, it's like that level where it's like a 5.

Parker similarly commented that their current level of performance was not at the honors level as described in the rubric, "you know, what it says like the description quite honestly like I don't even think I meet a 5 still." As described earlier in this chapter, Parker shared the inconsistent evaluations they received as a third-year medical student, where they received high scores from a resident who understood how difficult the grading rubric was at their school, and lower scores,

which they admittedly felt were accurate for their level of training. Finley shared different

concerns with the grading system,

> I think there are certain skills that we require of medical students like the ability to
>
> present in front of big teams, and, like, think on the spot, and demonstrate, like excellent
>
> clinical reasoning, that don't necessarily correspond with their strengths. And they may
>
> have, like, incredible strengths in other realms, like in their actual day-to-day patient
>
> interactions. And I do feel like the way that we evaluate is skewed towards people with
>
> specific strengths.

Jessie corroborated this idea of evaluations being skewed, although they shared their concerns

about unconscious bias factoring into evaluations,

> I think I'll be very transparent about this, because this is something that has bothered me a
>
> lot. It feels someone who hasn't like grown up in the US, or cannot like talk about, I don't
>
> know…the Superbowl or baseball, it gets really difficult to build a rapport with your
>
> seniors and your attendings. And I honestly think a lot of the grading, like…between
>
> Honors and High Pass maybe there's not much a difference [between] who gets Honors
>
> versus who gets High Pass. If I have a person who is equal in skills, I'm going to go with
>
> the person who has built rapport with me, who's talked to me about like what the
>
> Seahawks did, you know? So, I think even though we may think that those biases don't
>
> play a role between circling High Pass versus Honors on our evaluation, I think they do.

Although the study participants identified problems they had with the grading systems in medical

school, none of the participants shared possible solutions.

Three participants shared worries about inconsistencies in grading practices across team

members. Charlie commented,

I think it's really hard because everybody evaluates students differently. And when you

talk to some, and if I talk to some co-interns, they're like, you know, 5s down the board,

like that doesn't really matter unless they do something egregious, like 5s down the

board.

Finley similarly shared that while they do their best to evaluate students based on the narrative

anchors on the grading rubrics, that may not be common practice, "I don't necessarily think

everyone follows them. I think sometimes when people are busy, they're liable to put like all 3s,

or all 4s, or all 5s, whether or not the student actually like fell into those categories." Bailey

shared that how other people evaluate the medical students plays a role in how they fill out

evaluations, "it's hard to know how everyone else is also evaluating other students… it feels

really bad to give someone like a you know, average grade, because that could be like way worse

than what other people are giving other students."

Six participants suggested that the large role grades play in a medical students' chances to

match into residency influenced their grading practices. Casey stated, "I don't want to write a bad

evaluation for anyone, because I know that these things are really important for them for their

residency applications." Casey later added that their goal was to give their medical students "the

most positive evaluation possible." Riley shared that evaluating medical students was

"challenging because you never want to hurt someone's chances in the long run of matching into

their residency or fellowship." Bailey also reflected on the impact of grades on the career

trajectory of their students and thought about the impacts of giving a student a low numerical

evaluation possibly harming the student's chances to go into a specific specialty. During this

reflection, Bailey shared, "I think that makes it really hard for me to like to actually evaluate

someone and to not harm their chances of going into something that they really like." Similarly, Charlie stated,

> And so now I've definitely been leaning towards like hyperinflating grades, like 4s and 5s. I try to, like, I want to give more 5s, but I think there is also the part of me where I'm like it's hard to truly like to give the 5s. But I wouldn't give anything, I wouldn't give things lower, because I don't want to harm them.

Taylor also discussed concerns about the career impact of grades, and how that impacted them as a medical student,

> Just because, as a medical student [getting high evaluations is] so important. Your evaluations are literally what get you into residency, and so you have to just be, I felt very guarded that everything I say and do was going to be evaluated and be taken into account. So, I would just be, you know, very vigilant of that, and that that meant that sometimes even if I had a question I wouldn't ask, and I would like, write it down and like, look it up later. And I wish, you know, in hindsight maybe if that team dynamic didn't exist, I would have been more vocal in learning right, and asked more questions. But I was so scared that they would think that I didn't know something that I would like not ask it.

Taylor later commented that they preferred to base their evaluations on how much the student grew over the course of the rotation, rather than on the level the medical student performed at the end of the rotation, "I always try to see how much they grew over the course of like a couple of weeks, because I don't think it's fair to just grade them based on, like, you know, one data point." Finley also spoke of the idea of grading based on the student's growth,

I feel like I'm not here to punish them so generally I have been more lenient with my grading, understanding that like depending on where the students are in their year like we usually have, I mean they'll have their entire careers to grow… Overall, I think I am like more lenient and more positive in my reviews, because I know that they've grown so much over the four weeks that I've seen.

In discussing their concerns regarding the importance grades play in the career outcomes of medical trainees, the six participants alluded to feelings that submitting the most positive evaluations possible was more important than submitting accurate evaluations of the third-year medical student they worked with.

All study participants voiced concerns regarding the grading process, the subjectivity of clinical grades, or the high importance clinical grades of third-year medical students have on the career trajectory of physicians. The perceived fairness of grading practices and the importance of clinical grades were identified as reasons participants hesitated to submit accurate assessments of their third-year medical students. All participants clearly stated they did not want to harm their students in any way through the evaluation process.

Theme 3: Unpreparedness to Evaluate Medical Students

Eight participants shared that they did not feel prepared to adequately evaluate third-year medical students in the inpatient setting. These eight participants spoke of the lack of training in both teaching and evaluating students, which some participants felt was an additional burden in their first year of residency. The eight participants also shared concerns with the expectation of evaluating medical students due to their similar levels in clinical knowledge, especially early in the first year of residency.

When asked about their preparation to evaluate third-year medical students, seven participants shared that there was a one-hour session provided during their orientation to the residency program. However, six of those seven participants shared that that was not enough training to adequately prepare them for the role as an evaluator. Casey commented,

I wasn't very prepared for [evaluating medical students], to be honest. I know we did a session during orientation, where we talked about the prime rubric that they use here. And then we watched a video of a student giving a presentation. But the whole experience has been so new to me.

Charlie initially said they felt prepared to evaluate medical students based on the training during orientation, but later changed their mind and stated, "I guess, because I feel conflicted about how I should grade the answer is that it wasn't enough." Charlie also added that they were unsure what would be enough training to evaluate a medical student because of the subjectivity of grading practices. When asked in what ways they were prepared to evaluate third-year medical students, Parker responded, "I don't know that I was." Riley shared, "I haven't had a ton of formal training in how to give feedback."

Four participants commented that they learned how to evaluate from watching others, talking to their attendings and senior residents, and from reviewing their evaluations from when they were medical students. Riley commented, "I've learned how to give feedback mainly in just through how feedback has been given to me…the feedback I've received from other residents has been, has been very good. It's been frank, but also positive and honest." Bailey shared, "I think, I think just talking to other residents and interns as well like that's the best way [to evaluate]." Finley shared that they learned how to evaluate "just by reading." Finley added that, "the descriptions do help…I feel like they're explicit about, you know, what is a 5? What is a 4? And

so, I just followed those directions." Parker shared that they looked at their Medical Student Performance Evaluation (MSPE, the summative evaluation letter from their medical school) to learn how to provide written feedback to their medical students,

> To be quite honest when it comes to the comments that I write for my medical students, I actually still have my MSPE letter and so I will kind of like, just the verbiage that was used in my MSPE letter, like some of the characteristics that I really liked, I will try to use that phrasing in my evaluations of students. Because I feel like when we get the medical student evaluations it's like always at the end of like an exhausting rotation, and I like just don't have brain width to think about it and write something wonderful and nice, and oftentimes it takes me looking at a lot of that I can apply to the student… But yeah, it definitely took me like looking back and being like, huh what did other people do for me, so that I can, you know, also kind of follow that same structure.

Parker also shared that they also talked with their attending to see how they evaluated medical students, which was helpful for them to understand at which level the students should be expected to perform.

When discussing their role as an evaluator of third-year medical students, seven participants suggested that it should not be the role of the first-year resident to evaluate medical students, or that their evaluations should be weighted at a lower level than evaluations from the senior residents and attendings on the teams. Jessie commented,

> I personally don't think as an intern you should be able to grade a third-year med student. You should be expected to teach a third-year med student. I don't think the grading should be an expectation. But I believe, like once you're a senior or a third-year resident then you kind of earn the right of grading a third-year med student.

Phoenix spoke of the usefulness (or lack thereof) in having someone responsible for evaluating

medical students, yet were not formally responsible for teaching them,

> I think it would be fine if a senior resident were to evaluate medical students, especially if
>
> that's built into their role to be teaching and working with them. I'm not sure how useful
>
> it is to have interns do that. They have a lot of responsibilities on their plate. Also take
>
> into account how to evaluate students when they aren't necessarily tasked with the
>
> responsibility of teaching them.

When pressed as to whether interns should evaluate medical students given the struggle Casey

described in completing evaluations, Casey responded, "probably not," adding that they felt their

"evaluations were not very good because [they] came from such a different background." Bailey

shared that they did feel first-year residents should complete evaluations, but noted,

> I think maybe our evaluations are weighted too heavily in like their overall grade in a
>
> specialty that maybe they want to go to, because I think it is very subjective. And we are
>
> like very close to them kind of in ranking it feels, but I do think that that we should
>
> evaluate them.

Riley also commented on the assigned weight of evaluations by team member but felt the first-

year resident evaluations should carry significant weight "I think I should be pretty equal, with

the kind of more senior team members having maybe a slightly more say in it. But I think overall

your evaluation should still matter as it as an intern."

Most (eight of nine) participants felt unprepared to evaluate third-year medical students

on their performance in the clinical inpatient environment. Although training was provided on

the grading rubric during orientation, seven participants stated it was not enough to adequately

prepare them to properly evaluate third-year medical students, with some indicating they wanted

additional training in providing feedback and others that they wanted information on how the students should be expected to perform at various points of the year. Additionally, while seven participants felt the expectation first-year residents must evaluate third-year medical students should change in some way, all participants felt first-year residents should contribute to providing feedback to the medical students in some way, be it direct feedback to the students or in written comments submitted to the grading committee.

Theme 4: Preparedness for the First Year of Residency

All study participants shared how they felt supported by both their medical schools and their residency program for the expectations of their first year of residency training. The six participants who spoke of a transition to residency course or bootcamp felt particularly supported by their medical school for the expectations of residency. The four participants who completed a "Student as Teacher" elective in medical school or had teaching requirements in medical school felt supported by their medical schools for the expectations of working with third-year medical students in the inpatient setting. All study participants identified ways the residency program's orientation was helpful for preparing them for their first year of residency, specifically the procedure-based skill training and the community building events.

Six participants spoke about specialty-specific residency bootcamp or transition to residency course experiences that lasted from two weeks to one month before graduation. Finley shared of their experience,

> Yeah. So [at my medical school] in the last month before residency they split us up into separate bootcamps. So, for the medicine residents, or the medicine people who are going into IM or like very similar residencies, they had us to like certain simulation sessions, like learning some practical hands-on skills. And then, specifically, we had some sessions

on like how to be the overnight intern. If you're cross covering and like someone is not looking well or going the wrong direction in front of you, and then we also had like more didactic lectures like, you know, how to treat heart failure things like that, COPD.

Parker shared a similar experience at their medical school,

And then we also had a residency prep course that was about, it was a month, but some of them were online, and then some of them were in person, the didactics that we had. And it was different for if you were going into a surgical like specialty, and so they had to like a lot of surgery prep first, if you were doing something more, you know, medical, non-procedural, we focused on different topics. So, in that sense I felt like it did prepare me.

Phoenix had a shorter bootcamp of ten days where they "did some simulations as well as didactics for things like signing out, cross covering, note writing." Casey shared that their school had a two-week bootcamp in April before graduation; however, they were sick and unable to attend some sessions. Still, they reflected that their medical school tried "really hard to prepare [students] for residency" through the course. Taylor spoke highly of their month-long transition to residency course,

I definitely feel like my medical school did a lot to for sure prepare us. You know, I think that the course that I described at the end, like the transitions course, where they really taught us how to think like an intern and like triage complaints, think about like sick versus non-sick.

Although they described the courses as helpful, three participants reflected that it was not enough to adequately prepare them for the expectations of residency. Parker shared, "but at the same time I did that course like two months before residency, and I still feel like [the transition] was a

shock." Riley shared that they wished their medical school provided more hands-on procedure training before graduation,

> I think anytime you could have more experience doing hands-on skills that's always better. Even if it's, you know, something that you have to be there in person, or is going to take a lot of time, because they're just those, those are like very competency-based skills that every resident's gonna need to know. And if you have more experience with them in medical school, it's going to make learning them and residency and internship easier. That would be the only thing if there was more opportunities to perform procedures or procedure-based workshops as a fourth-year medical student, I think that would be very valuable.

Upon ruminating what changes medical schools could make to ease the transition to residency, Casey was unsure if there was anything medical schools could do better, "I don't think anything can really, I don't think anything could have prepared me for that first week of inpatient [rotation] to be very honest."

While not all participants had opportunities to teach lower-level medical students in medical school, the four that did indicated that they felt prepared to work with third-year medical students. Parker sought out teaching experiences,

> But then I also participated a lot in our, like our clinical skills like simulation lab. And so, you would, you know, work with the standardized patient, have a case or whatever, and then you had to present that case to a M4 student. And then we got to give feedback on presentations and like note writing. So, in that sense I do, I do think it helped me, because then you kind of see like where in the structure people are, you know they need some

feedback on, and what you can improve in notes, and I feel like those are the things that I look for now.

Casey also sought teaching experiences in medical school as a volunteer at a free clinic staffed by all levels of medical students,

Maybe the experience that was the most helpful for me was not specifically within the med school curriculum. But I worked at our free clinic, for, all [of the] years of med school. As a [third-year student], I was the team leader, and I was teaching the [second- and first-year students] during our appointments. And then, when I was the M4 I was supervising the whole team at all of our appointments. And that was a really good teaching experience because we had so much time, and we had one patient, and he was quite medically complicated. And so, every appointment we would focus on a different aspect of his care. And I would do a little teaching topic before we went in and saw the patient…So that experience was really good for me.

Taylor did not seek teaching experience, rather teaching was required of them in medical school. Taylor shared, "I think…one of the ways in which you were graded was actually being an educator...I think that kind of prepared me to be a teacher, maybe not extensively…but to like at least talk about papers that are relevant" to their shared patients with medical students. Of the participants, Jessie was the only one who completed a formal "Student as Teacher" course in medical school. The course Jessie completed aided them in feeling prepared to both teach and evaluate third-year medical students, although Jessie still did not feel fully prepared for either responsibility.

The week of orientation provided by the residency program helped all participants feel prepared to be a first-year resident. Specifically, inpatient skill simulations (procedure-based and non-procedure based) were most useful to six participants. Phoenix shared,

> I do really think simulations are useful…I know that we had done a couple of like workshops as well in our intern orientation, and those sort of like small group situations that replicate some of the situations that we might encounter on the wards actually are really important, at least for me, because I would…use those like some areas as archetypes that I could draw back upon. So, I felt like, even if I hadn't encountered a particular situation before I had encountered a variant of it, and I had some sense of like familiarity. So, I think getting like reps beforehand was important for me.

Finley also commented, "I know we had like simulation sessions at the beginning of residency during orientation week. Those were helpful [in preparing me for the expectations of residency]." Two participants, Bailey and Casey, specifically spoke about the value of the death exam simulation during orientation. Bailey stated, "I think there's definitely still a lot of things from that, like the death exam, and like some of our like modules that I still remember and use a lot." Casey shared,

> The very first patient that I saw in residency had passed before I walked into the room, and I was so grateful that we had gone over how to do a death exam during orientation, because I would have not known what to do in that situation otherwise.

Taylor spoke favorably of orientation in general, but specifically mentioned procedure training in helping prepare them for residency,

> You know, honestly, and I genuinely mean this, I feel like we did, I feel like my program did everything to allow for transition. Yeah, because we had procedural skills training as

well. We honestly had, yeah, I think, I don't think that there was anything else the program could have done. I think I felt pretty like well-prepared for, like my first rotation and like the rest of my rotations.

Jessie also commented on the procedure-specific training during orientation,

Part of that orientation did have some aspects where you briefly went over like procedural stuff, like paracentesis, spinal taps, and thoracentesis. And then there was a week, I think, where there was like a brief training; it was either one or two days… on just like ICU stuff, and what kind of things to be prepared for.

However, Jessie wished that they had more procedure training, but understood that the combination of the large training program with the limited amount of time during the week of orientation was not conducive to catering to the needs of all trainees.

The other portion of the residency program orientation that contributed to participants' feelings of preparedness for residency was its focus on community-building within the program. Phoenix appreciated the opportunities to talk with the current residents in the program,

Opportunities to engage with other like senior or outgoing residents was useful, even if it wasn't specifically about like, how do you start intern year. I had always inevitably asked those questions of senior residents. So, it was just another opportunity to interface with people that have gone through what I was about to go through.

Riley also appreciated the ability to converse with other residents, "I really appreciated all of the opportunities to, I think they were mainly organized by upper classmen and chief residents, but to get to know other residents within other years." Jessie talked about specific community-based events during orientation week, such as their continuity clinic specific event and meet-ups for residents who are parents in the program, stating, "having those platforms allowed us to ask

questions, allowed us to like get to know more about the city." While Parker did not specifically mention program-sponsored gatherings, they shared,

> Well, I guess non-clinically [the program] had a lot of resources, and like I really used those to talk to a lot of the interns or like the [second-year residents], because I had never been to Seattle. So even something I was looking as like, where should I be living? I feel like [the program] provided a lot of resources for that.

Casey also reflected the sense of community within the residency program contributing to a positive transition, albeit, this was outside of the program orientation, "the social support has been really important for me in particular. And I meet up with other residents one or two times a week pretty much every week" Casey stated that the community they built with their colleagues allowed them to get through tough times during their first year of residency.

Overall, all participants in this study felt the residency program better prepared them for the transition to the first year of residency than their medical schools. Still, they all shared feelings of anxiety and learning on the job as first-year residents. No participants indicated feeling completely prepared for the new responsibilities of being first-year residents.

Summary

This study aimed to understand the first-year resident perceptions on the influence evaluating third-year medical students had on their transition to residency. In the interviews, participants shared descriptions of their experiences in transitioning to residency and in their experiences of evaluating third-year medical students in the inpatient setting. After two rounds of coding, the researcher identified four overarching themes based on patterns and commonalities found in the coded data. The four themes identified were: 1) feeling responsible for the growth of third-year medical students, 2) concerns about the impact of subjective grades and evaluations,

3) unpreparedness to evaluate medical students, and 4) preparedness for the first year of residency.

Participants in this study collectively felt a responsibility toward the third-year medical students on their inpatient teams, even though they were uncertain of their role in teaching and evaluating them. Participants shared concerns about and frustrations with how medical students are graded and were specifically vocal about the subjectivity of grades and the significance of grades in the career trajectory of physicians in training; these voiced concerns contributed to hesitations to provide accurate assessments of their third-year medical students. All but one participant felt unprepared to evaluate their third-year medical students in the inpatient clinical setting. Participants were varied in their belief that first-year residents should evaluate third-year medical students, yet seven of the nine participants felt the first-year resident's role as an evaluator of third-year medical students should change in some form.

All participants felt apprehension of becoming first-year residents in some way but identified ways their medical school and residency program contributed to their transition to residency. The participants who completed transition to residency bootcamp felt more supported by their medical schools and prepared for their first year of residency than the participants who did not. Participants felt supported by the residency program through formal curriculum in procedure skills as well as through community building opportunities that allowed them to get to know the intricacies of the program.

Chapter 5 concludes this research study. Chapter 5 provides an analysis of the data with the literature reviewed in Chapter 2 as well as the researcher's interpretations of the study's findings. Implications of the study's findings, recommendations for action and future studies are discussed.

CHAPTER 5: CONCLUSION

Residency programs place high importance on clinical evaluations and grades when selecting medical student applicants to interview, yet not every evaluator of medical students' clinical performance are trained in the grading rubric or in providing summative feedback that contributes to the students' overall grade in a clinical rotation (Cohen et al., 2021; Filiberto et al., 2021; Hartman et al., 2019; Stephenson-Famy et al., 2015 Sudan et al., 2014; Thompson et al., 2016). In the inpatient medical setting, medical students and residents work on hierarchal teams that allow for increased structure and support for both patients and learners (Alkhail, 2015; Bandeali et al., 2017; Cherney et al., 2018; Cohen et al., 2021; Marton et al., 2015; Nishikura et al., 2021; Onorato et al., 2021). Hierarchical teams allow for near-peer coaching and teaching, which allows physicians-in-training to obtain and practice teaching and leadership skills, both of which are necessary for their careers as educators to their patients and fellow clinicians (Bandeali et al., 2017; Onorato et al., 2021). Medical residents in their first year of training often work closest with medical students, yet they feel unprepared to add to the summative evaluations of medical students on their teams (Cohen et al., 2020; Geary et al., 2021; Khaled, 2021). This basic qualitative study sought to explore the perspectives of first-year residents in evaluating third-year medical students in the inpatient clinical environment.

The role of an evaluator is one of many new responsibilities first-year residents take on seemingly overnight when they begin residency training; they also take on new roles in patient care with the ability to make decisions, which they worry may harm their patients if they make a poor decision (Boileau et al., 2019; Chang et al., 2020). First-year residents also face challenges in adapting to new hospitals, clinics, and electronic medical records systems (Boileau et al., 2019; Chang et al., 2020). These challenges contribute to anxiety and uncertainty many residents

experience in their new roles as first-year residents (Chang et al., 2020). The problem that this study explored was a gap in the literature concerning the experiences first-year residents have in evaluating third-year medical students and how the role of an evaluator may contribute to the known stressors associated with the transition to residency. The following questions guided this basic qualitative study:

> **Research Question 1:** How do first-year medical residents perceive their role as an evaluator of third-year medical students?
>
> **Research Question 2:** What is the experience of first-year medical residents regarding the preparation to evaluate third-year medical students?
>
> **Research Question 3:** How do first-year medical residents describe their lived experiences related to the transition to residency?

Social constructivism theory (Vygotsky, 1978) and an adapted version of the Dreyfus Model of Skill Acquisition developed by Carraccio et al. (2008) provided the theoretical framework of this study. These theories suggested that learning happens both through building on previously learnt skills as well as through the social aspects of the learning environment (Carraccio et al., 2008; Kay & Kibble, 2015; Sommers-Flanagan & Sommers-Flanagan, 2018; Thomas et al., 2014).

The chosen methodology of this study was a basic qualitative study. Qualitative research uses an interpretive process to understand how individuals or groups find meaning in and interpret their experiences or social worlds (Ravitch & Carl, 2021). Conceptual frameworks provide the support of all aspects of the research study, including the problem of the study through the research design (Bordage, 2009). Social constructivism is the foundation of basic qualitative research studies as a fundamental trait of basic qualitative studies is that participants construct their realities through their social connections (Merriam & Tisdell, 2016). Because

social constructivism theory contributed to the conceptual framework of this study, the researcher identified a basic qualitative study as the strongest methodology for this study.

The chosen study site for this study was the University of Washington's Internal Medicine Residency Program. This site was chosen due to the three different hospital sites that residents rotate in with differing team structures and patient populations. These variations may influence first-year resident perceptions of evaluating medical students on inpatient wards. Data was collected through virtual semi-structured one-on-one interviews loosely based on an interview guide to direct the conversations through eight open-ended questions (see Appendix E).

Nine participants volunteered for the study, all of whom met the requirements of being first-year internal medicine residents with no prior graduate medical education experience. Upon completion of individual interviews, transcripts were recorded, transcribed, and sent to each participant for review as a member check (Bloomberg & Volpe, 2019). After the member checks were received or the deadline passed, the recordings were destroyed and the researcher began coding the data using QDA Miner, a software program that assists researchers in managing, coding, and analyzing qualitative data. The researcher used an inductive coding process by assigning unique codes based on the data itself; this resulted in 74 unique codes across three domains (Saldaña, 2021). The pattern coding process occurred in the second round of coding, which allowed the researcher to group the data together to condense the codes to 26 across nine categories and three domains (Saldaña, 2021).

Study participants shared a collective feeling of responsibility for the growth of the third-year medical students on their inpatient teams, despite sharing an uncertainty in understanding their role as a teacher on the team. Participants reported concerns with the subjectivity and

importance of grades in the third year of medical school. They also shared feelings of unpreparedness to evaluate third-year medical students. Finally, participants shared insights as to how medical schools and residency programs prepare graduating medical students for their new role as first-year residents. This chapter discusses the interpretation of the study results, the implications of the study, and recommendations for action as well as for further research.

Interpretation and Importance of Findings

The sections below discuss the findings and importance related to each research question that guided this study. The research questions were developed to explain the first-year resident perceptions of and experiences in evaluating third-year medical students on inpatient rotations, as well as how first-year residents describe their experience relative to their transition to residency. As part of the interpretations and importance, the discussion includes how the conceptual and thematic frameworks that contributed to the study design as well as findings from relevant research support the findings for each research question.

Research Question 1

The first research question asked how first-year medical residents perceive their role as an evaluator of third-year medical students. This question was developed to explore the experiences first-year residents have in evaluating third-year medical students in the inpatient clinical setting. Two overarching themes that emerged from data analysis related to Research Question 1One: feeling responsible for the growth of third-year medical students, and concerns about the impact of subjective grades and evaluations. The researcher found two commonalities across these themes: the uncertainty as to whether the role of an evaluator should be an expectation of a first-year resident, and the role as a near-peer mentor was preferred to the role of

an evaluator. These commonalities are discussed in detail with connections to the review of

relevant literature and the thematic framework of this study.

Uncertainty as to Whether First-Year Residents Should Evaluate Medical Students

When medical students transition to graduate medical education, they take on new roles

in the clinical environment as part of their professional identity as residents (Chang et al., 2020).

As part of their new professional identity, residents suddenly transition from purely a student to a

practicing physician where their decisions impact patients (Boileau et al., 2019; Chang et al.,

2020; Chen et al., 2015; Thompson et al., 2016; Wolf et al., 2018). Additionally, if they work on

teams with medical students, they take on the role of supervisor and evaluator in the clinical

setting (Chang et al., 2020; Cohen et al., 2021; Karasik & Dickman, 2020). Due in part to these

new roles, the transition from medical student to resident is often described as abrupt and

anxiety-provoking for medical trainees (Boileau et al., 2019; Chang et al., 2020; Chen et al.,

2015; Thompson et al., 2016; Wolf et al., 2018). Participants in this study described their

understanding of their role as an evaluator of third-year medical student. The participants

individually described feelings of doubt, and uncertainty as to whether first-year residents should

have the role as an evaluator of third-year medical students. There were many reasons behind

this uncertainty including the lack of clarity of the level the medical students should be

performing at during various points of the year, the feelings that their medical knowledge is not

much higher than that of medical students, the feelings of being overwhelmed with other clinical

responsibilities that take away from being able to watch the medical student performance over

time, and the unwillingness to harm a medical student's future career with a bad evaluation.

Medical Student Performance Expectations. Although the Association of Medical

Colleges (AAMC) created a set of core "Entrustable Professional Activities" for medical schools

to standardize medical student progression expectations over time and to show competency of their graduates in 13 areas, the overarching Liaison Committee on Medical Education (LCME) does not require medical schools to base evaluations on them; thus, each medical school could have different expectations of student performance (Amiel et al, 2021; Carraccio et al., 2017). Because residency programs recruit students from different medical schools across the country, each incoming first-year resident has different ideas as to how medical students should perform (Chang et al., 2020). Study participants Riley, Casey, and Taylor each shared that their medical school had different expectations of medical students than the University of Washington School of Medicine has for its students. The differences these participants described varied from the ability of students to write clinical notes (Casey), the expectations of memorizing patient presentations (Taylor), the cutthroat environment created by the high expectations needed to honor a rotation (Riley). Study participants Casey, Phoenix, Finley, Bailey, and Jessie all shared an uncertainty of at which level their medical students should be performing during the year. Finely suggested, "if we just had like a refresher on like, you know, like this… an honors level like manager kind of student versus this is more like an interpreter student, it might recalibrate like my expectations more." According to the study participants who noted challenges in identifying suitable expectations of their medical students, the lack of clarity surrounding anticipated performance levels affected their ability to adequately evaluate their third-year medical students.

Clinical Knowledge Levels. Carraccio et al. (2008) suggested that medical students in their third and fourth years would be considered "advanced beginners" on the adapted Dreyfus Model of Skill Acquisition. In the implications for teaching and learning section for advanced beginners, it is suggested that this model is ideal for the integration of coaching, ideally from

near peers; however, this is not because the near peer is at a higher level for teaching practical skills, but because the near peer can better identify areas of struggle because they recently had similar issues (Carraccio et al., 2008). The participants in this research study spoke of the gap (or lack thereof) between their medical knowledge level and the medical knowledge of their students when they reflected on the difficulties in evaluating medical students. Study participants Parker, Phoenix, and Jessie specifically spoke about the similarities in the medical knowledge levels of a new first-year resident and the third-year medical students at the same time. Phoenix summarized this thought by saying they felt they had a "horizontal relationship" with their medical students. Additionally, participants Jessie, Finley, Casey, and Parker all thought they would feel more qualified to evaluate third-year medical students as senior residents because of the larger gap between the training levels.

Overstretched with Clinical Tasks. First-year residents report feeling overwhelmed with the new tasks associated with their increased responsibility as residents compared to when they were students (Boileau et al., 2019; Chang et al., 2020; Demiroren et al., 2021; Perez et al., 2022). The tasks can include non-clinical administrative responsibilities that take up a lot of their time such as dealing with insurance companies and case managers, as well as the tasks associated with getting to know new clinical environments such as understanding the medical records system and learning the physical environment in which they are now working (Chang et al., 2020). All participants in this research study commented on some aspects of increased work related to their new role as a resident. Study participant Jessie voiced strong concerns about the impact of being a new resident may have on properly evaluating medical students,

So, let's say you have Student A and Student B. And by chance, just by luck, based on scheduling and whatnot, Student A ended up doing the inpatient rotation early on in the

intern years' year. You have an intern who's super swamped and still learning the system, and then having to grade this med student. And then you have Student B, based on scheduling luck, ended up getting paired with an intern out in May of the intern year, meaning later on in the intern's year. I honestly think those two evaluations are going to be significantly different. And what you've done at this point is you've given Student B an opportunity to have a higher grade than Student A, even though they may be completely equal in skills and quality.

Study participants Jessie, Parker, and Finley specifically mentioned that being overwhelmed with other aspects of their work was detrimental to their ability to evaluate medical students. Participant Parker reflected, "I just feel like intern year, you're juggling so many different things, and like you're trying to figure out what your style is that it's really hard to pay good attention to like how another person is doing." According to the participants of this study, the additional responsibility first-year residents absorbed when they began residency training could prevent first-year residents from adequately observing the third-year medical students on their teams.

Unwillingness to Harm Students' Futures. First-year residents applied to, interviewed for, and matched into residency positions in the span of September through March of the year prior to beginning residency training (Weissbart et al., 2015). Because of their recent experiences in "the Match" process, first-year residents are acutely aware of the importance of high grades in the third-year medical school curriculum has on the career trajectory of their near-peer medical students (Cohen et al., 2021; Filiberto et al., 2022., Hartman et al., 2019; Stephenson-Famy et al., 2015; Sudan et al., 2014; Thompson et al., 2016). Study participants Charlie, Jessie, Bailey, Riley, Finley, and Taylor all referenced the importance of grades as a challenge in providing accurate evaluations of their medical students. In their interviews, each of these participants

mentioned the words "harm," "hurt," and/or "negative" when they described their hesitancy toward evaluations.

Preferred Role of Near-Peer Mentor over Evaluator

First-year residents work side-by-side with third-year medical students in a hierarchal team structure in the inpatient clinical setting (Chang et al., 2020; Ofshteyn et al., 2021; Saucier et al., 2021; Sobbing et al, 2020). The tiered supervision of medical trainees benefits learners as well as the attending physicians; students feel more supported by their near-peer residents than they do their attending physicians and attending physicians benefit from residents on the team because residents take some supervision and teaching responsibilities from the attending physicians (Eilat-Tsanani, 2020; English, 2018; Sobbing et al., 2015). Six participants in this study felt a strong connection to the third-year medical students on their teams. Study participants spoke of their responsibility to the growth of the students on their teams and wanting to help them look good to the more senior team members. For study participants Charlie, Bailey, Finley, and Parker, this stemmed from a desire to protect their students from situations that happened to them in medical school. Study participant Charlie described a wish to prevent their students from some of the rough aspects of their transition to residency and said, "I guess, for me what felt like was that kind of rough transition, I didn't really get the guidance through is mostly what I've been trying to teach [medical students]." Study participants Finley, Charlie, Parker, Bailey, and Phoenix all described more of a coaching role than that of an educator when they talked about teaching responsibilities. These five participants shared excitement about teaching the non-clinical attributes to their medical students to help them succeed when they become first-year residents. All study participants were more certain of their roles as a mentor or coach to their students than as an evaluator. Participant Parker summarized this thought by stating, "I

definitely see myself as someone yes, who can like, teach [third-year medical students] and guide them, but in no way do I feel like I could properly evaluate them." Study participants indicated their ability to connect with their third-year medical students and guide them through their rotation in their role as a near-peer mentor was preferred to their role as a near-peer evaluator.

Research Question 2

Research Question 2, "What is the experience of first-year medical residents regarding the preparation to evaluate third-year medical students?" was developed to understand how first-year residents are prepared to evaluate third-year medical students. The third theme that emerged from data analysis, unpreparedness to evaluate medical students" strongly related to this research question. After careful review of this theme, the researcher identified two collective results related to the second research questions: first-year residents did not feel prepared to evaluate third-year medical students, and first-year residents felt more prepared to evaluate third-year medical students over time and experience. The following sections discuss these findings in detail, relating them to the theoretical framework and review of relevant literature.

First-Year Medical Residents are Unprepared to Evaluate Medical Students

Because of the structure of inpatient teams in medical education, medical students often spend the most time with residents during their inpatient rotations; therefore, medical student program leadership often consider resident evaluations of their medical students to be accurate assessments of the students' performance (Dudas et al., 2012; Frank et al., 2019; Goldstein et al., 2013). Medical students also perceive their evaluations from residents to be more accurate than those from faculty (Bullock et al., 2019; Cohen et al., 2021). A barrier, however, to resident evaluations of medical students is that they are often untrained in the evaluation process; this is particularly true of first-year residents (Cohen et al., 2021). All but one participant in this study

(Taylor) stated that they felt ill prepared to evaluate third-year medical students. Study participant Parker described this feeling by stating, "I feel like I am not qualified yet to evaluate medical students. I definitely see myself as someone yes, who can like, teach them and guide them. But in no way do I feel like I could properly evaluate them." While they spoke of an hour-long session during residency orientation being helpful or somewhat helpful in providing the framework for evaluations, they felt the training was not enough to prepare them for accurately assessing where the student fell in the grading rubric or in how to provide feedback to the medical students they worked with.

The expectation of evaluating medical students who first-year residents perceive as competent versus struggling may be an additional complexity in the feelings of preparedness to evaluating third-year medical students. While Phoenix was the only participant who spoke of this, they shared that evaluating two very different medical students on the same rotation was very difficult for them, particularly in evaluating the student who was perceived as struggling. Phoenix described this experience,

Yeah, I felt really conflicted about that because it was really hard to not let the emotions kind of cloud the judgment of like the of the students' clinical ability. And I think the other thing that made it difficult is that the two students were also kind of different levels clinically as well. So, it's really hard to have two students and not compare the two of them, especially when they were so different, and we were drawing comparisons the whole rotation. I tried to take like as an objective, like as objective of a view as I could, and tried to just like again draw upon the patient experiences that they had, or the patients that they cared for, how they interacted with them, how they documented their interactions. Because I would see all their progress notes as well and then the kind of

growth that they showed from the beginning of the time that I was with them into the end. And I guess, like I tried to give each of them their own scale, because to me the growth wasn't the same but maybe the magnitude was different between the two, and I think that was important. There are certain things where it's just like either you know the skill or you don't, but there are other areas where we can expand upon with some growth and offer feedback on that. So, I think, for both of those students I actually wrote pretty lengthy feedback comments for them as opposed to other students that I've evaluated, because there was just so much more in how much I was able to actually scrutinize their skills and their work. It was difficult, though.

Study participant Casey shared similar frustrations of not knowing how to evaluate a struggling medical student who was not receptive to feedback on their team. While the situations of the struggling students were different in that Casey described only one student on their team at the time, Phoenix and Casey shared comparable thoughts of feeling uncertain in how to approach these third-year medical students.

First-Year Medical Residents Learn How to Evaluate through Social Constructivism

Social constructivism theory (Vygotsky, 1978) suggests learning happens socially through interactions with people in their learning environments, which allows learners to connect new information to previously learnt skills and knowledge (Andersen & Watkins, 2018; Suwannaphisit et al., 2021). Study participants Phoenix, Casey, and Bailey all discussed their process of learning how to evaluate through experience or building on their previous knowledge over time. These participants all felt that they felt more prepared to evaluate medical students later in the year after they built experience in the evaluation process. Demonstrating this thought, study participant Bailey stated, "I think that definitely like throughout the year it gets, it's

definitely gotten easier to like, evaluate, and to like, be more of a teacher towards medical students." When discussing how they developed their evaluation skills during the year, Charlie, Parker, Bailey, Finley, Phoenix, Taylor, and Casey spoke of learning through interactions they had with other team members. Attending physicians, senior residents, and other first-year residents played valuable roles in helping the study participants understand how to evaluate third-year medical students. When asked how they were prepared to evaluate third-year medical students apart from the session offered during program orientation, Parker answered, "The only other thing I would say is just like in discussions with other residents, seniors and co-interns, in terms of like or kind of experiences that they use to factor into their evaluations." Although Casey did not specifically mention social constructivism, their description of their learning process aligns well with social constructivism theory, "Next year I'll be a little better, because now I've seen [and evaluated] a few different medical students, and I've also [learned] how other people evaluate those med students, and what their benchmarks are." Participants in this study indicated they learned how to evaluate through constructing skills throughout the year and through social interactions within their learning environments; thus, social constructivism provides a possible explanation of how first-year residents learn how to evaluate the third-year medical students on their teams.

Research Question 3

Research Question 3 asked how first-year medical residents describe their lived experiences related to the transition to residency. This question was developed to understand how first-year residents perceived their transition from medical student to residency. The fourth theme that emerged from the data analysis, preparation for the first year of residency, directly related to this research question. Upon careful review of the theme, the researcher found two

commonalities supported by the data: supportive environments (i.e., team dynamics and leadership) assist the transition to residency, and the first year of residency requires on-the-job learning. The following sections provide additional detail of these findings and connects them to the review of relevant literature and the theoretical framework.

Supportive Environment Eases the Transition to Residency

Feeling psychologically safe in the clinical learning environment can allow learners to feel comfortable taking risks and expressing vulnerability in asking for help and voicing concerns of their skill level (Wolcott et al., 2021). The hierarchal team structure in medical education allows for a focus on near-peer teaching, which can result in greater levels of psychological safety as learners can ask questions of their near-peers without fear (Karasik & Dickman, 2020; Nishikura et al., 2021; Saucier et al., 2021; Wolcott et al., 2021). All participants in this study spoke of the supportive environment the residency program provided to their transition to residency. Study participants spoke of support at all levels, but particularly referenced the senior residents (their near peers) as being helpful resources early in their first year of residency. Study participant Charlie described this feeling clearly,

> I think the best way to be prepared is to just to feel like you'd be supported and it's okay
> for you to ask for help. And I think the residency program did do a good job of making us
> feel that way at the start. And then with the, all the seniors and attendings I've worked
> with so far, they've made it feel like a pretty supportive environment for me to be able to
> say that I don't know, or, you know, ask questions. It definitely feels a lot safer than it did
> in medical school, because I don't feel like my lack of knowledge or like me asking a
> question will determine where I'm allowed to then go for residency or whatever
> afterward.

Study participants Jessie, Phoenix, Riley, and Taylor also shared that feeling safe to ask questions to senior residents and attendings made their transition to the residency program easier than they anticipated.

In addition to feeling supported in the clinical environment, participants in this study spoke of the community they developed early in their year with their peers and near-peers within the program as being beneficial to their transition. Study participants Riley, Jessie, Parker, and Phoenix all spoke of community-building events during the program orientation as being especially valuable to their transition from medical student to resident. Participant Casey spoke specifically of the camaraderie they built early in their first year of residency with their co-residents as being most helpful in their transition to residency. Study participants indicated that building strong relationships with their colleagues outside of the clinical environment contributed to positive feelings related to their transition to being first-year residents.

Learning on the Job

Social constructivism (Vygotsky, 1978) and the modified Dreyfus Model of Skill Acquisition (Carracio et al., 2008) provided frameworks for how medical trainees develop their skills over time: the social environment paired with graduated autonomy provides a safe learning environment for them to gain clinical knowledge and procedural skills (Boateng et al., 2009; Carraccio et al., 2008; Dreyfus, 2004; Green, 2016; Kay & Kibble, 2015; Peña, 2010; Sommers-Flanagan & Sommers-Flanagan, 2018; Thomas et al., 2014). These theories pair nicely with the reflections provided by this study's participants that much of their learning in the first year of residency was done on the job as they faced a steep learning curve entering their first year of residency.

Study participants Phoenix and Casey both described their transition to residency as "trial by fire;" each reflected that they started on a difficult rotation but that dealing with the challenges in the first few weeks of residency made the rest of the year easier. Similarly, study participants Jessie, Bailey, Parker, and Taylor described challenges of not only having to increase their clinical knowledge base, but also learning the nuances of being a resident and how to interact with their teams. Jessie provided the following description of their transition to residency,

It's a steep learning curve, and so having to take time out to learn about things that you did not learn in med school, or learning more about more complex management issues, takes up a lot of time. And there's a lot of responsibilities that get added on as an intern. You have to make sure your patients are well taken care of, you've rounded on all your patients, and then, on top of that, you do have like all the responsibilities involved to, with respect to you know, making sure your med students are also learning, and they're presenting appropriately, managing the patients appropriately. And then added to all this is obviously the background requirements that I needed. So, like, Step 3 [a medical licensing exam], something that's needed to be completed in intern year, and that's something that's also that also puts pressure, is an added pressure in your learning, and you know, transitioning from obviously a med student to an intern.

Study participants Charlie, Bailey, Finley, Parker, Riley, and Taylor each spoke of their growth over the course of the year, resulting in feeling more confident and requiring less oversight from attendings and senior residents than in their first rotation in residency. Casey reflected on their growth over the course of their first year of residency,

So now being almost an R2, I definitely have grown a ton. I've become a lot more

efficient, a lot more independent. I'm on [rotation name] right now, and last month I was

on [location] wards, and [that] was my last internal medicine wards rotation of this year

because I've done [all three locations]. I noticed that things are coming up to me a lot

easier than they were before. I'm coming up with better plans in the morning without

having to run them by the senior resident first. I ran two rapid responses by myself, which

I would not have been able to do a few months ago.

The decrease in oversight the participants in this study spoke of aligns with the medical trainee

progression as outlined in the adapted version of the Dreyfus Model of Skill Acquisition

(Carracio et al., 2008; Green, 2016; Peña, 2010).

Implications

The findings of this study suggested that first-year residents feel unprepared to evaluate

and uncertain as to whether they should evaluate third-year medical students in the inpatient

clinical environment. Potential reasons identified for being unprepared were lack of training in

the evaluation process, a lack of understanding in the expectations of how third-year medical

students should be performing in various parts of the year, the similarities in clinical knowledge

levels between third-year medical students and first-year residents, and the high awareness of the

great importance clinical grades have on the career trajectory of physicians-in-training. The

findings of this study also indicate that first-year residents prefer the role of near-peer mentor of

their third-year medical students to the role of an evaluator of medical students, as they feel a

closeness to their medical students as well as a responsibility for the growth of their medical

students. The findings of this study also suggest that first-year residents learn important skills on

the job and that a supportive environment may ease the transition to residency for first-year residents.

Research question 1 asked how first-year residents perceived their role as an evaluator of third-year medical students. Findings based on individual interviews of nine study participants suggested first-year residents recognize the role of evaluator as important but perceive themselves to be unqualified for the role. Findings related to this research question reinforced many of the results of the study by Cohen et al. (2021), a study conducted on the experiences first-year pediatrics residents had in evaluating medical students: 1) first-year residents questioned their role as evaluators of medical students and felt uniformed about the grading process as well as unprepared to provide summative feedback, 2) first-year residents felt a barrier to accurately assess medical students is the possibility of negatively affecting a student's career trajectory, 3) first-year residents felt a deep connection with the medical students on their teams, which allowed them to support and guide the medical students over the course of the rotation, and 4) competing responsibilities were a barrier to providing assessments of medical students. Unrelated to the study by Cohen et al, (2021), the findings of this study implied that first-year residents perceive the grading process of third-year medical students to be subjective and unfair, which they felt altered their ability to adequately evaluate their third-year medical students. Consideration of this study's findings may lead to further study and mindfulness of the heightened awareness first-year residents have in the importance of medical student clinical grades and how this greater awareness may change the way they interact with and evaluate their medical students.

The second research question asked how first-year residents describe their experiences in their preparation to evaluate third-year medical students. This study found first-year residents

described their experiences to prepare third-year medical students to be incomplete and that first-year residents may primarily learn how to evaluate through time and experience. Medical student clinical rotation and residency program leadership could consider these results when providing instruction and resources to first-year residents in how to evaluate third-year medical students.

Research question 3 asked how first-year residents described their lived experiences related to the transition to residency. Based on the study participants' responses, this study found that first-year residents described their experiences as learning on the job. The results of this study confirmed the findings of multiple studies surrounding the transition to residency from the perspective of the first-year resident (Boileau et al., 2019; Chang et al., 2020; Chen et al., 2015; Demiroren et al.; 2021; Perez et al., 2022; Thompson et al., 2016). First-year residents face steep learning curves and feel unprepared for their new roles related to their patients and clinical teams (Boileau et al., 2019; Chang et al., 2020; Demiroren et al., 2021; Perez et al., 2022). The results from this study add that first-year residents described a supportive environment both inside and outside the clinical atmosphere as especially beneficial to their transition to residents. While studies on near-peer teaching in hierarchal teams in the clinical learning environment provide a psychologically safe space for learners, none address the benefits of community and camaraderie built outside of the learning environment (Alkhail, 2015; Karasik & Dickman, 2020; McKenna & Williams, 2017; Nishikura et al, 2021; Rees et al; 2016; Saucier et al., 2021; Sobbing et al., 2015; Wolcott et al., 2021). Residency program directors could consider the results of this study when creating orientation activities for new first-year residents in their program. It is possible that creating optional social events for current and new residents to attend could benefit their incoming first-year residents.

Recommendations for Action

The purpose of this basic qualitative study was to explore the lived experiences of first-year medical residents evaluating third-year medical students in an inpatient clinical environment. Based on a review of relevant literature, data collected in the individual interviews with the nine study participants, and the identification of collective emergent themes that developed from the data analysis process, the researcher presents leaders in undergraduate and graduate medical education with recommendations aimed at improving the first-year resident experiences.

The first recommendation is for residency programs that require first-year medical residents to evaluate third-year medical students consider removing this requirement. Eight of the nine study participants felt burdened in some way by the role of an evaluator of medical students, and all nine participants felt they will be more prepared for this role as they become senior residents on the inpatient teams. Not all the participants were evaluated by the first-year residents they worked with as medical students, which indicates that not all programs have this requirement of their first-year residents. Study participants Finley and Phoenix shared that they were not evaluated by first-year residents on their internal medicine rotation as third-year medical students, and Charlie was unsure if they were. Instead of completing summative assessments in the evaluation format, first-year residents should have opportunities to provide comments or contribute to grading discussions of the medical students they work with. Replacing the requirement to submit summative evaluations with providing only written feedback of their medical students could allow for first-year residents to provide input on the growth they saw in their students as well as any concerns they noted in the performance while removing the grading requirement that causes them additional stress and work in their first year of residency.

Additionally, removing the role of evaluator of medical students from first-year residents could result in more accurate grades of medical students, as the participants in this study stated they inflate their students' grades. Improving the accuracy of clinical grades could benefit residency programs, as they often use clinical grades as a tool to select which applicants to interview for their residency programs (Filiberto et al., 2021; Hartman et al., 2019; Stephenson-Famy et al., 2015; Sudan et al., 2014; Thompson et al., 2016).

A second recommendation is that medical student program leadership consider providing evaluators of third-year medical students with training in the evaluation process with realistic examples of what each level of performance looks like in the early, mid, and end of the third year of medical school. As part of this training, medical student program leadership could provide a standardized tool for people responsible for providing feedback to third-year medical students. The uncertainty as to how students should be performing was a noted frustration of the study participants, and these descriptions could benefit all levels of evaluators, particularly those new to their institutions because medical evaluations are not standardized across medical schools. In this study, Charlie and Riley expressed concerns that everybody approaches evaluations and feedback differently. Study participant Charlie shared,

> I think it's really hard because everybody evaluates students differently. And when you talk to some, and if I talk to some co-interns they're like, you know, 5s down the board, like that doesn't really matter unless they do something egregious, like 5s down the board. And like a 5, when you read the description, it feels like almost unattainable.

Having a standardized way to provide feedback could alleviate anxiety around providing feedback as well as provide expectations for students and residents in how they will receive feedback from their supervisors.

The third recommendation is for all medical schools to consider providing and requiring formal "Student as Teacher" training for medical students in their fourth year of medical school. Near-peer teachers who have training in teaching skills or in how to provide feedback are more confident and feel better prepared to teach in the clinical setting (Bandeali et al., 2017; Erlich & Shaughnessy, 2014). While only one study participant (Jessie) completed in a "Student as Teacher" elective in medical school, study participants Parker and Casey also opted into more formal educational experiences in medical school to build near-peer teaching skills and Taylor was required to teach in their clinical rotations by incorporating applicable studies into their patient presentations. These four participants felt prepared or somewhat prepared by their medical school for the teaching responsibilities of residency, whereas the other five participants stated they did not feel prepared for this responsibility at all by their medical schools. Study participant Parker described the benefits of learning to teach in medical school,

> I think I was [prepared to teach third-year medical students]. I actually did a lot of tutoring. So, I don't think my medical school specifically prepared everyone. I think I knew that I wanted to do something in medical education and like, sought it out. And so I like individually tutored quite a few people, mostly like [first- and second-year medical students], so like non-clinical tutoring. But then I also participated a lot in our, like our clinical skills like simulation lab. And so, you would, you know, work with the standardized patient, have a case or whatever, and then you had to present that case to a [fourth-year] student. And then we got to give feedback on presentations and like note writing. So, in that sense I do, I do think it helped me, because then you kind of see like where in the structure people are, you know they need some feedback on, and what you can improve in notes, and I feel like those are the things that I look for now.

Participants in this study also supported the argument that medical school is the appropriate time for physicians in training to learn how to teach (as opposed to during residency) because those that do are better preparing their graduating students for the teaching responsibilities in residency (Bandeali et al., 2017; Erlich and Shaughnessy, 2014). An easy way to provide this training could be as part of the bootcamp or transition to residency course medical schools provide to their graduating medical students. The timing of the bootcamp would allow for the knowledge to be as fresh as possible before they begin residency, where they can apply what they learned as soon as day one of residency training. If all medical students are provided this training in medical school, learning to coach their near peers could become one less stressor in the first year of residency. Medical schools could also benefit from requiring "Student as Teacher" rotations. As Song et al. (2015) found, students who learned how to become educators were more likely to contribute to curriculum changes in their medical schools.

Recommendations for Further Study

Based on the findings of this study, the researcher recommends a broader study on the perceptions of residents at all levels evaluating third-year medical students. A broader study could include residents of different specialties at a single institution, or a multi-site study of residents in a single specialty. Participants in this study felt unprepared to evaluate third-year medical students as first-year residents. Study participant Casey shared,

> I wasn't very prepared for [evaluating medical students], to be honest. I know we did a session during orientation, where we talked about the prime rubric that they use here. And then we watched a video of a student giving a presentation. But the whole experience has been so new to me.

While most participants in this study stated they predict they will feel more prepared to take on this role as senior residents, the existing literature on resident perceptions of evaluating medical students remains sparce (Cohen et al., 2021). Based on this study, a possible barrier to submitting accurate evaluation of medical students is the first-year resident's unwillingness to harm their students' future with low scores or less than glowing comments. Study participant Bailey shared this feeling when they stated,

> What…I've found difficult about evaluating students is that I know how much of a subjective affect it is on giving someone a numerical score, and how that could like really hurt or harm their like grade in a specific rotation that could ultimately affect what they go into.

A broader study that included residents in all training levels could identify whether this barrier is unique to first-year residents, or if it persists throughout residency.

Research on the benefits of near-peer teaching in medical education suggest psychological safety provided by near-peer mentors and teachers aids in medical students' comfort to ask questions or voice concerns without risking possible repercussions (Karasik & Dickman, 2020; Nishikura et al., 2021; Saucier et al., 2021; Wolcott et al., 2021). However, based on data collected in this study, whether the near peer coach has an evaluative role may also contribute to a student's perceived safety to ask questions. While only two participants in this study shared that they were not evaluated by first-year residents on their internal medicine rotation in medical school, both participants said they felt safer in asking questions to their first-year residents as third-year students because they would not be evaluating them. Due to the small sample size in this study, this was not prevalent enough to be a significant finding. Yet, this researcher recommends a study on whether the perception of third-year medical students'

psychological safety changes based on the knowledge that their near peers will or will not be evaluating their performance.

Conclusion

The purpose of this basic qualitative study was to explore the lived experiences of first-year medical residents evaluating third-year medical students in an inpatient clinical environment. Based on the study participants' descriptions of their perception of their role as an evaluator, the results of this study indicated that first-year residents want to assist in the growth of the third-year medical students on their teams and teach non-clinical skills. However, first-year residents may feel their clinical knowledge levels are too similar to third-year medical students to adequately evaluate their students. Study participants described a steep learning curve and learning by doing when they talked about their transition to residency. Yet, study participants also identified the benefits of psychologically safe learning environments and building community and a sense of camaraderie with their colleagues as being particularly beneficial to their transition to residency. Upon the analysis of the data collected through nine semi-structured interviews, the findings of this study suggested that first-year residents may not feel prepared to evaluate third-year medical students in the inpatient setting. The results of this study also indicated that first-year residents may feel evaluation of third-year medical students is an additional burden to the first year of residency training.

The findings presented in this study contribute to filling the gap in literature regarding the experiences first-year residents have evaluating third-year medical students and how their new role of an evaluator of medical students may contribute to the known burdens associated with the transition to residency (Boileau et al., 2019; Chang et al., 2020; Chen et al., 2015; Demiroren et al.; 2021; Perez et al., 2022; Thompson et al., 2016). The results of this study supported the

findings of existing research on near-peer relationships in medical education, the benefits of hierarchal teams in the inpatient clinical environment, and the perception first-year medical residents have of their transition to residency. The researcher identified two areas for further research based on this study: a larger study on the experiences of residents at all training levels in evaluating third-year medical students and a study on whether the knowledge that a near-peer will evaluate performance changes a third-year medical student's perceived level of psychological safety in a team setting.

Based on this study's findings, the researcher recommends changes in medical education. First, as the findings suggest first-year residents may not feel prepared to evaluate medical students, medical schools and residency programs could standardize expectations by removing this role from all first-year residents. The evaluator role is currently not a standard expectation of all first-year medical residents, and removing this role completely may benefit graduating medical students' transition to residency by removing a burden they may not have time for and may not feel qualified to do. A second recommendation is for medical schools, or student programs within medical schools, to consider providing further training in the evaluation process, specifically by providing clear examples of third-year medical student performance levels at each stage of the year and by providing guides for standardized feedback to provide to third-year medical students. Additional training in these areas could help all levels of evaluators adhere to grading rubrics and may provide more consistency in feedback given to medical students. A final recommendation is for medical schools to consider providing "Student as Teacher" curriculum for all graduating medical students so first-year residents are not required to learn how to coach and teach their near peer medical students on the job. If applied, these recommendations could greatly improve the transition for residency for medical trainees.

Applying these recommendations could also have the potential to benefit residency programs and medical schools which could provide long term benefits to all levels of medical education.

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Appendix A

SITE INSTITUTIONAL REVIEW BOARD COMMUNICATION

Harper, Whitney

From:	HSD Rely <hsdrely@uw.edu>
Sent:	Monday, August 22, 2022 2:25 PM
To:	Harper, Whitney
Subject:	RE: Guidance for External IRB

Follow Up Flag:	Follow up
Flag Status:	Flagged

Hi Whitney,

Thanks for getting back to me. Based on your responses, it sounds as though the UW is not engaged in the conduct of this human subjects research and you do not need to obtain IRB review or determination from the UW IRB.

Because your study does involved UW residents, I wanted to mention that you may need to reach out to the UW HR Labor Relations representative who negotiates with the resident's and fellows' union about the study before beginning it. This is currently Jennifer Mallahan mallaj@uw.edu. This is outlined as a requirement in our IRB Protocol when UW-reviewed research involves UW residents and fellows. We want to ensure that residents and fellows feel free to truly make a voluntary decision about participation and that any research data will not be used in the residents' and fellows' supervisor or program evaluation of them. So, please do keep that in mind as you proceed.

Best of luck with your research, and let us know if you have any additional questions.

Best,
Bailey

Bailey Bodell (she/her), CIP
Senior IRB Reliance Administrator
4333 Brooklyn Ave NE, Box 359470, Seattle, WA 98195
p: 206.221.7918   f: 206.543.9218   bbell3@uw.edu

Appendix B

SITE LABOR RELATIONS COMMUNICATION

Harper, Whitney

From:	Jennifer Mallahan <mallaj@uw.edu>
Sent:	Wednesday, September 21, 2022 10:36 AM
To:	Harper, Whitney
Cc:	Cindy A Hamra; Hayley Fisher
Subject:	RE: Guidance for Dissertation Study with GME Subjects

Follow Up Flag:	Follow up
Flag Status:	Flagged

Hi Whitney,

Thanks for reaching out. As long as the study is voluntary, no concerns from Labor Relations.

Thank you,

Jennifer

Jennifer Mallahan
Labor Relations Negotiator
206.616.8031 / mallaj@uw.edu

Appendix C

RECRUITMENT EMAIL

Hello interns!

I'm writing to ask for your voluntary participation in a research study I am conducting for my Doctorate in Education degree (Ed.D.) at the University of New England titled "Perspectives of First-Year Internal Medicine Residents on Evaluating Medical Students". The purpose of this study is to explore the lived experiences of first-year medical residents evaluating third-year medical students in the inpatient clinical environment.

You may be eligible to participate if you are 18 or older and a first-year resident in the internal medicine residency program with no prior graduate medical education training and have evaluated a third-year medical student on their work in the inpatient clinical environment. Participation will consist of a semi-structured interview lasting approximately 60 minutes. Interviews will be conducted via Zoom. The interviews will be recorded and transcribed. You will be asked to provide verbal consent at the start of the interview. You will have the opportunity to review your de-identified interview transcripts before I begin the coding process. Any identifying information will be removed prior to data analysis.

Your participation is completely voluntary and will in no way impact your standing in the training program. Participant privacy and confidentiality are very important to me. All participant names and other identifying information will be given a pseudonym. I will destroy all recordings after transcription, and all files will be kept on my personal OneDrive account through the University of New England. The attached Participant Information Sheet provides privacy and confidentiality information regarding your participation.

If you are interested in participating in this study or would like additional information, please contact me at wharper@une.edu.

Thank you for your consideration,

Whitney Harper
Doctoral Candidate, University of New England

Appendix D

PARTICIPANT INFORMATION SHEET

Version Date:	March 13, 2023
IRB Project #:	0323-14
Title of Project:	Perspectives of First-Year Internal Medicine Residents on Evaluating Medical Students
Principal Investigator (PI):	Whitney Harper
PI Contact Information:	wharper@une.edu

INTRODUCTION

- This is a project being conducted for research purposes. Your participation is completely voluntary.
- The intent of the Participant Information Sheet is to provide you with important details about this research project.
- You are encouraged to ask any questions about this research project, now, during or after the project is complete.
- The use of the word 'we' in the Information Sheet refers to the Principal Investigator and/or other research staff.

WHAT IS THE PURPOSE OF THIS PROJECT?

The general purpose of this research project is to explore the lived experiences of first-year medical residents evaluating third-year medical students in an inpatient clinical environment. Ten participants will be invited to participate in this research as part of the investigator's dissertation research.

WHY ARE YOU BEING ASKED TO PARTICIPATE IN THIS PROJECT?

You are being asked to participate in this research project because you are a first-year medical resident aged 18 or older who has evaluated a third-year medical student on their work in the inpatient clinical environment.

WHAT IS INVOLVED IN THIS PROJECT?

- You will be asked to participate in one semi-structured interview with the principal investigator that will last approximately 60 minutes over Zoom.

- You can choose a pseudonym to be used in place of your name for the study.

- You will be given the opportunity to leave your camera on or off during the interview, and your interview will be recorded using Zoom.

- You will be emailed a copy of your interview transcript to review for accuracy. You will have seven calendar days to respond, or the PI will assume that you have no comments, and the transcript will be assumed to be accurate.

WHAT ARE THE POSSIBLE RISKS OR DISCOMFORTS INVOLVED FROM BEING IN THIS PROJECT?

The risks involved with participation in this research project are minimal and may include an invasion of privacy or breach of confidentiality. This risk will be minimized by using pseudonyms for each of the participants' names and by eliminating any identifying information from the study. Participants will have the opportunity to review their transcripts for accuracy and will be given the choice to have their cameras off during the interview. Participants have the right to skip or not answer any questions, for any reason.

Please see the 'WHAT ABOUT PRIVACY & CONFIDENTIALITY?' section below for additional steps we will take to minimize an invasion of privacy or breach of confidentiality from occurring.

WHAT ARE THE POSSIBLE BENEFITS FROM BEING IN THIS PROJECT?

There are no likely benefits to you by being in this research project; however, the information we collect may help us understand the experiences of first-year medical residents when evaluating third-year medical students.

WILL YOU BE COMPENSATED FOR BEING IN THIS PROJECT?

You will not be compensated for being in this research project.

WHAT ABOUT PRIVACY AND CONFIDENTIALITY?

We will do our best to keep your personal information private and confidential. However, we cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Additionally, your information in this research project could be reviewed by representatives of the University such as the Office of Research Integrity and/or the Institutional Review Board.

The results of this research project may be shown at meetings or published in journals to inform other professionals. If any papers or talks are given about this research, your name will not be used. We may use data from this research project that has been permanently stripped of personal identifiers in future research without obtaining your consent.

The following additional measures will be taken to protect your privacy and confidentiality:

- Data will only be collected during one-on-one participant interviews using Zoom, no information will be taken without participant consent, and transcribed interviews will be checked by participants for accuracy before they are added to the study.

- Pseudonyms will be used for all participants and any personally identifying information will be stripped from the interview transcript.
- All names and e-mails gathered during recruitment will be recorded and linked to a uniquely assigned pseudonym within a master list.
- The master list will be kept securely and separately from the study data and accessible only to the principal investigator.
- The interview will be conducted in a private setting to ensure others cannot hear your conversation.
- Participants are given the option to turn off their cameras during the Zoom interview.
- Once member checking of the transcribed interview is complete the recorded Zoom interview will be destroyed. Once all transcripts have been verified by the participants, the master list of personal information will be destroyed.
- All other study data will be retained on record for 3 years after the completion of the project and then destroyed. The study data may be accessed upon request by representatives of the University (e.g., faculty advisors, Office of Research Integrity, etc.) when necessary.
- All data collected will be stored on a password protected personal laptop computer accessible only by the principal investigator.

WHAT IF YOU WANT TO WITHDRAW FROM THIS PROJECT?

You have the right to choose not to participate, or to withdraw your participation at any time until the Master List is destroyed without penalty or loss of benefits. You will not be treated differently if you decide to stop taking part in this project.

If you request to withdraw from this project, the data collected about you will be deleted when the master list is in existence, but the researcher may not be able to do so after the master list is destroyed.

WHAT IF YOU HAVE QUESTIONS ABOUT THIS PROJECT?

You have the right to ask, and have answered, any questions you may have about this research project. If you have questions about this project, complaints or concerns, you should contact the Principal Investigator listed on the first page of this document.

WHAT IF YOU HAVE QUESTIONS ABOUT YOUR RIGHTS AS A RESEARCH PARTICIPANT?

If you have questions or concerns about your rights as a research participant, or if you would like to obtain information or offer input, you may contact the Office of Research Integrity at (207) 602-2244 or via e-mail at irb@une.edu.

Appendix E

INTERVIEW PROTOCOL - SEMI-STRUCTURED INTERVIEW QUESTIONS

1. Please tell me about your overall experience as a first-year resident thus far.

2. How would you describe your transition from being a medical student to a first-year resident?

3. How were you prepared for residency by your medical school?

    a. By your residency program?

    b. Is there anything would you do differently?

4. Can you describe your inpatient ward experience in medical school?

    a. What was the team structure?

    b. Did first-year residents evaluate you?

        i. How did these evaluations differ from evaluations from senior residents?

        ii. How did these evaluations differ from evaluations provided from faculty/attendings?

5. Can you describe your inpatient ward experience thus far in residency?

    a. How has your experience changed since you started?

    b. In what ways has your role changed on wards since starting residency?

6. What is your perception of yourself as a teacher of third-year medical students?

    a. Do you feel you were prepared by your medical school and/or residency program to be a teacher of third-year medical students? *In what ways?*

    b. Do you believe your understanding of your role as a teacher has changed since you started residency? *How?*

7. What is your perception of your role as an evaluator of third-year medical students?

  a. In what ways were you prepared to evaluate third-year medical students on the wards?

  b. How do you believe your role as an evaluator of third-year medical students has changed since you started residency?

8. Please share anything else you would like to say about working with or evaluating third-year medical students that hasn't been mentioned today.

Appendix F

IRB EXEMPTION LETTER

UNE UNIVERSITY OF NEW ENGLAND

INNOVATION FOR A HEALTHIER PLANET

Office of Research Integrity
Institutional Review Board

Biddeford Campus
11 Hills Beach Road
Biddeford, ME 04005
(207) 602-2244 T
(207) 602-5905 F

Portland Campus
716 Stevens Avenue
Portland, ME 04103

DATE OF LETTER: March 13, 2023

PRINCIPAL INVESTIGATOR: Whitney Harper
FACULTY ADVISOR: Debra L. Welkley, Ed.D.

PROJECT NUMBER: 0323-14
RECORD NUMBER: 0323-14-01

PROJECT TITLE: Perspectives of First-Year Internal Medicine Residents on
                             Evaluating Medical Students

SUBMISSION TYPE: New Project
SUBMISSION DATE: March 07, 2023

ACTION: Determination of Exempt Status
DECISION DATE: March 13, 2023

REVIEW CATEGORY: Exemption Category # 2ii

The Office of Research Integrity has reviewed the materials submitted in connection with the above-referenced project and has determined that the proposed work is exempt from IRB review and oversight as defined by 45 CFR 46.104.

You are responsible for conducting this project in accordance with the approved study documents, and all applicable UNE policies and procedures.

If any changes to the design of the study are contemplated (e.g., revision to the research proposal summary, data collection instruments, interview/survey questions, recruitment materials, participant information sheet, and/or other approved study documents), the Principal Investigator must submit an amendment for review to ensure the requested change(s) will not alter the exempt status of the project.

If you have any questions, please send an e-mail to irb@une.edu and reference the project number as specified above within the correspondence.

Best Regards,

Bob Kennedy

Bob Kennedy, MS
Director of Research Integrity